

*A COMPREHENSIVE GUIDE
FOR INTERVIEWS*

— OVERVIEW'S
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SATYAM
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e-interview
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DEDICATION

This book is dedicated to our Lord and Saviour Jesus Christ. This book would not have come to pass without the Grace and Mercy of our Lord, God Almighty.

We thank our Lord for helping us to publish this book. The anointing Grace of our King is there upon this book. Hence, We believe that, all will be surely benefited out of this book and get placed in a good company.

We once again take this opportunity to glorify our Lord of Lords, King of Kings and Prince of Peace Jesus through this book,

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PREFACE

This is the first edition of **e-INTERVIEW**. This book covers the various aspects of placements. Its purpose is to present as clearly and completely as possible, The various tips and tricks to perform very well in an interview and get placed

This task is challenging but simple. The various types of interviewing techniques handled by the companies are discussed. Impressing your interviewer is a talent, The various ways to do that is given here to discover yourself .

The different company's profile and Their history are briefly presented. moreover their Technical questions, Aptitudes questions and GD topics are discussed respectively and detailed. Various types of Resumes are also a part of this book. Even though we have discussed about various aspects of interviews, aptitudes, technicals we acknowledge that only God's grace and your optimism can place you. Remember its the aptitude that matters not but the attitude which will make a difference.

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Resources

Interview Tips

A JOB interview can be a nerve-wracking experience if you are not prepared and lack self-confidence.

e-INTERVIEW present a few tips that will help you to brush up on your interview skills and come out as a winner from your interview!

Behavior-Based Approach to Answering Interview Questions

Listening to and Answering Questions

You need to concentrate and listen very carefully to the questions. Make sure you understand the question before offering any answer. Allow the interviewer to finish asking the question before offering an answer.

If you miss the question or are not sure about it, rephrase the key words and ask the interviewer to clarify. Do not attempt to answer without fully understanding the question.

If you do not anticipate a question and have not prepared an answer for it, pause and think before offering one. It is better to think carefully for an appropriate answer than to offer an answer in a hurry. Make sure you do not spend too much time thinking.

You need to take the initiative in providing useful information for the interviewer in order to evaluate your suitability for the position. Do not give Yes/No answers only. Give your answer directly and support it with relevant evidence from past experience because interviewers do not have time to listen to your long and comprehensive replies.

Although you should prepare your answers for interview questions beforehand, you should not recite them directly from your memory in front of the interviewer. You should memorize the main ideas and offer the answers in a natural and spontaneous way.

You should attempt to offer positive responses to every question in the interview. Even when your answer is negative, you should stress your present situation and discuss your future plans or inclinations. Offer clear and positive explanations of why some of your accomplishments are less than satisfactory. Do not try to put blame on others or offer an excuse for yourself. Be honest and sincere about your weakness or shortcoming, and turn it into something positive.

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Language Use

If you cannot hear the question, do not ask the interviewer to repeat directly using

"Pardon me" or

"Excuse me, can you repeat the question again?"

They make the interviewer feel that you have not been paying attention. Use key words the interviewer has used and rephrase the question to ask for clarification. You can use, for example,

"Do you mean...?" or

"Do I understand correctly that you mean...?"

Be careful in using expressions such as

"Sure"

"Obviously"

"Of course"

"No problem"

"As you know"

They make the interviewer feel you are conceited and arrogant. Offer *Answers* that are factual and modest. You can rephrase your *Answer* in other equally positive ways, for example,

"I believe that..." or

"I don't see a major problem in..."

Be careful in using expressions such as

"To be frank" or

"To be honest".

They imply that you have not been honest in answering previous questions. You should only use these expressions when you want to turn something negative into something potentially positive, for example, negotiating salary and terms of employment or discussing your weaknesses.

When you cannot avoid a negative answer, you should soften the tone of the reply first, then offer affirmation to reassure the interviewer of your ability and eagerness for the job. For example,

"I do not have the answer to that question at this moment, but my past experience shows that I can learn fast. I believe I can acquire knowledge of that field on the job." End your answers promptly when you have offered all necessary details. Do not end by saying

"That's all."

You can indicate the end of your reply by nodding your head lightly to assure your interviewer.

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Body Language

Handshake

Shaking hands with your interviewer is good practice although it is not common in Hong Kong, even in the business field. It helps you create a friendly and professional image. Make sure your handshake is prompt and firm.

Posture

You can place your portfolio or briefcase on the side of your chair or on your lap. Make sure you feel comfortable with your posture. You may sit upright or perhaps lean forward a little to project an eager and confident image. You should not fidget. Make sure you are seated properly in your interview suit and that it is not creased.

Eye Contact

You should look at all interviewers when answering questions. Don't just maintain eye contact with the interviewer who asked you the question you are **Answering**. Make sure you look sincere and honest.

Facial Expressions

You can keep a friendly smile on your face to show your enthusiasm. Be careful not to look too eager for the job or so relaxed that you don't seem to care. Try to project a serious and professional image on your interviewers.

Voice

You should speak clearly and relatively slowly. You can pause when you are thinking of appropriate replies before answering questions. Make sure you do not pause for too long. Be careful not to pause too often in the middle of your answers or fill your pause with too many fillers such as

"Em..." or

"Ugh..."

They make it difficult for your interviewers to follow what you are saying.

Humour

You can use humour appropriately in an interview to lighten up a tense atmosphere in the interview room. You can demonstrate your leadership quality by showing that you are a confident person who is relaxed and capable of controlling a tough situation.

Be careful not to be overly humorous. Your interviewers may feel that you are not serious enough for the job.

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Some Interview Pitfalls

Summary

If you are interested in the position, stress this to the interviewer. If you get the impression that the interview is not going well and that you have already been rejected, do not let your discouragement show. Once in a while an interviewer who is genuinely interested in you may seem to discourage you as a way of testing your reaction. Remember to thank the interviewer for his/her time and end the session with a confident and firm handshake.

1. Plan to arrive 10 minutes early. This will give you ample time to catch your breath, gather your thoughts and make a quick trip to the washroom to give your appearance one final check. To avoid unnecessary stress, choose your interview attire the night before.

2. Greet the interviewer by his or her last name. If you are unsure of the pronunciation, do ask the employer to repeat it. Or better still, check it with the front desk personnel or receptionist before walking into the interview room.

3. Let the interviewer lead the conversation but try to get him/her to describe the position and duties to you early in the interview. This will allow you to apply your background, skills and achievements to the position.

4. When asked: "Tell me about yourself?", focus your answers on your background and a few personal professional and accomplishments.

5. Stress on your achievements. For example: your sales records, the processes you have developed or systems installed, projects that you initiated, etc.

6. Show enthusiasm. This can be demonstrated through verbal and non-verbal cues (for example, appropriate body language like nodding can be used to support your interest). Enthusiastic feedback can enhance your chances of being further considered.

7. Answer questions by speaking in terms of the position. Emphasize what you can do for the company. Mention specific accomplishments that show your abilities and determination to succeed in this job. Your answers describe the position and duties to you early in the interview. This will allow you to apply your background, skills and achievements to the position. should tell the employer why you would be an asset to the company and not why you need a job.

8. Bring an extra copy of your resume.

9. Explain whenever possible; don't answer with a simple "yes" or "no."

Be prepared to Answer questions such as:

- * **Tell me about yourself.**
- * **Tell me about your background and accomplishments.**
- * **What are your strengths? Weaknesses?**
- * **What interests you about our company?**

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Also, be prepared to ask questions such as:

- * What would I be expected to accomplish in this position?
- * What are the greatest challenges in this position?
- * How do you think I fit the position?

Remember, your lack of questions may be mistaken as lack of interest in the job.

Some interview pitfalls to avoid

1. **Don't arrive at the interview late.**
2. **Don't over or under dress or dress inappropriately** for the position. First impressions do count and you want to be dressed to show that you fit into the desired role.
3. **Don't wear strong perfume.**
4. *Don't forget to take with you extra clean copies of your CV* as well as a notebook and pen with which to take notes.
5. **Don't forget to shake the hand of the Interviewer firmly** - a limp or sweaty handshake will not be looked on favorably.
6. **Don't chew gum, smoke, eat or drink at the Interview.**
7. **Don't act distracted.** Look the Interviewer straight in the eye and give him your full and undivided attention.
8. **Don't let your body language send the wrong messages.** Be aware of the nonverbal cues you are sending out! Sit upright and straight in the chair facing the employer and smile. Lean forward occasionally to express interest. Avoid crossing your arms or legs in front of you (suggests defensiveness), slouching in the chair (suggests sloppiness and lack of energy), leaning too far back (may be interpreted as being overly familiar and disrespectful), talking to the floor (lack of confidence) or flirting.
9. **Don't refer to the Interviewer by his first name** unless he specifically asks you to do so.
10. **Don't talk about your weaknesses** or failings or apologize for lack of education, experience, training etc. Everyone has weaknesses; the Interview is the time to showcase your enthusiasm and strengths.
11. **Don't make derogatory comments** about previous bosses or peers. This is never acceptable and particularly works against you in the Interview.
12. **Don't act tired or jaded.** Employers are invariably looking for someone to energize, inspire and uplift the team. Try to act enthusiastic and full of energy and motivation.

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13. **Don't act unfocused and uncertain** about what you want. Whatever interview you're in - you want THAT job.
14. **Don't lie.** Answer briefly, truthfully and concisely.
15. **Don't interrupt.**
16. **Avoid giving 'yes' or 'no' Answers.** Support your answers with examples and be as factual and concise as you can.
17. **Don't talk too much.** Focus your answers on the particular question and on your related strengths. Watch for signals that the Interviewer is losing interest and stop talking immediately.
18. **Don't talk about your personal life.** You have not been hired yet so keep it professional. This is no the time to talk about failed love lives, a husband who asked you to quit your job etc.!
19. **Don't treat questions as jokes** or try to be too funny.
20. **Don't ask about holidays, perks, hours or compensation until you've actually been made a serious offer.**
21. **Don't act overly confident or superior.** Ultimately, unless you are applying to the very senior level positions, the Interviewer is looking for someone who is manageable and will fit into the team.
22. **Don't drop names of influential friends** and acquaintances unless you are passing a message or someone has referred you. Be very careful and professional when you mention names of clients and make sure you are never giving out confidential information.
23. **Don't leave abruptly.** Shake the Interviewer's hand firmly, thank him for his time and ask what the next step will be.

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Common Interview Questions

1. Tell me about yourself.

Keep your *Answer* short and focused on your professional life. This is not the time to bring up relationships, childhood experiences, family etc. A brief history of education, career and special interests is what is called for here. End it with why you are interested in this particular job.

2. Why are you applying for this particular job?

Show interest and demonstrate that you have researched the job and know what you are getting into. Bring up evidence from past work/ studies that supports your interest in this role and any skills you have acquired in preparation for the role. You can say something like 'I would like to work for a leader in innovative network and telecommunications solutions and my college degree in computational mathematics has given me a solid background for this role. Mention the value-added you can bring to the job.

3. What do you know about our company?

Indicate what you have learnt from your research activities - from their annual reports, newspapers, word of mouth, other employees etc. Use this to flatter them and show that you have done your homework.

4. What makes you qualified for this particular job?

Again, explain that you are very interested in the job and demonstrate what it is about your past experiences, education and qualifications that makes you ideal for the job. Show enthusiasm and support your answers with evidence wherever you can (e.g. my summer internship at Citibank gave me broad exposure to the area of equity analysis and I think I can apply many of the tools I learnt there in this job). Elaborate on all the past experiences and skill sets that make you suitable for the job. In cases where your past experience is not directly relevant, you can still find elements of it that can be useful. Play up team skills, computer skills, leadership roles, specific courses and independent research activities that can be useful to the job at hand to show your initiative even where you don't have directly relevant job experience.

5. What can you do for us that someone else can't?

Demonstrate key strengths, skills and personal characteristics.

6. Why should we hire you?

See 3. Because you have all the experience/ traits/ credentials demonstrated in 3 and in addition to being qualified, you are enthusiastic, intelligent, hardworking, flexible and willing to learn. Also mention any key relationships you may have that may assist you in the job.

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7. What do you look for in a job?

Be honest. Also mention keywords such as challenging, steep learning curve, good work culture, demanding, rewarding, opportunities for advancement and growth, team environment, opportunity to build and maintain client relationships etc.

8. Why are you looking to make a career change?

Mention your interests and make sure you bring up all skills/ experience however insignificant that can support your move in this new direction. It is quite common in this day and age to make a career switch. You need however to show that you have very carefully thought about the change, have a strong interest in the new career and can use some of your previous skills/ education/ relationships to make that move.

9. Why did you leave your last job?

Do NOT use this as an opportunity to badmouth past employers or peers or talk about a failure of any sort. Any of these answers are acceptable: you were looking for a new challenge, your learning curve had flattened out in the previous job and you were looking for a new learning opportunity, the company or department were restructuring, you were ready to start something new after achieving your career goals at the previous company etc.

10. Why do you want to work for us (as opposed to the competitor companies)?

Demonstrate that you know something about the company, that you believe they are leaders/ innovators in what they do, or you think their work culture is exactly what you are looking for, or you like their product(s) or you have friends who work there and have always been attracted to the company etc. Flatter the company and show you know something about it.

11. How long will it take you to start making a meaningful contribution?

Show that you are enthusiastic and willing to learn and will put in all the hours and effort necessary to learn the ropes and start making an immediate contribution. Indicate that your past experiences/ skills/ credentials will enable you to make an immediate contribution at some level while you quickly learn all new aspects of the job. An Interviewer wants someone who is willing and able to learn and will make a return on his investment sooner rather than later.

12. What are your strengths?

See 14 below. In addition, keywords such as good teamplayer, work very well under pressure, very creative, very strong quantitative or computer skills, and very strong client relationship skills may be appropriate depending on your chosen field.

13. What are your weaknesses?

Do NOT mention key weaknesses here. This is not the place to say you are bad at meeting deadlines or you never mastered highschool mathematics etc. Turn this question around to your benefit. For example, you are 'overambitious' or 'extremely attentive to detail' or 'like to take on too many projects'. Make it sound positive.

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14. What are your career goals?

Show you have thought forward and are committed to your career.

15. How would you describe yourself?

Any of these are good examples of attributes employers are looking for: intelligent, hardworking, quick to learn, enthusiastic, honest, efficient, productive, ambitious, successful, compassionate (in the medical fields).

16. How would your colleagues describe you?

Do not bring up anything negative here.

17. How would your teachers describe you?

They will check references anyways so bring up the most positive attribute you can think of about yourself e.g. hardworking, honest etc. and leave it to your Boss to say anything to the contrary.

18. Describe a situation in your past where you showed initiative?

You could describe any new methods you came up with to do your job or to save money for the company or to turn around a bad situation. It can be something as simple as changing a filing system, or establishing a relationship with a vendor that saved your department a lot of money. If you are in sales, you may want to talk about how you brought in that big account. Creatives may talk about how they came up with that cutthroat image or design that brought in the business.

19. What were your main responsibilities in your department?

Have these ready and list them all. . This *Answer* should be smooth and practiced.

20. What do you consider your greatest accomplishments?

Many of us have one or two milestones in our career that we are very proud of e.g. that early promotion, that 'huge' deal we brought in, the design we came up with, the costs we saved, the revenues we increased, the people we trained, a new invention or process we came up with etc.

Examples of accomplishments may be: 'Reduced costs by X%; or renamed and repositioned a product at the end of its lifecycle, or organized and led a team to do XYZ, or achieved sales increase of X% etc. If you are a fresh college graduate, talk about extracurricular activities, leadership roles and grades.

21. Describe your management style (if relevant)

No *Answer*

22. Do you work better in teams or independently?

Show that you are a proactive team player and like to bounce ideas off others and get input; however you are very capable of working independently (give examples).

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23. How do you work under pressure?

Well. Give evidence.

24. How did you do in college?

Keep it positive. It's okay to say you were very busy making the most of college and were very involved in sports, activities, social life etc. Employers want human beings not robots. Mention the areas you did very well in even if it was just one or two courses you excelled in. They will check for themselves.

25. What kind of hours would you like to work?

Employers want to see flexibility. Indicate you are willing to put in whatever hours are necessary to finish the job. Do however mention any constraints you have e.g. you would like to be home to pick your kids up from school at 3:30. Most employers are willing to work around your constraints if you show flexibility on your side as well.

26. Do you have any questions for me?

YES you do. Questions engage the Interviewer and show your interest. Ask questions that show you know something about the company or the job, that you are planning ahead, that you are anxious and willing to learn the ropes and that you are committed to the position.

Example:

No, I think you pretty much covered everything. I'm sure I'll have questions later, if I get the job.

Well, I'd like to know more about the benefits of working for the company. What kind of vacation and health benefits do you offer your employees? What are the hours? What do you pay for overtime?

I'd like to know what the company's philosophy is toward its employees. What are this organization's challenges, problems, opportunities? What do you think are the important qualities necessary for this job?

27) You mentioned you work well with a team, can you describe a situation when you had to gain cooperation from a team.

I worked on a team project that was really running behind schedule. The first thing I did was get everyone together to discuss the problem and what was happening and why. We then came up with some new ways of approaching the project and schedule. I set up a system so that each person could track his or her own progress - through data entry and frequent check-ins. It seemed to make a big difference when each person felt like he or she was making a contribution to a bigger project. Within a week the improvement was very noticeable.

I am a real team player. I always work well with a team. Whenever there is cooperation needed I am one of the first to be involved. I have worked on all kinds of teams and some are better than others, but we always get the work done - and on time. I really like being a member of a team.

Whenever I am working on a team, we always work well together. We have a lot of meetings and we work out our problems. We set up guidelines and schedules

and we work well together to get the work out on time. One time we were behind, but we all pitched in and made out a schedule and really worked as a team to pull it together. We all were accountable for our part of the project and it made us feel really good to accomplish more than was asked for. We made all our deadlines and got awarded for our teamwork.

28)What has been the most difficult technical skill for you to learn?

I had a difficult time learning C++ (or the software most difficult for you). I had to keep relearning aspects that were similar to other programs I'd worked on. With some help from some fellow technical people, and a lot of hard work on my part, I was able to get through the program and become fairly proficient.

I work hard to learn as many programs as possible. I want to have a broad range of languages and programs to offer. They have really all been difficult to learn, but I like a challenge.

I haven't really had any problems learning programs. I usually just hack my way through. I mostly learn through trial and error. I think that's the best way to learn anything - kind of hands-on.

82 Popular Interview Questions

1. What do you know about our company?
2. Who are our competitors? What are our products? Who are our customers?
3. Why have you applied for this particular position?
4. What are your salary/wage expectations?
5. Tell me about yourself.
6. What is your attitude towards unions in a workplace?
7. What do you think determines a person's progress within a company?
8. Why should we hire you?
9. What irritates you the most in the workplace/with colleagues?
10. Have you ever been dismissed/ or disciplined? Why?
11. Why do you think you might like to work for our company?
12. Are you looking for a permanent or temporary position with the company?
13. How many days leave/sickness have you had in the last year? Why?
14. Do you prefer any particular geographic location? Why? Are you prepared to relocate?
15. Would you be prepared to travel nationally/abroad? Are you prepared to go where the company sends you?
16. What are your strengths and weaknesses?
17. What would you like to be doing and earning in 5 years time?
18. What are your most redeeming qualities?
19. Our company and staff like working to systems. Training our staff to become experts in these systems has been one of the reasons for our success. We don't leave anything to chance and we even have a system for answering the phone that we will teach you. How do you feel about this?
20. What are your hobbies or interests?

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21. If we phoned your HOD or any higher official what would they tell us about you?
22. If you were given a task to do but didn't know how to go about it, what would you do?
23. If you lack experience, what do you have to offer?
24. How would you manage poor performance?
25. What do you understand about a disciplinary procedure? How is it generally applied?
26. What characteristics do you think an employer looks for in an employee?
27. For what sort of a company would you like to work?
28. What kind of work interests you?
29. Which five words most describe you?
30. Do you work best on your own or in a team?
31. Can you get recommendations from HOD? Can we see them?
32. Which jobs have you enjoyed the most /least? Why?
33. What personal characteristics are necessary for success in your chosen field?
34. What is 15*15?
35. In your opinion, what are the most important factors in running a business?
36. What types of people seem to rub you the wrong way?
37. What types of books do you read?
38. Does your spouse work?
39. Tell me about your home life?
40. Do you drive? If so, what type of car and what colour?
41. Tell me about your IT skills?
42. What are your best friends?
43. To what extent do you drink alcohol? Smoke?
44. Have you ever had any serious illness or injury? How many days absence have you had in the last year?
45. Which of your parents had the most profound influence on you? Why?
46. Explain your choice of subjects at school/ university.
47. Do you have any major financial debts?
48. Your CV indicates that you did poorly in your exams (degree, college exams, and secondary school exams). Why?
49. Can you tell me about your biggest failures and how you dealt with them?
50. Are you prepared to work: at weekends or on statutory holidays? Or rotating shift patterns including nights? Give me examples of when you have had to do this.
51. What is the most significant impact you've made at your organisation in the last year?
52. How do you feel about working overtime?
53. Do you prefer regular hours?
54. What motivates you?
55. Describe self-improvements you'd like to make in the workplace.
56. Aren't you a bit old (or over-qualified) for this position?
57. How have you improved yourself in the last year?
58. How do you cope with your ideas not being implemented, especially when you know they would be worthwhile?
59. Give me some examples demonstrating you can work under pressure.
60. What projects and activities have you or your team undertaken and seen through that were your idea?

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61. Which was your project? What difficulties did you meet? How did you overcome them?
62. How do you take criticism?
63. What supervisory or leadership roles have you held?
64. Have you any unspent convictions?
65. You have 2 minutes. Think of as many uses for a paper clip as you can in that time.
66. What is the 5th letter of the alphabet? How many ping-pong balls fit into a Volkswagen? If you had to choose an actor (or actress) which would you be and why?
67. You have five minutes to tell me why you should have the job.
68. Why are you interested in a position with our company?
69. What steps have you taken to be more successful in your career?
70. Tell me about a time you became angry.
71. What would you do if a member of a group you were a part of wasn't pulling their weight?
72. Give examples of charity work you have done.
73. What degree of autonomy would you like in the job?
74. Give examples of when you had to work as part of a team. Why is teamwork important?
75. Tell me about unpopular decisions you have made in the past.
76. How can you contribute to the success of this company?
77. Give examples of when you had to work with a multi-cultural team.
78. Give me some KPIs (Key Performance Indicators) and trends you would expect to see within a successful business. Name some characteristics of a good business.
79. If you were running this or another business, what changes would you make? Why?
80. If you had to dismiss 30 people, how would you decide whom to let go?
81. How do you feel about working for a line manager who is much younger than you?
82. Which position in our company do you aspire to?

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TECHNICAL QUESTIONS

C-LANGUAGE & C++

C Questions

1. Base class has some virtual method and derived class has a method with the same name. If we initialize the base class pointer with derived object, calling of that virtual method will result in which method being called?

- Base method
- Derived method..

2 **Note :** All the programs are tested under Turbo C/C++ compilers.

It is assumed that,

- Programs run under DOS environment,
- The underlying machine is an x86 system,
- Program is compiled using Turbo C/C++ compiler.

The program output may depend on the information based on this assumptions (for example `sizeof(int) == 2` may be assumed).

Predict the output or error(s) for the following:

```
1. void main()
   {
     int const *p=5;
     printf("%d",++(*p));
   }
```

Answer:

Compiler error: Cannot modify a constant value.

Explanation:

p is a pointer to a "constant integer". But we tried to change the value of the "constant integer".

```
2. main()
   {
     char s[ ]="man";
     int i;
     for(i=0;s[ i ];i++)
     printf("\n%c%c%c%c",s[ i ],*(s+i),*(i+s),i[s]);
   }
```

Answer:

m m m m
a a a a
n n n n

Explanation:

s[i], *(i+s), *(s+i), i[s] are all different ways of expressing the same idea. Generally array name is the base address for that array. Here s is the base

address. *i* is the index number/displacement from the base address. So, indirecting it with * is same as *s[i]*. *i[s]* may be surprising. But in the case of C it is same as *s[i]*.

```
3. main()
{
    float me = 1.1;
    double you = 1.1;
    if(me==you)
        printf("I love U");
    else
        printf("I hate U");
}
```

Answer:

I hate U

Explanation:

For floating point numbers (float, double, long double) the values cannot be predicted exactly. Depending on the number of bytes, the precision of the value represented varies. Float takes 4 bytes and long double takes 10 bytes. So float stores 0.9 with less precision than long double.

Rule of Thumb:

Never compare or at-least be cautious when using floating point numbers with relational operators (==, <, <=, !=).

```
4. main()
{
    static int var = 5;
    printf("%d ",var--);
    if(var)
        main();
}
```

Answer:

5 4 3 2 1

Explanation:

When *static* storage class is given, it is initialized once. The change in the value of a *static* variable is retained even between the function calls. Main is also treated like any other ordinary function, which can be called recursively.

```
5. main()
{
    int c[ ]={2.8,3.4,4,6.7,5};
    int j,*p=c,*q=c;
    for(j=0;j<5;j++){
        printf(" %d ",*c);
        ++q; }
    for(j=0;j<5;j++){
        printf(" %d ",*p);
        ++p; }
}
```

@-INTERVIEW

Answer:

2 2 2 2 2 3 4 6 5

Explanation:

Initially pointer **c** is assigned to both **p** and **q**. In the first loop, since only **q** is incremented and not **c**, the value 2 will be printed 5 times. In second loop **p** itself is incremented. So the values 2 3 4 6 5 will be printed.

```
6. main()
{
    extern int i;
    i=20;
    printf("%d",i);
}
```

Answer:

Linker Error : Undefined symbol '_i'

Explanation:

extern storage class in the following declaration,

extern int i;

specifies to the compiler that the memory for **i** is allocated in some other program and that address will be given to the current program at the time of linking. But linker finds that no other variable of name **i** is available in any other program with memory space allocated for it. Hence a linker error has occurred .

```
7. main()
{
    int i=-1,j=-1,k=0,l=2,m;
    m=i++&& j++&& k++||l++;
    printf("%d %d %d %d %d",i,j,k,l,m);
}
```

Answer:

0 0 1 3 1

Explanation :

Logical operations always give a result of **1 or 0** . And also the logical AND (&&) operator has higher priority over the logical OR (||) operator. So the expression '**i++ && j++ && k++**' is executed first. The result of this expression is 0 (-1 && -1 && 0 = 0). Now the expression is 0 || 2 which evaluates to 1 (because OR operator always gives 1 except for '0 || 0' combination- for which it gives 0). So the value of **m** is 1. The values of other variables are also incremented by 1.

```
8. main()
{
    char *p;
    printf("%d %d ",sizeof(*p),sizeof(p));
}
```

For Placement

Answer:

1 2

Explanation:

The sizeof() operator gives the number of bytes taken by its operand. P is a character pointer, which needs one byte for storing its value (a character). Hence sizeof(*p) gives a value of 1. Since it needs two bytes to store the address of the character pointer sizeof(p) gives 2.

```
9. main()
{
    int i=3;
    switch(i)
    {
        default:printf("zero");
        case 1: printf("one");
                break;
        case 2:printf("two");
                break;
        case 3: printf("three");
                break;
    }
}
```

Answer :

three

Explanation :

The default case can be placed anywhere inside the loop. It is executed only when all other cases doesn't match.

```
10. main()
{
    printf("%x",-1<<4);
}
```

Answer:

fff0

Explanation :

-1 is internally represented as all 1's. When left shifted four times the least significant 4 bits are filled with 0's. The %x format specifier specifies that the integer value be printed as a hexadecimal value.

```
11. main()
{
    char string[]="Hello World";
    display(string);
}
void display(char *string)
{
    printf("%s",string);
}
```

@-INTERVIEW

Answer:

Compiler Error : Type mismatch in redeclaration of function display

Explanation :

In third line, when the function **display** is encountered, the compiler doesn't know anything about the function display. It assumes the arguments and return types to be integers, (which is the default type). When it sees the actual function **display**, the arguments and type contradicts with what it has assumed previously. Hence a compile time error occurs.

```
12. main()
{
    int c=- -2;
    printf("c=%d",c);
}
```

Answer:

c=2;

Explanation:

Here unary minus (or negation) operator is used twice. Same maths rules applies, ie. minus * minus= plus.

Note:

However you cannot give like --2. Because -- operator can only be applied to variables as a **decrement** operator (eg., i--). 2 is a constant and not a variable.

```
13. #define int char
main()
{
    int i=65;
    printf("sizeof(i)=%d",sizeof(i));
}
```

Answer:

sizeof(i)=1

Explanation:

Since the #define replaces the string **int** by the macro **char**

```
14. main()
{
    int i=10;
    i=!i14;
    Printf("i=%d",i);
}
```

Answer:

i=0

Explanation:

For Placement

@-INTERVIEW

In the expression **!14**, NOT (!) operator has more precedence than ‘ ’ symbol. ! is a unary logical operator. !1 (!10) is 0 (not of true is false). 014 is false (zero).

```
15. #include<stdio.h
main()
{
    char s[]={ 'a','b','c','\n','c','\0'};
    char *p,*str,*str1;
    p=&s[3];
    str=p;
    str1=s;
    printf("%d",++*p + ++*str1-32);
}
```

Answer:

77

Explanation:

p is pointing to character '\n'. str1 is pointing to character 'a' ++*p. "p is pointing to '\n' and that is incremented by one." the ASCII value of '\n' is 10, which is then incremented to 11. The value of ++*p is 11. ++*str1, str1 is pointing to 'a' that is incremented by 1 and it becomes 'b'. ASCII value of 'b' is 98.

Now performing (11 + 98 – 32), we get 77("M");

So we get the output 77 :: "M" (Ascii is 77).

```
16. #include<stdio.h
main()
{
    int a[2][2][2] = { {10,2,3,4}, {5,6,7,8} };
    int *p,*q;
    p=&a[2][2][2];
    *q=***a;
    printf("%d----%d",*p,*q);
}
```

Answer:

SomeGarbageValue---1

Explanation:

p=&a[2][2][2] you declare only two 2D arrays, but you are trying to access the third 2D(which you are not declared) it will print garbage values. *q=***a starting address of a is assigned integer pointer. Now q is pointing to starting address of a. If you print *q, it will print first element of 3D array.

```
17. #include<stdio.h
main()
{
    struct xx
    {
        int x=3;
        char name[]="hello";
    };
}
```

For Placement



INTERVIEW

```
struct xx *s;  
printf("%d",s-x);  
printf("%s",s-name);  
}
```

Answer:

Compiler Error

Explanation:

You should not initialize variables in declaration

```
18. #include <stdio.h>  
main()  
{  
    struct xx  
    {  
        int x;  
        struct yy  
        {  
            char s;  
            struct xx *p;  
        };  
        struct yy *q;  
    };  
}
```

Answer:

Compiler Error

Explanation:

The structure yy is nested within structure xx. Hence, the elements are of yy are to be accessed through the instance of structure xx, which needs an instance of yy to be known. If the instance is created after defining the structure the compiler will not know about the instance relative to xx. Hence for nested structure yy you have to declare member.

```
19. main()  
{  
    printf("\nab");  
    printf("\bsi");  
    printf("\rha");  
}
```

Answer:

hai

Explanation:

\n - newline
\b - backspace
\r - linefeed

```
20. main()  
{  
    int i=5;  
    printf("%d%d%d%d%d%d",i++,i--,++i,--i,i);  
}
```

For Placement

Answer:
45545

Explanation:

The arguments in a function call are pushed into the stack from left to right. The evaluation is by popping out from the stack. and the evaluation is from right to left, hence the result.

```
21. #define square(x) x*x
main()
{
    int i;
    i = 64/square(4);
    printf("%d",i);
}
```

Answer:
64

Explanation:

the macro call square(4) will substituted by 4*4 so the expression becomes $i = 64/4*4$. Since / and * has equal priority the expression will be evaluated as $(64/4)*4$ i.e. $16*4 = 64$

```
22. main()
{
    char *p="hai friends",*p1;
    p1=p;
    while(*p!='\0') ++*p++;
    printf("%s %s",p,p1);
}
```

Answer:
ibj!gsjfoet

Explanation:

++*p++ will be parse in the given order

- *p that is value at the location currently pointed by p will be taken
- ++*p the retrieved value will be incremented
- when ; is encountered the location will be incremented that is p++ will be executed

Hence, in the while loop initial value pointed by p is 'h', which is changed to 'i' by executing ++*p and pointer moves to point, 'a' which is similarly changed to 'b' and so on. Similarly blank space is converted to '!'. Thus, we obtain value in p becomes "ibj!gsjfoet" and since p reaches '\0' and p1 points to p thus p1 doesnot print anything.

```
23. #include <stdio.h>
#define a 10
main()
{
    #define a 50
    printf("%d",a);
}
```



INTERVIEW

Answer:
50

Explanation:

The preprocessor directives can be redefined anywhere in the program. So the most recently assigned value will be taken.

```
24. #define clrscr() 100
main()
{
    clrscr();
    printf("%d\n",clrscr());
}
```

Answer:

100

Explanation:

Preprocessor executes as a separate pass before the execution of the compiler. So textual replacement of clrscr() to 100 occurs. The input program to compiler looks like this :

```
main()
{
    100;
    printf("%d\n",100);
}
```

Note:

100; is an executable statement but with no action. So it doesn't give any problem

```
25. main()
{
    printf("%p",main);
}
```

Answer:

Some address will be printed.

Explanation:

Function names are just addresses (just like array names are addresses). main() is also a function. So the address of function main will be printed. %p in printf specifies that the argument is an address. They are printed as hexadecimal numbers.

```
27) main()
{
    clrscr();
}
clrscr();
```

Answer:

No output/error

For Placement



INTERVIEW

Explanation:

The first clrscr() occurs inside a function. So it becomes a function call. In the second clrscr(); is a function declaration (because it is not inside any function).

```
28) enum colors {BLACK,BLUE,GREEN}
    main()
    {

    printf("%d..%d..%d",BLACK,BLUE,GREEN);

    return(1);
    }
```

Answer:

0..1..2

Explanation:

enum assigns numbers starting from 0, if not explicitly defined.

```
29) void main()
    {
    char far *farther,*farthest;

    printf("%d..%d",sizeof(farther),sizeof(farthest));

    }
```

Answer:

4..2

Explanation:

the second pointer is of char type and not a far pointer

```
30) main()
    {
    int i=400,j=300;
    printf("%d..%d");
    }
```

Answer:

400..300

Explanation:

printf takes the values of the first two assignments of the program. Any number of printf's may be given. All of them take only the first two values. If more number of assignments given in the program,then printf will take garbage values.

```
31) main()
    {
    char *p;
    p="Hello";
    printf("%c\n",*p);
    }
```

@-INTERVIEW

Answer:

H

Explanation:

* is a dereference operator & is a reference operator. They can be applied any number of times provided it is meaningful. Here p points to the first character in the string "Hello". *p dereferences it and so its value is H. Again & references it to an address and * dereferences it to the value H.

```
32) main()
    {
    int i=1;
    while (i<=5)
    {
    printf("%d",i);
    if (i%2)
    goto here;
    i++;
    }
    }
fun()
{
    here:
    printf("PP");
}
```

Answer:

Compiler error: Undefined label 'here' in function main

Explanation:

Labels have functions scope, in other words The scope of the labels is limited to functions . The label 'here' is available in function fun() Hence it is not visible in function main.

```
33) main()
    {
    static char names[5][20]={"pascal","ada","cobol","fortran","perl"};
    int i;
    char *t;
    t=names[3];
    names[3]=names[4];
    names[4]=t;
    for (i=0;i<=4;i++)
    printf("%s",names[i]);
    }
}
```

Answer:

Compiler error: Lvalue required in function main

Explanation:

Array names are pointer constants. So it cannot be modified.

For Placement

```
34) void main()
    {
        int i=5;
        printf("%d",i++ + ++i);
    }
```

Answer:

Output Cannot be predicted exactly.

Explanation:

Side effects are involved in the evaluation of i

```
35) void main()
    {
        int i=5;
        printf("%d",i+++++i);
    }
```

Answer:

Compiler Error

Explanation:

The expression i+++++i is parsed as i ++ ++ + i which is an illegal combination of operators.

```
36) #include<stdio.h>
    main()
    {
    int i=1,j=2;
    switch(i)
    {
    case 1: printf("GOOD");
            break;
    case j: printf("BAD");
            break;
    }
    }
```

Answer:

Compiler Error: Constant expression required in function main.

Explanation:

The case statement can have only constant expressions (this implies that we cannot use variable names directly so an error).

Note:

Enumerated types can be used in case statements.

```
37) main()
    {
    int i;
    printf("%d",scanf("%d",&i)); // value 10 is given as input here
    }
```

@-INTERVIEW

Answer:

1

Explanation:

scanf returns number of items successfully read and not 1/0. Here 10 is given as input which should have been scanned successfully. So number of items read is 1.

```
38) #define f(g,g2) g##g2
main()
{
int var12=100;
printf("%d",f(var,12));
}
```

Answer:

100

```
39) main()
{
int i=0;

for(;i++;printf("%d",i)) ;
printf("%d",i);
}
```

Answer:

1

Explanation:

before entering into the for loop the checking condition is "evaluated". Here it evaluates to 0 (false) and comes out of the loop, and i is incremented (note the semicolon after the for loop).

```
40) #include<stdio.h
main()
{
char s[]={ 'a','b','c','\n','c','\0'};
char *p,*str,*str1;
p=&s[3];
str=p;
str1=s;
printf("%d",++*p + ++*str1-32);
}
```

Answer:

M

Explanation:

p is pointing to character '\n'.str1 is pointing to character 'a' ++*p meAnswer:"p is pointing to '\n' and that is incremented by one." the ASCII value of '\n' is 10. then it is incremented to 11. the value of ++*p is 11. ++*str1 meAnswer:"str1 is pointing to 'a' that is incremented by 1 and it becomes 'b'. ASCII value of 'b' is 98. both 11 and 98 is added and result is subtracted from 32. i.e. (11+98-32)=77("M");

For Placement

41)

```
#include<stdio.h>
main()
{
    struct xx
    {
        int x=3;
        char name[]="hello";
    };
    struct xx *s=malloc(sizeof(struct xx));
    printf("%d",s-x);
    printf("%s",s-name);
}
```

Answer:

Compiler Error

Explanation:

Initialization should not be done for structure members inside the structure declaration

42)

```
#include<stdio.h>
main()
{
    struct xx
    {
        int x;
        struct yy
        {
            char s;
            struct xx *p;
        };
        struct yy *q;
    };
}
```

Answer:

Compiler Error

Explanation:

in the end of nested structure yy a member have to be declared.

43)

```
main()
{
    extern int i;
    i=20;
    printf("%d",sizeof(i));
}
```

Answer:

Linker error: undefined symbol '_i'.

e-INTERVIEW

Explanation:

extern declaration specifies that the variable i is defined somewhere else. The compiler passes the external variable to be resolved by the linker. So compiler doesn't find an error. During linking the linker searches for the definition of i. Since it is not found the linker flags an error.

```
44) main()
    {
    printf("%d", out);
    }
    int out=100;
```

Answer:

Compiler error: undefined symbol out in function main.

Explanation:

The rule is that a variable is available for use from the point of declaration. Even though a is a global variable, it is not available for main. Hence an error.

```
45) main()
    {
    extern out;
    printf("%d", out);
    }
    int out=100;
```

Answer:

100

Explanation:

This is the correct way of writing the previous program.

```
46) main()
    {
    show();
    }
    void show()
    {
    printf("I'm the greatest");
    }
```

Answer:

Compiler error: Type mismatch in redeclaration of show.

Explanation:

When the compiler sees the function show it doesn't know anything about it. So the default return type (ie, int) is assumed. But when compiler sees the actual definition of show mismatch occurs since it is declared as void. Hence the error.

The solutions are as follows:

1. declare void show() in main() .
2. define show() before main().
3. declare extern void show() before the use of show().

47)

```
main()
{
    int a[2][3][2] = {{{2,4},{7,8},{3,4}},{2,2},{2,3},{3,4}}};
    printf("%u %u %u %d \n",a,*a,**a,***a);
    printf("%u %u %u %d \n",a+1,*a+1,**a+1,***a+1);
}
```

Answer:

100, 100, 100, 2
114, 104, 102, 3

Explanation:

The given array is a 3-D one. It can also be viewed as a 1-D array.

2	4	7	8	3	4	2	2	2	3	3	4
100	102	104	106	108	110	112	114	116	118	120	122

thus, for the first printf statement a, *a, **a give address of first element . since the indirection ***a gives the value. Hence, the first line of the output.

for the second printf a+1 increases in the third dimension thus points to value at 114, *a+1 increments in second dimension thus points to 104, **a +1 increments the first dimension thus points to 102 and ***a+1 first gets the value at first location and then increments it by 1. Hence, the output.

48)

```
main()
{
    int a[ ] = {10,20,30,40,50},j,*p;
    for(j=0; j<5; j++)
    {
        printf("%d",*a);
        a++;
    }
    p = a;
    for(j=0; j<5; j++)
    {
        printf("%d ",*p);
        p++;
    }
}
```

Answer:

Compiler error: lvalue required.

Explanation:

Error is in line with statement a++. The operand must be an lvalue and may be of any of scalar type for the any operator, array name only when subscripted is an lvalue. Simply array name is a non-modifiable lvalue.

```

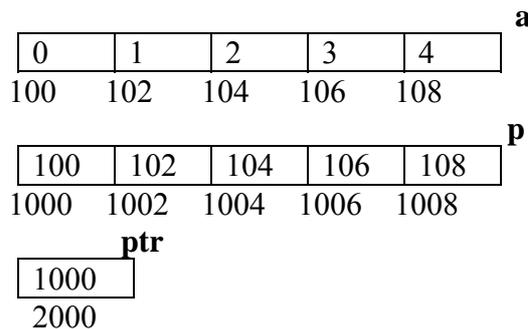
49) main()
{
    static int a[] = {0,1,2,3,4};
    int *p[] = {a,a+1,a+2,a+3,a+4};
    int **ptr = p;
    ptr++;
    printf("\n %d %d %d", ptr-p, *ptr-a, **ptr);
    *ptr++;
    printf("\n %d %d %d", ptr-p, *ptr-a, **ptr);
    *++ptr;
    printf("\n %d %d %d", ptr-p, *ptr-a, **ptr);
    ++*ptr;
    printf("\n %d %d %d", ptr-p, *ptr-a, **ptr);
}
    
```

Answer:

111
222
333
344

Explanation:

Let us consider the array and the two pointers with some address



After execution of the instruction ptr++ value in ptr becomes 1002, if scaling factor for integer is 2 bytes. Now ptr – p is value in ptr – starting location of array p, (1002 – 1000) / (scaling factor) = 1, *ptr – a = value at address pointed by ptr – starting value of array a, 1002 has a value 102 so the value is (102 – 100)/(scaling factor) = 1, **ptr is the value stored in the location pointed by the pointer of ptr = value pointed by value pointed by 1002 = value pointed by 102 = 1. Hence the output of the first printf is 1, 1, 1.

After execution of *ptr++ increments value of the value in ptr by scaling factor, so it becomes 1004. Hence, the outputs for the second printf are ptr – p = 2, *ptr – a = 2, **ptr = 2.

After execution of *++ptr increments value of the value in ptr by scaling factor, so it becomes 1004. Hence, the outputs for the third printf are ptr – p = 3, *ptr – a = 3, **ptr = 3.

After execution of ++*ptr value in ptr remains the same, the value pointed by the value is incremented by the scaling factor. So the value in array p at location 1006 changes from 106 to 108. Hence, the outputs for the fourth printf are ptr – p = 1006 – 1000 = 3, *ptr – a = 108 – 100 = 4, **ptr = 4.

```
50) main()
{
char *q;
int j;
for (j=0; j<3; j++) scanf("%s" ,(q+j));
for (j=0; j<3; j++) printf("%c" ,*(q+j));
for (j=0; j<3; j++) printf("%s" ,(q+j));
}
```

Explanation:

Here we have only one pointer to type char and since we take input in the same pointer thus we keep writing over in the same location, each time shifting the pointer value by 1. Suppose the inputs are MOUSE, TRACK and VIRTUAL. Then for the first input suppose the pointer starts at location 100 then the input one is stored as

M	O	U	S	E	\0
---	---	---	---	---	----

When the second input is given the pointer is incremented as j value becomes 1, so the input is filled in memory starting from 101.

M	T	R	A	C	K	\0
---	---	---	---	---	---	----

The third input starts filling from the location 102

M	T	V	I	R	T	U	A	L	\0
---	---	---	---	---	---	---	---	---	----

This is the final value stored .

The first printf prints the values at the position q, q+1 and q+2 = M T V

The second printf prints three strings starting from locations q, q+1, q+2
i.e MTVIRTUAL, TVIRTUAL and VIRTUAL.

```
51) main()
{
void *vp;
char ch = 'g', *cp = "goofy";
int j = 20;
vp = &ch;
printf("%c", *(char *)vp);
vp = &j;
printf("%d",*(int *)vp);
vp = cp;
printf("%s",(char *)vp + 3);
}
```

Answer:

g20fy

Explanation:

Since a void pointer is used it can be type casted to any other type pointer. vp = &ch stores address of char ch and the next statement prints the value stored in vp after type casting it to the proper data type pointer. the output is 'g'. Similarly the output from second printf is '20'. The third printf statement type casts it to print the string from the 4th value hence the output is 'fy'.

```
52) main ( )
{
static char *s[ ] = {"black", "white", "yellow", "violet"};
char **ptr[ ] = {s+3, s+2, s+1, s}, ***p;
p = ptr;
**++p;
printf("%s",*--*++p + 3);
}
```

Answer:

ck

Explanation:

In this problem we have an array of char pointers pointing to start of 4 strings. Then we have ptr which is a pointer to a pointer of type char and a variable p which is a pointer to a pointer to a pointer of type char. p hold the initial value of ptr, i.e. p = s+3. The next statement increment value in p by 1 , thus now value of p = s+2. In the printf statement the expression is evaluated *++p causes gets value s+1 then the pre decrement is executed and we get s+1 - 1 = s . the indirection operator now gets the value from the array of s and adds 3 to the starting address. The string is printed starting from this position. Thus, the output is 'ck'.

```
53) main()
{
int i, n;
char *x = "girl";
n = strlen(x);
*x = x[n];
for(i=0; i<n; ++i)
{
printf("%s\n",x);
x++;
}
}
```

Answer:

(blank space)
irl
rl
l

Explanation:

Here a string (a pointer to char) is initialized with a value "girl". The strlen function returns the length of the string, thus n has a value 4. The next statement assigns value at the nth location ('\0') to the first location. Now the string becomes "\0irl" . Now the printf statement prints the string after each iteration it increments it starting position. Loop starts from 0 to 4. The first time x[0] = '\0' hence it prints nothing and pointer value is incremented. The second time it prints from x[1] i.e "irl" and the third time it prints "rl" and the last time it prints "l" and the loop terminates.

```
54) int i,j;
    for(i=0;i<=10;i++)
    {
    j+=5;
    assert(i<5);
    }
```

Answer:

Runtime error: Abnormal program termination.
assert failed (i<5), <file name>,<line number

Explanation:

asserts are used during debugging to make sure that certain conditions are satisfied. If assertion fails, the program will terminate reporting the same. After debugging use,
#undef NDEBUG
and this will disable all the assertions from the source code. Assertion is a good debugging tool to make use of.

```
55) main()
    {
    int i=-1;
    +i;
    printf("i = %d, +i = %d \n",i,+i);
    }
```

Answer:

i = -1, +i = -1

Explanation:

Unary + is the only dummy operator in C. Where-ever it comes you can just ignore it just because it has no effect in the expressions (hence the name dummy operator).

56) What are the files which are automatically opened when a C file is executed?

Answer:

stdin, stdout, stderr (standard input,standard output,standard error).

57) what will be the position of the file marker?

a: fseek(ptr,0,SEEK_SET);

b: fseek(ptr,0,SEEK_CUR);

Answer :

a: The SEEK_SET sets the file position marker to the starting of the file.

b: The SEEK_CUR sets the file position marker to the current position of the file.

```
58) main()
    {
    char name[10],s[12];
    scanf("%s%[^\\\"'\"]",s);
```

e-INTERVIEW

How scanf will execute?

Answer:

First it checks for the leading white space and discards it. Then it matches with a quotation mark and then it reads all character upto another quotation mark.

- 59) What is the problem with the following code segment?
while ((fgets(receiving array,50,file_ptr)) != EOF)

Answer & Explanation:

fgets returns a pointer. So the correct end of file check is checking for != NULL.

- 60)

```
main()
{
main();
}
```

Answer:

Runtime error : Stack overflow.

Explanation:

main function calls itself again and again. Each time the function is called its return address is stored in the call stack. Since there is no condition to terminate the function call, the call stack overflows at runtime. So it terminates the program and results in an error.

- 61)

```
main()
{
char *cptr,c;
void *vptr,v;
c=10; v=0;
cptr=&c; vptr=&v;
printf("%c%v",c,v);
}
```

Answer:

Compiler error (at line number 4): size of v is Unknown.

Explanation:

You can create a variable of type void * but not of type void, since void is an empty type. In the second line you are creating variable vptr of type void * and v of type void hence an error.

- 62)

```
main()
{
char *str1="abcd";
char str2[]="abcd";
printf("%d %d %d",sizeof(str1),sizeof(str2),sizeof("abcd"));
}
```

For Placement

@-INTERVIEW

Answer:

2 5 5

Explanation:

In first sizeof, str1 is a character pointer so it gives you the size of the pointer variable. In second sizeof the name str2 indicates the name of the array whose size is 5 (including the '\0' termination character). The third sizeof is similar to the second one.

```
63) main()
    {
    char not;
    not=!2;
    printf("%d",not);
    }
```

Answer:

0

Explanation:

! is a logical operator. In C the value 0 is considered to be the boolean value FALSE, and any non-zero value is considered to be the boolean value TRUE. Here 2 is a non-zero value so TRUE. !TRUE is FALSE (0) so it prints 0.

```
64) #define FALSE -1
    #define TRUE 1
    #define NULL 0
    main() {
    if(NULL)
        puts("NULL");
    else if(FALSE)
        puts("TRUE");
    else
        puts("FALSE");
    }
```

Answer:

TRUE

Explanation:

The input program to the compiler after processing by the preprocessor is,

```
main(){
if(0)
    puts("NULL");
else if(-1)
    puts("TRUE");
else
    puts("FALSE");
}
```

For Placement

Preprocessor doesn't replace the values given inside the double quotes. The check by if condition is boolean value false so it goes to else. In second if -1 is boolean value true hence "TRUE" is printed.

```
65) main()
    {
    int k=1;
    printf("%d==1 is \"%s\",k,k==1?"TRUE":"FALSE");
    }
```

Answer:

1==1 is TRUE

Explanation:

When two strings are placed together (or separated by white-space) they are concatenated (this is called as "stringization" operation). So the string is as if it is given as "%d==1 is %s". The conditional operator(?) evaluates to "TRUE".

```
66) main()
    {
    int y;
    scanf("%d",&y); // input given is 2000
    if( (y%4==0 && y%100 != 0) || y%100 == 0 )
        printf("%d is a leap year");
    else
        printf("%d is not a leap year");
    }
```

Answer:

2000 is a leap year

Explanation:

An ordinary program to check if leap year or not.

```
67) #define max 5
    #define int arr1[max]
    main()
    {
    typedef char arr2[max];
    arr1 list={0,1,2,3,4};
    arr2 name="name";
    printf("%d %s",list[0],name);
    }
```

Answer:

Compiler error (in the line arr1 list = {0,1,2,3,4})

Explanation:

arr2 is declared of type array of size 5 of characters. So it can be used to declare the variable name of the type arr2. But it is not the case of arr1. Hence an error.

@-INTERVIEW

Rule of Thumb:

#defines are used for textual replacement whereas typedefs are used for declaring new types.

68)

```
int i=10;
main()
{
extern int i;
{
int i=20;
{
const volatile unsigned i=30;
printf("%d",i);
}
printf("%d",i);
}
printf("%d",i);
}
```

Answer:

30,20,10

Explanation:

{' introduces new block and thus new scope. In the innermost block i is declared as, const volatile unsigned which is a valid declaration. i is assumed of type int. So printf prints 30. In the next block, i has value 20 and so printf prints 20. In the outermost block, i is declared as extern, so no storage space is allocated for it. After compilation is over the linker resolves it to global variable i (since it is the only variable visible there). So it prints i's value as 10.

69)

```
main()
{
int *j;
{
int i=10;
j=&i;
}
printf("%d",*j);
}
```

Answer:

10

Explanation:

The variable i is a block level variable and the visibility is inside that block only. But the lifetime of i is lifetime of the function so it lives upto the exit of main function. Since the i is still allocated space, *j prints the value stored in i since j points i.

For Placement

```
70) main()
    {
    int i=-1;
    -i;
    printf("i = %d, -i = %d \n",i,-i);
    }
```

Answer:

i = -1, -i = 1

Explanation:

-i is executed and this execution doesn't affect the value of i. In printf first you just print the value of i. After that the value of the expression -i = -(-1) is printed.

```
71) #include<stdio.h>
    main()
    {
    const int i=4;
    float j;
    j = ++i;
    printf("%d %f", i,++j);
    }
```

Answer:

Compiler error

Explanation:

i is a constant. you cannot change the value of constant

```
72) #include<stdio.h>
    main()
    {
    int a[2][2][2] = { {10,2,3,4}, {5,6,7,8} };
    int *p,*q;
    p=&a[2][2][2];
    *q=***a;
    printf("%d..%d",*p,*q);
    }
```

Answer:

garbagevalue..1

Explanation:

p=&a[2][2][2] you declare only two 2D arrays. but you are trying to access the third 2D(which you are not declared) it will print garbage values. *q=***a starting address of a is assigned integer pointer. now q is pointing to starting address of a.if you print *q me**Answer:**it will print first element of 3D array.

```
73) #include<stdio.h>
    main()
    {
    register i=5;
    char j[]="hello";
    printf("%s %d",j,i);}
```

e-INTERVIEW

Answer:
hello 5

Explanation:

if you declare i as register compiler will treat it as ordinary integer and it will take integer value. i value may be stored either in register or in memory.

```
74) main()
    {
      int i=5,j=6,z;
      printf("%d",i+++j);
    }
```

Answer:

11

Explanation:

the expression i+++j is treated as (i++ + j)

```
76) struct aaa{
      struct aaa *prev;
      int i;
      struct aaa *next;
    };

main()
{
  struct aaa abc,def,ghi,jkl;
  int x=100;
  abc.i=0;abc.prev=&jkl;
  abc.next=&def;
  def.i=1;def.prev=&abc;def.next=&ghi;
  ghi.i=2;ghi.prev=&def;
  ghi.next=&jkl;
  jkl.i=3;jkl.prev=&ghi;jkl.next=&abc;
  x=abc.next-next-prev-next-i;
  printf("%d",x);
}
```

Answer:

2

Explanation:

above all statements form a double circular linked list;

abc.next-next-prev-next-i

this one points to "ghi" node the value of at particular node is 2.

```
77) struct point
    {
      int x;
      int y;
    };
    struct point origin,*pp;
    main()
```

For Placement

```

{
pp=&origin;
printf("origin is(%d%d)\n",(*pp).x,(*pp).y);
printf("origin is (%d%d)\n",pp-x,pp-y);
}

```

Answer:

```

origin is(0,0)
origin is(0,0)

```

Explanation:

pp is a pointer to structure. we can access the elements of the structure either with arrow mark or with indirection operator.

Note:

Since structure point is globally declared x & y are initialized as zeroes

78)

```

main()
{
int i=_1_abc(10);
printf("%d\n",--i);
}
int _1_abc(int i)
{
return(i++);
}

```

Answer:

```

9

```

Explanation:

return(i++) it will first return i and then increments. i.e. 10 will be returned.

79)

```

main()
{
char *p;
int *q;
long *r;
p=q=r=0;
p++;
q++;
r++;
printf("%p...%p...%p",p,q,r);
}

```

Answer:

```

0001...0002...0004

```

Explanation:

++ operator when applied to pointers increments address according to their corresponding data-types.

For Placement

80)

```
main()
{
char c=' ',x,convert(z);
getc(c);
if((c='a') && (c<='z'))
x=convert(c);
printf("%c",x);
}
convert(z)
{
return z-32;
}
```

Answer:

Compiler error

Explanation:

declaration of convert and format of getc() are wrong.

81)

```
main(int argc, char **argv)
{
printf("enter the character");
getchar();
sum(argv[1],argv[2]);
}
sum(num1,num2)
int num1,num2;
{
return num1+num2;
}
```

Answer:

Compiler error.

Explanation:

argv[1] & argv[2] are strings. They are passed to the function sum without converting it to integer values.

82)

```
# include <stdio.h>
int one_d[]={1,2,3};
main()
{
int *ptr;
ptr=one_d;
ptr+=3;
printf("%d",*ptr);}
}
```

Answer:

garbage value

Explanation:

ptr pointer is pointing to out of the array range of one_d.

```
83) #include<stdio.h
    aaa() {
        printf("hi");
    }
    bbb(){
        printf("hello");
    }
    ccc(){
        printf("bye");
    }
    main()
    {
        int (*ptr[3])();
        ptr[0]=aaa;
        ptr[1]=bbb;
        ptr[2]=ccc;
        ptr[2]();
    }
```

Answer:

bye

Explanation:

ptr is array of pointers to functions of return type int.ptr[0] is assigned to address of the function aaa. Similarly ptr[1] and ptr[2] for bbb and ccc respectively. ptr[2]() is in effect of writing ccc(), since ptr[2] points to ccc.

```
85) #include<stdio.h
    main()
    {
        FILE *ptr;
        char i;
        ptr=fopen("zzz.c","r");
        while((i=fgetc(ptr))!=EOF)
            printf("%c",i);
    }
```

Answer:

contents of zzz.c followed by an infinite loop

Explanation:

The condition is checked against EOF, it should be checked against NULL.

```
86) main()
    {
        int i =0;j=0;
        if(i && j++)
            printf("%d..%d",i++,j);
        printf("%d..%d,i,j);}
```

Answer:

0..0

Explanation:

The value of i is 0. Since this information is enough to determine the truth value of the boolean expression. So the statement following the if statement is not executed. The values of i and j remain unchanged and get printed.

```
87) main()
    {
    int i;
    i = abc();
    printf("%d",i);
    }
abc()
{
    _AX = 1000;
}
```

Answer:

1000

Explanation:

Normally the return value from the function is through the information from the accumulator. Here _AH is the pseudo global variable denoting the accumulator. Hence, the value of the accumulator is set 1000 so the function returns value 1000.

```
88) int i;
main(){
int t;
for ( t=4;scanf("%d",&i)-t;printf("%d\n",i))
    printf("%d--",t--);
}
```

// If the inputs are 0,1,2,3 find the o/p

Answer:

4--0

3--1

2--2

Explanation:

Let us assume some $x = \text{scanf}("%d", \&i) - t$ the values during execution will be,

t	i	x
4	0	-4
3	1	-2
2	2	0

89)

```
main(){
    int a= 0;int b = 20;char x =1;char y =10;
    if(a,b,x,y)
        printf("hello");
}
```

Answer:

hello

Explanation:

The comma operator has associativity from left to right. Only the rightmost value is returned and the other values are evaluated and ignored. Thus the value of last variable y is returned to check in if. Since it is a non zero value if becomes true so, "hello" will be printed.

90)

```
main(){
    unsigned int i;
    for(i=1;i-2;i--)
        printf("c aptitude");
}
```

Explanation:

i is an unsigned integer. It is compared with a signed value. Since the both types doesn't match, signed is promoted to unsigned value. The unsigned equivalent of -2 is a huge value so condition becomes false and control comes out of the loop.

91) In the following pgm add a stmt in the function fun such that the address of 'a' gets stored in 'j'.

```
main(){
    int *j;
    void fun(int **);
    fun(&j);
}
void fun(int **k) {
    int a =0;
    /* add a stmt here*/
}
```

Answer:

*k = &a

Explanation:

The argument of the function is a pointer to a pointer.

92) What are the following notations of defining functions known as?

- i.

```
int abc(int a,float b{
    /* some code */}
```
- ii.

```
int abc(a,b)
int a; float b;{ /* some code*/}
```

Answer:

- i. ANSI C notation
- ii. Kernighan & Ritchie notation

93)

```
main()
{
char *p;
p="%d\n";
p++;
p++;
printf(p-2,300);
}
```

Answer:

300

Explanation:

The pointer points to % since it is incremented twice and again decremented by 2, it points to '%d\n' and 300 is printed.

94)

```
main(){
char a[100];
a[0]='a';a[1]='b';a[2]='c';a[4]='d';
abc(a);
}
abc(char a[]){
a++;
printf("%c",*a);
a++;
printf("%c",*a);
}
```

Explanation:

The base address is modified only in function and as a result a points to 'b' then after incrementing to 'c' so bc will be printed.

95)

```
func(a,b)
int a,b;
{
return( a= (a==b) );
}
main()
{
int process(),func();
printf("The value of process is %d !\n ",process(func,3,6));
}
process(pf,val1,val2)
int (*pf) ();
int val1,val2;
{
return((*pf) (val1,val2));
}
```

@-INTERVIEW

Answer:

The value if process is 0 !

Explanation:

The function 'process' has 3 parameters - 1, a pointer to another function 2 and 3, integers. When this function is invoked from main, the following substitutions for formal parameters take place: func for pf, 3 for val1 and 6 for val2. This function returns the result of the operation performed by the function 'func'. The function func has two integer parameters. The formal parameters are substituted as 3 for a and 6 for b. since 3 is not equal to 6, a==b returns 0. therefore the function returns 0 which in turn is returned by the function 'process'.

96)

```
void main()
{
    static int i=5;
    if(--i){
        main();
        printf("%d ",i);
    }
}
```

Answer:

0 0 0 0

Explanation:

The variable "I" is declared as static, hence memory for I will be allocated for only once, as it encounters the statement. The function main() will be called recursively unless I becomes equal to 0, and since main() is recursively called, so the value of static I ie., 0 will be printed every time the control is returned.

97)

```
void main()
{
    int k=ret(sizeof(float));
    printf("\n here value is %d",++k);
}
int ret(int ret)
{
    ret += 2.5;
    return(ret);
}
```

Answer:

Here value is 7

Explanation:

The int ret(int ret), ie., the function name and the argument name can be the same.

For Placement

e-INTERVIEW

Firstly, the function `ret()` is called in which the `sizeof(float)` i.e., 4 is passed, after the first expression the value in `ret` will be 6, as `ret` is integer hence the value stored in `ret` will have implicit type conversion from float to int. The `ret` is returned in `main()` it is printed after and preincrement.

```
98) void main()
    {
        char a[]="12345\0";
        int i=strlen(a);
        printf("here in 3 %d\n",++i);
    }
```

Answer:

here in 3 6

Explanation:

The char array 'a' will hold the initialized string, whose length will be counted from 0 till the null character. Hence the 'i' will hold the value equal to 5, after the pre-increment in the printf statement, the 6 will be printed.

```
99) void main()
    {
        unsigned giveit=-1;
        int gotit;
        printf("%u ",++giveit);
        printf("%u \n",gotit--giveit);
    }
```

Answer:

0 65535

```
100) void main()
    {
        int i;
        char a[]="\0";
        if(printf("%s\n",a))
            printf("Ok here \n");
        else
            printf("Forget it\n");
    }
```

Answer:

Ok here

Explanation:

Printf will return how many characters does it print. Hence printing a null character returns 1 which makes the if statement true, thus "Ok here" is printed.

```
101) void main()
     {
         void *v;
         int integer=2;
         int *i=&integer;
         v=i;
         printf("%d", (int*)*v);
     }
```

Answer:

Compiler Error. We cannot apply indirection on type void*.

Explanation:

Void pointer is a generic pointer type. No pointer arithmetic can be done on it. Void pointers are normally used for,

1. Passing generic pointers to functions and returning such pointers.
2. As a intermediate pointer type.
3. Used when the exact pointer type will be known at a later point of time.

```
102) void main()
     {
         int i=i++,j=j++,k=k++;
         printf("%d%d%d",i,j,k);
     }
```

Answer:

Garbage values.

Explanation:

An identifier is available to use in program code from the point of its declaration.

So expressions such as `i = i++` are valid statements. The `i`, `j` and `k` are automatic variables and so they contain some garbage value. *Garbage in is garbage out (GIGO).*

```
103) void main()
     {
         static int i=i++, j=j++, k=k++;
         printf("i = %d j = %d k = %d", i, j, k);
     }
```

Answer:

`i = 1 j = 1 k = 1`

Explanation:

Since static variables are initialized to zero by default.

```
104) void main()
      {
          while(1){
              if(printf("%d",printf("%d")))
                  break;
              else
                  continue;
          }
      }
```

Answer:

Garbage values

Explanation:

The inner printf executes first to print some garbage value. The printf returns no of characters printed and this value also cannot be predicted. Still the outer printf prints something and so returns a non-zero value. So it encounters the break statement and comes out of the while statement.

```
104) main()
      {
          unsigned int i=10;
          while(i--=0)
              printf("%u ",i);
      }
```

Answer:

10 9 8 7 6 5 4 3 2 1 0 65535 65534.....

Explanation:

Since i is an unsigned integer it can never become negative. So the expression `i-- =0` will always be true, leading to an infinite loop.

```
105) #include<conio.h>
      main()
      {
          int x,y=2,z,a;
          if(x=y%2) z=2;
          a=2;
          printf("%d %d ",z,x);
      }
```

Answer:

Garbage-value 0

Explanation:

The value of `y%2` is 0. This value is assigned to x. The condition reduces to `if(x)` or in other words `if(0)` and so z goes uninitialized.

Thumb Rule: Check all control paths to write bug free code.

```
106) main()
{
    int a[10];
    printf("%d",*a+1-*a+3);
}
```

Answer:

4

Explanation:

*a and -*a cancels out. The result is as simple as $1 + 3 = 4$!

```
107) #define prod(a,b) a*b
main()
{
    int x=3,y=4;
    printf("%d",prod(x+2,y-1));
}
```

Answer:

10

Explanation:

The macro expands and evaluates to as:
 $x+2*y-1 = x+(2*y)-1 = 10$

```
108) main()
{
    unsigned int i=65000;
    while(i++!=0);
    printf("%d",i);
}
```

Answer:

1

Explanation:

Note the semicolon after the while statement. When the value of i becomes 0 it comes out of while loop. Due to post-increment on i the value of i while printing is 1.

```
109) main()
{
    int i=0;
    while(++i--!=0)
        i-=i++;
    printf("%d",i);
}
```

Answer:

-1

Explanation:

Unary + is the only dummy operator in C. So it has no effect on the expression and now the while loop is, $\text{while}(i--!=0)$ which is false and so breaks out of while loop. The value -1 is printed due to the post-decrement operator.

```
113) main()
{
    float f=5,g=10;
    enum {i=10,j=20,k=50};
    printf("%d\n",++k);
    printf("%f\n",f<<2);
    printf("%lf\n",f%g);
    printf("%lf\n",fmod(f,g));
}
```

Answer:

Line no 5: Error: Lvalue required
Line no 6: Cannot apply leftshift to float
Line no 7: Cannot apply mod to float

Explanation:

Enumeration constants cannot be modified, so you cannot apply ++.
Bit-wise operators and % operators cannot be applied on float values.
fmod() is to find the modulus values for floats as % operator is for ints.

```
110) main()
{
    int i=10;
    void pascal f(int,int,int);
    f(i++,i++,i++);
    printf(" %d",i);
}
void pascal f(integer :i,integer:j,integer :k)
{
    write(i,j,k);
}
```

Answer:

Compiler error: unknown type integer
Compiler error: undeclared function write

Explanation:

Pascal keyword doesn't mean that pascal code can be used. It means that the function follows Pascal argument passing mechanism in calling the functions.

```
111) void pascal f(int i,int j,int k)
{
    printf("%d %d %d",i, j, k);
}
void cdecl f(int i,int j,int k)
{
    printf("%d %d %d",i, j, k);
}
main()
```



INTERVIEW

```
{
    int i=10;
    f(i++,i++,i++);
    printf(" %d\n",i);
    i=10;
    f(i++,i++,i++);
    printf(" %d",i);
}
```

Answer:

10 11 12 13
12 11 10 13

Explanation:

Pascal argument passing mechanism forces the arguments to be called from left to right. cdecl is the normal C argument passing mechanism where the arguments are passed from right to left.

112). What is the output of the program given below

```
main()
{
    signed char i=0;
    for(;i=0;i++) ;
    printf("%d\n",i);
}
```

Answer

-128

Explanation

Notice the semicolon at the end of the for loop. The initial value of the i is set to 0. The inner loop executes to increment the value from 0 to 127 (the positive range of char) and then it rotates to the negative value of -128. The condition in the for loop fails and so comes out of the for loop. It prints the current value of i that is -128.

113)

```
main()
{
    unsigned char i=0;
    for(;i=0;i++) ;
    printf("%d\n",i);
}
```

Answer

infinite loop

Explanation

The difference between the previous question and this one is that the char is declared to be unsigned. So the i++ can never yield negative value and i=0 never becomes false so that it can come out of the for loop.

114)

```
main()
{
    char i=0;
    for(;i=0;i++) ;
    printf("%d\n",i); }
```

@-INTERVIEW

Answer:

Behavior is implementation dependent.

Explanation:

The detail if the char is signed/unsigned by default is implementation dependent. If the implementation treats the char to be signed by default the program will print -128 and terminate. On the other hand if it considers char to be unsigned by default, it goes to infinite loop.

Rule:

You can write programs that have implementation dependent behavior. But don't write programs that depend on such behavior.

115) Is the following statement a declaration/definition. Find what does it mean?

```
int (*x)[10];
```

Answer

Definition.

x is a pointer to array of (size 10) integers.

Apply clock-wise rule to find the meaning of this definition.

116). What is the output for the program given below

```
typedef enum errorType {warning, error, exception,} error;
main()
{
error g1;
g1=1;
printf("%d",g1); }
```

Answer

Compiler error: Multiple declaration for error

Explanation

The name error is used in the two meanings. One means that it is an enumerator constant with value 1. The another use is that it is a type name (due to typedef) for enum errorType. Given a situation the compiler cannot distinguish the meaning of error to know in what sense the error is used:

```
error g1;
g1=error;
// which error it refers in each case?
```

When the compiler can distinguish between usages then it will not issue error (in pure technical terms, names can only be overloaded in different namespaces).

Note: the extra comma in the declaration,

```
enum errorType {warning, error, exception,}
```

is not an error. An extra comma is valid and is provided just for programmer's convenience.

```
117) typedef struct error {int warning, error, exception;} error;
      main()
      {
        error g1;
        g1.error =1;
        printf("%d",g1.error);
      }
```

Answer

1

Explanation

The three usages of name errors can be distinguishable by the compiler at any instance, so valid (they are in different namespaces).

Typedef struct error {int warning, error, exception;} error;

This error can be used only by preceding the error by struct keyword as in:

```
struct error someError;
typedef struct error {int warning, error, exception;} error;
```

This can be used only after . (dot) or - (arrow) operator preceded by the variable name as in :

```
g1.error =1;
printf("%d",g1.error);
typedef struct error {int warning, error, exception;} error;
```

This can be used to define variables without using the preceding struct keyword as in:

```
error g1;
```

Since the compiler can perfectly distinguish between these three usages, it is perfectly legal and valid.

Note

This code is given here to just explain the concept behind. In real programming don't use such overloading of names. It reduces the readability of the code. Possible doesn't mean that we should use it!

```
118) #ifndef something
      int some=0;
      #endif

      main()
      {
        int thing = 0;
        printf("%d %d\n", some ,thing);
      }
```

Answer:

Compiler error : undefined symbol some

Explanation:

This is a very simple example for conditional compilation. The name something is not already known to the compiler making the declaration `int some = 0;`

effectively removed from the source code.

```
119) #if something == 0
      int some=0;
      #endif

      main()
      {
          int thing = 0;
          printf("%d %d\n", some ,thing);
      }
```

Answer

0 0

Explanation

This code is to show that preprocessor expressions are not the same as the ordinary expressions. If a name is not known the preprocessor treats it to be equal to zero.

120). What is the output for the following program

```
main()
{
    int arr2D[3][3];
    printf("%d\n", ((arr2D==* arr2D)&&>(* arr2D == arr2D[0])) );
}
```

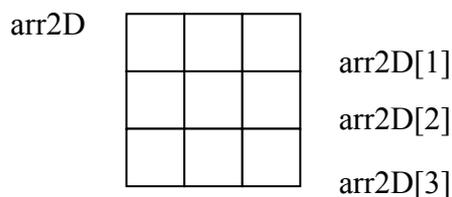
Answer

1

Explanation

This is due to the close relation between the arrays and pointers. N dimensional arrays are made up of (N-1) dimensional arrays.

arr2D is made up of a 3 single arrays that contains 3 integers each .



The name arr2D refers to the beginning of all the 3 arrays. *arr2D refers to the start of the first 1D array (of 3 integers) that is the same address as arr2D. So the expression `(arr2D == *arr2D)` is true (1).

Similarly, `*arr2D` is nothing but `*(arr2D + 0)`, adding a zero doesn't change the value/meaning. Again `arr2D[0]` is the another way of telling `*(arr2D + 0)`. So the expression `*(arr2D + 0) == arr2D[0]` is true (1). Since both parts of the expression evaluates to true the result is true(1) and the same is printed.

```
121) void main()
    {
    if(~0 == (unsigned int)-1)
    printf("You can Answer this if you know how values are represented
    in memory");
    }
```

Answer

You can *Answer* this if you know how values are represented in memory

Explanation

`~` (tilde operator or bit-wise negation operator) operates on 0 to produce all ones to fill the space for an integer. `-1` is represented in unsigned value as all 1's and so both are equal.

```
122) int swap(int *a,int *b)
    {
    *a=*a+*b,*b=*a-*b,*a=*a-*b;
    }
    main()
    {
    int x=10,y=20;
    swap(&x,&y);
    printf("x= %d y = %d\n",x,y);}
}
```

Answer

x = 20 y = 10

Explanation

This is one way of swapping two values. Simple checking will help understand this.

```
123) main()
    {
    char *p = "ayqm";
    printf("%c",++*(p++));
    }
```

Answer:

b

```
124) main()
    {
    int i=5;
    printf("%d",++i++);
    }
```

Answer:

Compiler error: Lvalue required in function main

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Explanation:

++i yields an rvalue. For postfix ++ to operate an lvalue is required.

```
125) main()
    {
        char *p = "ayqm";
        char c;
        c = ++*p++;
        printf("%c",c);
    }
```

Answer:

b

Explanation:

There is no difference between the expression ++*(p++) and ++*p++. Parenthesis just works as a visual clue for the reader to see which expression is first evaluated.

```
126) int aaa() {printf("Hi");}
    int bbb() {printf("hello");}
    iny ccc() {printf("bye");}
    main()
    {
        int ( * ptr[3]) ();
        ptr[0] = aaa;
        ptr[1] = bbb;
        ptr[2] =ccc;
        ptr[2]();
    }
```

Answer:

bye

Explanation:

int (* ptr[3])() says that ptr is an array of pointers to functions that takes no arguments and returns the type int. By the assignment ptr[0] = aaa; it means that the first function pointer in the array is initialized with the address of the function aaa. Similarly, the other two array elements also get initialized with the addresses of the functions bbb and ccc. Since ptr[2] contains the address of the function ccc, the call to the function ptr[2]() is same as calling ccc(). So it results in printing "bye".

```
127) main()
    {
        int i=5;
        printf("%d",i==++i ==6);
    }
```

Answer:

1

For Placement

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Explanation:

The expression can be treated as $i = (++i == 6)$, because $==$ is of higher precedence than $=$ operator. In the inner expression, $++i$ is equal to 6 yielding $true(1)$. Hence the result.

```
128) main()
    {
        char p[ ]="d\n";
        p[1] = 'c';
        printf(p,65);
    }
```

Answer:

A

Explanation:

Due to the assignment $p[1] = 'c'$ the string becomes, `"%c\n"`. Since this string becomes the format string for `printf` and ASCII value of 65 is 'A', the same gets printed.

```
129) void ( * abc( int, void ( *def) () ) ) ();
```

Answer::

`abc` is a ptr to a function which takes 2 parameters .(a). an integer variable.(b). a ptr to a function which returns void. the return type of the function is void.

Explanation:

Apply the clock-wise rule to find the result.

```
130) main()
    {
        while (strcmp("some", "some\0"))
            printf("Strings are not equal\n");
    }
```

Answer:

No output

Explanation:

Ending the string constant with `\0` explicitly makes no difference. So `"some"` and `"some\0"` are equivalent. So, `strcmp` returns 0 (false) hence breaking out of the while loop.

```
131) main()
    {
        char str1[] = {'s','o','m','e'};
        char str2[] = {'s','o','m','e','\0'};
        while (strcmp(str1, str2))
            printf("Strings are not equal\n");
    }
```

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Answer:

“Strings are not equal”
“Strings are not equal”

....

Explanation:

If a string constant is initialized explicitly with characters, ‘\0’ is not appended automatically to the string. Since str1 doesn’t have null termination, it treats whatever the values that are in the following positions as part of the string until it randomly reaches a ‘\0’. So str1 and str2 are not the same, hence the result.

```
132) main()
{
    int i = 3;
    for (;i++=0;) printf(“%d”,i);
}
```

Answer:

Compiler Error: Lvalue required.

Explanation:

As we know that increment operators return rvalues and hence it cannot appear on the left hand side of an assignment operation.

```
133) void main()
{
    int *mptr, *cptr;
    mptr = (int*)malloc(sizeof(int));
    printf(“%d”, *mptr);
    int *cptr = (int*)calloc(sizeof(int),1);
    printf(“%d”, *cptr);}
}
```

Answer:

garbage-value 0

Explanation:

The memory space allocated by malloc is uninitialized, whereas calloc returns the allocated memory space initialized to zeros.

```
134) void main()
{
    static int i;
    while(i<=10)
    (i2)?i++:i--;
    printf(“%d”, i);
}
```

Answer:

32767

Explanation:

Since i is static it is initialized to 0. Inside the while loop the conditional operator evaluates to false, executing i--. This continues till the integer value rotates to positive value (32767). The while condition becomes false and hence, comes out of the while loop, printing the i value.

```
135) main()
{
    int i=10,j=20;
    j = i, j?(i,j)?i:j;j;
    printf("%d %d",i,j);
}
```

Answer:

10 10

Explanation:

The Ternary operator (? :) is equivalent for if-then-else statement. So the question can be written as:

```
if(i,j)
{
    if(i,j)
        j = i;
    else
        j = j;
}
else
    j = j;
```

- 136) 1. const char *a;
2. char* const a;
3. char const *a;
-Differentiate the above declarations.

Answer:

1. 'const' applies to char * rather than 'a' (pointer to a constant char)

*a='F' : illegal
a="Hi" : legal

2. 'const' applies to 'a' rather than to the value of a (constant pointer to char)

*a='F' : legal
a="Hi" : illegal

3. Same as 1.

```
137) main()
{
    int i=5,j=10;
    i=i&=j&&10;
    printf("%d %d",i,j);
}
```

Answer:

1 10

Explanation:

The expression can be written as `i=(i&=(j&&10))`; The inner expression `(j&&10)` evaluates to 1 because `j==10`. `i` is 5. `i = 5&1` is 1. Hence the result.

```
138) main()
    {
        int i=4,j=7;
        j = j || i++ && printf("YOU CAN");
        printf("%d %d", i, j);
    }
```

Answer:

4 1

Explanation:

The boolean expression needs to be evaluated only till the truth value of the expression is not known. `j` is not equal to zero itself means that the expression's truth value is 1. Because it is followed by `||` and *true* // (anything) = true where (anything) will not be evaluated. So the remaining expression is not evaluated and so the value of `i` remains the same.

Similarly when `&&` operator is involved in an expression, when any of the operands become false, the whole expression's truth value becomes false and hence the remaining expression will not be evaluated.

false && (anything) = false where (anything) will not be evaluated.

```
139) main()
    {
        register int a=2;
        printf("Address of a = %d",&a);
        printf("Value of a = %d",a);
    }
```

Answer:

Compiler Error: '&' on register variable

Rule to Remember:

& (address of) operator cannot be applied on register variables.

```
140) main()
    {
        float i=1.5;
        switch(i)
        {
            case 1: printf("1");
            case 2: printf("2");
            default : printf("0");
        }
    }
```

Answer:

Compiler Error: switch expression not integral

Explanation:

Switch statements can be applied only to integral types.

```
141) main()
{
    extern i;
    printf("%d\n",i);
    {
        int i=20;
        printf("%d\n",i);
    }
}
```

Answer:

Linker Error : Unresolved external symbol i

Explanation:

The identifier i is available in the inner block and so using extern has no use in resolving it.

```
142) main()
{
    int a=2, *f1, *f2;
    f1=f2=&a;
    *f2+=*f2+=a+=2.5;
    printf("\n%d %d %d",a,*f1,*f2);
}
```

Answer:

16 16 16

Explanation:

f1 and f2 both refer to the same memory location a. So changes through f1 and f2 ultimately affects only the value of a.

```
143) main()
{
    char *p="GOOD";
    char a[ ]="GOOD";
    printf("\n sizeof(p) = %d, sizeof(*p) = %d, strlen(p) = %d", sizeof(p),
    sizeof(*p), strlen(p));
    printf("\n sizeof(a) = %d, strlen(a) = %d", sizeof(a), strlen(a));
}
```

Answer:

sizeof(p) = 2, sizeof(*p) = 1, strlen(p) = 4

sizeof(a) = 5, strlen(a) = 4

Explanation:

sizeof(p) = sizeof(char*) = 2

sizeof(*p) = sizeof(char) = 1

Similarly,

sizeof(a) = size of the character array = 5

When `sizeof` operator is applied to an array it returns the `sizeof` of the array and it is not the same as the `sizeof` of the pointer variable. Here the `sizeof(a)` where `a` is the character array and the size of the array is 5 because the space necessary for the terminating NULL character should also be taken into account.

```
144) #define DIM( array, type) sizeof(array)/sizeof(type)
      main()
      {
          int arr[10];
          printf("The dimension of the array is %d", DIM(arr, int));
      }
```

Answer:

10

Explanation:

The size of integer array of 10 elements is $10 * \text{sizeof}(\text{int})$. The macro expands to $\text{sizeof}(\text{arr})/\text{sizeof}(\text{int}) = 10 * \text{sizeof}(\text{int}) / \text{sizeof}(\text{int}) = 10$.

```
145) int DIM(int array[])
      {
          return sizeof(array)/sizeof(int );
      }
      main()
      {
          int arr[10];
          printf("The dimension of the array is %d", DIM(arr));
      }
```

Answer:

1

Explanation:

Arrays cannot be passed to functions as arguments and only the pointers can be passed. So the argument is equivalent to `int * array` (this is one of the very few places where `[]` and `*` usage are equivalent). The return statement becomes, $\text{sizeof}(\text{int } *) / \text{sizeof}(\text{int})$ that happens to be equal in this case.

```
146) main()
      {
          static int a[3][3]={1,2,3,4,5,6,7,8,9};
          int i,j;
          static *p[]={a,a+1,a+2};
          for(i=0;i<3;i++)
          {
              for(j=0;j<3;j++)
              printf("%d\t%d\t%d\t%d\n",*(p+i+j),
                  *(j+p+i),*(i+p+j),*(p+j+i));
          }
      }
```

Answer:

1	1	1	1
2	4	2	4
3	7	3	7
4	2	4	2
5	5	5	5
6	8	6	8
7	3	7	3
8	6	8	6
9	9	9	9

Explanation:

$*(*(p+i)+j)$ is equivalent to $p[i][j]$.

```
147) main()
{
    void swap();
    int x=10,y=8;
    swap(&x,&y);
    printf("x=%d y=%d",x,y);
}
void swap(int *a, int *b)
{
    *a ^= *b, *b ^= *a, *a ^= *b;
}
```

Answer:

x=10 y=8

Explanation:

Using ^ like this is a way to swap two variables without using a temporary variable and that too in a single statement.

Inside main(), void swap(); means that swap is a function that may take any number of arguments (not no arguments) and returns nothing. So this doesn't issue a compiler error by the call swap(&x,&y); that has two arguments.

This convention is historically due to pre-ANSI style (referred to as Kernighan and Ritchie style) style of function declaration. In that style, the swap function will be defined as follows,

```
void swap()
int *a, int *b {
    *a ^= *b, *b ^= *a, *a ^= *b; }
```

where the arguments follow the (). So naturally the declaration for swap will look like, void swap() which means the swap can take any number of arguments.

```
148) main()
{
    int i = 257;
    int *iPtr = &i;
    printf("%d %d", *((char*)iPtr), *((char*)iPtr+1) );
}
```

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Answer:

1 1

Explanation:

The integer value 257 is stored in the memory as, 00000001 00000001, so the individual bytes are taken by casting it to char * and get printed.

```
149) main()
{
    int i = 258;
    int *iPtr = &i;
    printf("%d %d", *((char*)iPtr), *((char*)iPtr+1) );
}
```

Answer:

2 1

Explanation:

The integer value 257 can be represented in binary as, 00000001 00000001. Remember that the INTEL machines are 'small-endian' machines. *Small-endian means that the lower order bytes are stored in the higher memory addresses and the higher order bytes are stored in lower addresses.* The integer value 258 is stored in memory as: 00000001 00000010.

```
150) main()
{
    int i=300;
    char *ptr = &i;
    *++ptr=2;
    printf("%d",i);
}
```

Answer:

556

Explanation:

The integer value 300 in binary notation is: 00000001 00101100. It is stored in memory (small-endian) as: 00101100 00000001. Result of the expression *++ptr = 2 makes the memory representation as: 00101100 00000010. So the integer corresponding to it is 00000010 00101100 = 556.

```
151) #include <stdio.h>
main()
{
    char * str = "hello";
    char * ptr = str;
    char least = 127;
    while (*ptr++)
        least = (*ptr < least) ? *ptr : least;
    printf("%d", least);
}
```

Answer:

0

For Placement

Explanation:

After 'ptr' reaches the end of the string the value pointed by 'str' is '\0'. So the value of 'str' is less than that of 'least'. So the value of 'least' finally is 0.

- 152) Declare an array of N pointers to functions returning pointers to functions returning pointers to characters?

Answer:

```
(char*(*)()) (*ptr[N])();
```

- 153)

```
main()
{
    struct student
    {
        char name[30];
        struct date dob;
    }stud;
    struct date
    {
        int day,month,year;
    };
    scanf("%s%d%d%d", stud.rollno, &student.dob.day,
    &student.dob.month, &student.dob.year);
}
```

Answer:

Compiler Error: Undefined structure date

Explanation:

Inside the struct definition of 'student' the member of type struct date is given. The compiler doesn't have the definition of date structure (forward reference is not allowed in C in this case) so it issues an error.

- 154)

```
main()
{
    struct date;
    struct student
    {
        char name[30];
        struct date dob;
    }stud;
    struct date
    {
        int day,month,year;
    };
    scanf("%s%d%d%d", stud.rollno, &student.dob.day,
    &student.dob.month, &student.dob.year);
}
```

Answer:

Compiler Error: Undefined structure date

Explanation:

Only declaration of struct date is available inside the structure definition of 'student' but to have a variable of type struct date the definition of the structure is required.

- 155) There were 10 records stored in "somefile.dat" but the following program printed 11 names. What went wrong?

```
void main()
{
    struct student
    {
        char name[30], rollno[6];
    }stud;
    FILE *fp = fopen("somefile.dat","r");
    while(!feof(fp))
    {
        fread(&stud, sizeof(stud), 1 , fp);
        puts(stud.name);
    }
}
```

Explanation:

fread reads 10 records and prints the names successfully. It will return EOF only when fread tries to read another record and fails reading EOF (and returning EOF). So it prints the last record again. After this only the condition feof(fp) becomes false, hence comes out of the while loop.

- 156) Is there any difference between the two declarations,
1. int foo(int *arr[]) and
2. int foo(int *arr[2])

Answer:

No

Explanation:

Functions can only pass pointers and not arrays. The numbers that are allowed inside the [] is just for more readability. So there is no difference between the two declarations.

- 157) What is the subtle error in the following code segment?

```
void fun(int n, int arr[])
{
    int *p=0;
    int i=0;
    while(i++<n)
        p = &arr[i];
        *p = 0;
}
```

Answer & Explanation:

If the body of the loop never executes p is assigned no address. So p remains NULL where *p =0 may result in problem (may rise to runtime error “NULL pointer assignment” and terminate the program).

158) What is wrong with the following code?

```
int *foo()
{
    int *s = malloc(sizeof(int)100);
    assert(s != NULL);
    return s;
}
```

Answer & Explanation:

assert macro should be used for debugging and finding out bugs. The check s != NULL is for error/exception handling and for that assert shouldn't be used. A plain if and the corresponding remedy statement has to be given.

159) What is the hidden bug with the following statement?

```
assert(val++ != 0);
```

Answer & Explanation:

Assert macro is used for debugging and removed in release version. In assert, the expression involves side-effects. So the behavior of the code becomes different in case of debug version and the release version thus leading to a subtle bug.

Rule to Remember:

Don't use expressions that have side-effects in assert statements.

160)

```
void main()
{
    int *i = 0x400; // i points to the address 400
    *i = 0;        // set the value of memory location pointed by i;
}
```

Answer:

Undefined behavior

Explanation:

The second statement results in undefined behavior because it points to some location whose value may not be available for modification. *This type of pointer in which the non-availability of the implementation of the referenced location is known as 'incomplete type'.*

161)

```
#define assert(cond) if(!(cond)) \
    (fprintf(stderr, "assertion failed: %s, file %s, line %d \n",#cond,\
    __FILE__, __LINE__), abort())
void main()
{
    int i = 10;
    if(i==0)
        assert(i < 100);
    else
        printf("This statement becomes else for if in assert macro");}
```

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Answer:

No output

Explanation:

The else part in which the printf is there becomes the else for if in the assert macro. Hence nothing is printed.

The solution is to use conditional operator instead of if statement,

```
#define assert(cond) ((cond)?(0): (fprintf(stderr, "assertion failed: \ %s, file %s, line %d \n",#cond, __FILE__, __LINE__), abort()))
```

Note:

However this problem of “matching with nearest else” cannot be solved by the usual method of placing the if statement inside a block like this,

```
#define assert(cond) { \
if(!(cond)) \
(fprintf(stderr, "assertion failed: %s, file %s, line %d \n",#cond,\
__FILE__, __LINE__), abort()) \
}
```

162) Is the following code legal?

```
struct a
{
    int x;
    struct a b;
}
```

Answer:

No

Explanation:

Is it not legal for a structure to contain a member that is of the same type as in this case. Because this will cause the structure declaration to be recursive without end.

163) Is the following code legal?

```
struct a
{
    int x;
    struct a *b;
}
```

Answer:

Yes.

Explanation:

*b is a pointer to type struct a and so is legal. The compiler knows, the size of the pointer to a structure even before the size of the structure is determined(as you know the pointer to any type is of same size). This type of structures is known as ‘self-referencing’ structure.

164) Is the following code legal?

```
typedef struct a
{
    int x;
    aType *b; }aType
```

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Answer:

No

Explanation:

The typename aType is not known at the point of declaring the structure (forward references are not made for typedefs).

165) Is the following code legal?

```
typedef struct a aType;
```

```
struct a
{
    int x;
    aType *b;
};
```

Answer:

Yes

Explanation:

The typename aType is known at the point of declaring the structure, because it is already typedefed.

166) Is the following code legal?

```
void main()
{
    typedef struct a aType;
    aType someVariable;
    struct a
    {
        int x;
        aType *b;
    };
}
```

Answer:

No

Explanation:

When the declaration, typedef struct a aType; is encountered body of struct a is not known. This is known as 'incomplete types'.

167)

```
void main()
{
    printf("sizeof (void *) = %d \n", sizeof( void *));
    printf("sizeof (int *) = %d \n", sizeof(int *));
    printf("sizeof (double *) = %d \n", sizeof(double *));
    printf("sizeof(struct unknown *) = %d \n", sizeof(struct unknown *));
}
```

For Placement

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Answer :
sizeof(void *) = 2
sizeof(int *) = 2
sizeof(double *) = 2
sizeof(struct unknown *) = 2

Explanation:

The pointer to any type is of same size.

- 168) char inputString[100] = {0};
To get string input from the keyboard which one of the following is better?
1) gets(inputString)
2) fgets(inputString, sizeof(inputString), fp)

Answer & Explanation:

The second one is better because gets(inputString) doesn't know the size of the string passed and so, if a very big input (here, more than 100 chars) the characters will be written past the input string. When fgets is used with stdin performs the same operation as gets but is safe.

- 169) Which version do you prefer of the following two,
1) printf(“%s”,str); // or the more curt one
2) printf(str);

Answer & Explanation:

Prefer the first one. If the str contains any format characters like %d then it will result in a subtle bug.

```
170) void main()
      {
          int i=10, j=2;
          int *ip= &i, *jp = &j;
          int k = *ip/*jp;
          printf(“%d”,k);
      }
```

Answer:

Compiler Error: “Unexpected end of file in comment started in line 5”.

Explanation:

The programmer intended to divide two integers, but by the “maximum munch” rule, the compiler treats the operator sequence / and * as /* which happens to be the starting of comment. To force what is intended by the programmer,

```
int k = *ip/ *jp;
// give space explicitly separating / and *
//or
int k = *ip/( *jp);
// put braces to force the intention
will solve the problem.
```

```
171) void main()
      {
          char ch;
          for(ch=0;ch<=127;ch++)
```

```
printf("%c %d\n", ch, ch);  
}
```

Answer:

Implementaion dependent

Explanation:

The char type may be signed or unsigned by default. If it is signed then ch++ is executed after ch reaches 127 and rotates back to -128. Thus ch is always smaller than 127.

172) Is this code legal?

```
int *ptr;  
ptr = (int *) 0x400;
```

Answer:

Yes

Explanation:

The pointer ptr will point at the integer in the memory location 0x400.

```
173) main()  
{  
    char a[4]="HELLO";  
    printf("%s",a);  
}
```

Answer:

Compiler error: Too many initializers

Explanation:

The array a is of size 4 but the string constant requires 6 bytes to get stored.

```
174) main()  
{  
    char a[4]="HELL";  
    printf("%s",a);  
}
```

Answer:

HELL%@!~@!@???@~~!

Explanation:

The character array has the memory just enough to hold the string "HELL" and doesnt have enough space to store the terminating null character. So it prints the HELL correctly and continues to print garbage values till it accidentally comes across a NULL character.

```
175) main()  
{  
    int a=10,*j;  
    void *k;  
    j=k=&a;  
    j++;  
    k++;  
    printf("\n %u %u ",j,k);}
```

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Answer:

Compiler error: Cannot increment a void pointer

Explanation:

Void pointers are generic pointers and they can be used only when the type is not known and as an intermediate address storage type. No pointer arithmetic can be done on it and you cannot apply indirection operator (*) on void pointers.

176) Printf can be implemented by using _____ list.

Answer:

Variable length argument lists

```
177) char *someFun()
    {
    char *temp = "string constant";
    return temp;
    }
int main()
    {
    puts(someFun());
    }
```

Answer:

string constant

Explanation:

The program suffers no problem and gives the output correctly because the character constants are stored in code/data area and not allocated in stack, so this doesn't lead to dangling pointers.

```
179) char *someFun1()
    {
    char temp[ ] = "string";
    return temp;
    }
char *someFun2()
    {
    char temp[ ] = {'s', 't', 'r', 'i', 'n', 'g'};
    return temp;
    }
int main()
    {
    puts(someFun1());
    puts(someFun2());
    }
```

Answer:

Garbage values.

Explanation:

Both the functions suffer from the problem of dangling pointers. In someFun1() temp is a character array and so the space for it is allocated in heap and is

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initialized with character string "string". This is created dynamically as the function is called, so is also deleted dynamically on exiting the function so the string data is not available in the calling function main() leading to print some garbage values. The function someFun2() also suffers from the same problem but the problem can be easily identified in this case.

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C QUESTIONS

1. How do you decide which integer type to use?
2. What should the 64-bit type on a machine that can support it?
3. What's the best way to declare and define global variables and functions?
4. What does extern mean in a function declaration?
5. What's the auto keyword good for?
6. I can't seem to define a linked list successfully. I tried

```
typedef struct {
    char *item;
    NODEPTR next;
} *NODEPTR;
```

but the compiler gave me error messages. Can't a structure in C contain a pointer to itself?
7. How do I declare an array of N pointers to functions returning pointers to functions returning pointers to characters?
8. How can I declare a function that can return a pointer to a function of the same type?
9. What's the right declaration for main()? Is void main() correct?
10. What am I allowed to assume about the initial values of variables which are not explicitly initialized? If global variables start out as "zero", is that good enough for null pointers and floating-point zeroes?
This code, straight out of a book, isn't compiling:

```
int f()
{
    char a[] = "Hello, world!";
}
```
11. What's wrong with this initialization?

```
char *p = malloc(10);
```

What is the difference between these initializations?

```
char a[] = "string literal";
char *p = "string literal";
```
12. What's the difference between these two declarations?

```
struct x1 { ... };
typedef struct { ... } x2;
```

Why doesn't

```
struct x { ... };
x thestruct;
```
13. Can a structure contain a pointer to itself?
14. What's the best way of implementing opaque (abstract) data types in C?
I came across some code that declared a structure like this:

```
struct name {
    int namelen;
    char namestr[1];
};
```

and then did some tricky allocation to make the namestr array act like it had several elements. Is this legal or portable?
15. Is there a way to compare structures automatically?

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16. How can I pass constant values to functions which accept structure arguments?
17. How can I read/write structures from/to data files?
18. Why does sizeof report a larger size than I expect for a structure type, as if there were padding at the end?
19. How can I determine the byte offset of a field within a structure?
20. How can I access structure fields by name at run time?
This program works correctly, but it dumps core after it finishes. Why?
struct list {
char *item;
struct list *next;
}
/* Here is the main program. */
main(argc, argv)
{ ... }
21. Can I initialize unions?
22. What is the difference between an enumeration and a set of preprocessor #defines?
23. Is there an easy way to print enumeration values symbolically?
24. Why doesn't this code:
a[i] = i++;
work?
I've experimented with the code
int i = 3;
i = i++;
on several compilers. Some gave i the value 3, and some gave 4.
25. Which compiler is correct?
26. Can I use explicit parentheses to force the order of evaluation I want? Even if I don't, doesn't precedence dictate it?
27. How can I understand these complex expressions? What's a "sequence point"?
28. If I'm not using the value of the expression, should I use i++ or ++i to increment a variable?
29. Why doesn't the code
int a = 1000, b = 1000;
long int c = a * b;
work?
30. I'm trying to declare a pointer and allocate some space for it, but it's not working. What's wrong with this code?
char *p;
*p = malloc(10);
31. Does *p++ increment p, or what it points to?
32. I have a char * pointer that happens to point to some ints, and I want to step it over them. Why doesn't
((int *)p)++;
work?
33. I have a function which accepts, and is supposed to initialize, a pointer:

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```
void f(int *ip)
{
    static int dummy = 5;
    ip = &dummy;
}
```

But when I call it like this:

```
int *ip;
f(ip);
the pointer in the caller remains unchanged.
```

Why?

34. Can I use a void ** pointer as a parameter so that a function can accept a generic pointer by reference?
35. I have a function
extern int f(int *);
which accepts a pointer to an int. How can I pass a constant by reference? A call like
f(&5);
doesn't seem to work.
36. Does C even have "pass by reference"?
37. What is infamous null pointer?
38. How do I get a null pointer in my programs?
39. Is the abbreviated pointer comparison "if(p)" to test for non-null pointers valid? What if the internal representation for null pointers is nonzero?
40. What is NULL and how is it #defined?
41. How should NULL be defined on a machine which uses a nonzero bit pattern as the internal representation of a null pointer?
42. If NULL were defined as follows:
#define NULL ((char *)0)
wouldn't that make function calls which pass an uncast NULL work?
43. If NULL and 0 are equivalent as null pointer constants, which should I use?
44. What does a run-time "null pointer assignment" error mean? How can I track it down?
45. Why are array and pointer declarations interchangeable as function formal parameters?
46. How can an array be an lvalue, if you can't assign to it?
47. Practically speaking, what is the difference between arrays and pointers?
48. How do I declare a pointer to an array?
49. How can I set an array's size at run time? How can I avoid fixed-sized arrays?
50. How can I declare local arrays of a size matching a passed-in array?
51. How can I dynamically allocate a multidimensional array?
52. How do I write functions which accept two-dimensional arrays when the width is not known at compile time?
53. How can I use statically- and dynamically-allocated multidimensional arrays interchangeably when passing them to functions?
54. Why doesn't sizeof properly report the size of an array when the array is a parameter to a function?
55. Why doesn't this fragment work?

```
char *Answer;
```

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```
printf("Type something:\n");
gets(Answer);
printf("You typed \"%s\"\n", Answer);
just tried the code
char *p;
strcpy(p, "abc");
and it worked. How? Why didn't it crash?
```

56. How much memory does a pointer variable allocate?
57. Why am I getting "warning: assignment of pointer from integer lacks a cast" for calls to malloc()?
58. Why does some code carefully cast the values returned by malloc to the pointer type being allocated?
59. Why isn't a pointer null after calling free()? How unsafe is it to use (assign, compare) a pointer value after it's been freed?
60. When I call malloc() to allocate memory for a pointer which is local to a function, do I have to explicitly free() it?
61. I'm allocating structures which contain pointers to other dynamically-allocated objects. When I free a structure, do I also have to free each subsidiary pointer?
62. Must I free allocated memory before the program exits?
63. How does free() know how many bytes to free?
64. Can I query the malloc package to find out how big an allocated block is?
65. Is it legal to pass a null pointer as the first argument to realloc()?
66. What's the difference between calloc() and malloc()? Is it safe to take advantage of calloc's zero-filling? Does free() work on memory allocated with calloc(), or do you need a cfree()?
67. What is alloca() and why is its use discouraged?
68. Why doesn't

```
strcat(string, '!');
```

work?

69. How can I get the numeric (character set) value corresponding to a character, or vice versa?
70. What is the right type to use for Boolean values in C?
71. Is if(p), where p is a pointer, a valid conditional?
72. How can I write a generic macro to swap two values?
73. What's the best way to write a multi-statement macro?
74. Is it acceptable for one header file to #include another?
75. What's the difference between #include < and #include "" ?
76. What are the complete rules for header file searching?
77. How can I construct preprocessor #if expressions which compare strings?
78. Does the sizeof operator work in preprocessor #if directives?
79. Can I use an #ifdef in a #define line, to define something two different ways?
80. Is there anything like an #ifdef for typedefs?
81. How can I use a preprocessor #if expression to tell if a machine is big-endian or little-endian?
82. How can I list all of the predefined identifiers?
83. How can I write a macro which takes a variable number of arguments?
84. What is the "ANSI C Standard"?

85. What's the difference between "const char *p" and "char * const p"?
86. Why can't I pass a char ** to a function which expects a const char **?
87. What's the correct declaration of main()?
88. Can I declare main() as void ?
89. What does the message "warning: macro replacement within a string literal" mean?
90. What are #pragmas and what are they good for?
91. What does "#pragma once" mean?
92. Is char a[3] = "abc"; legal? What does it mean?
93. Why can't I perform arithmetic on a void * pointer?
94. What's the difference between memcpy() and memmove()?
95. What should malloc(0) do? Return a null pointer or a pointer to 0 bytes?
96. What's wrong with this code?

```
char c;
while((c = getchar()) != EOF) ...
```
97. Why does the code

```
while(!feof(infp)) {
fgets(buf, MAXLINE, infp);
fputs(buf, outfp);
}
```

copy the last line twice?
98. How can I read one character at a time, without waiting for the RETURN key?
99. How can I print a '%' character in a printf format string?
100. What printf format should I use for a typedef like size_t when I don't know whether it's long or some other type?
101. How can I implement a variable field width with printf?
102. How can I print numbers with commas separating the thousands? What about currency formatted numbers?
103. Why doesn't the call scanf("%d", i) work?
104. How can I specify a variable width in a scanf() format string?
105. Why doesn't this code:

```
double d;
scanf("%f", &d);
```

work?
106. How can I tell how much destination buffer space I'll need for an arbitrary sprintf call? How can I avoid overflowing the destination buffer with sprintf()?
107. What's the difference between fgetpos/fsetpos and ftell/fseek?
108. What are fgetpos() and fsetpos() good for?
109. How can I redirect stdin or stdout to a file from within a program?
110. How can I read a binary data file properly?
111. How can I convert numbers to strings (the opposite of atoi)? Is there an itoa() function?
112. Why does strncpy() not always place a '\0' terminator in the destination string?
113. Why do some versions of toupper() act strangely if given an upper-case letter?
114. How can I split up a string into whitespace-separated fields? How can I duplicate the process by which main() is handed argc and argv?
115. How can I sort a linked list?

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116. How can I sort more data than will fit in memory?
117. How can I get the current date or time of day in a C program?
118. How can I add N days to a date? How can I find the difference between two dates?
119. How can I get random integers in a certain range?
120. How can I generate random numbers with a normal or Gaussian distribution?
121. What does it mean when the linker says that `_end` is undefined?
122. When I set a float variable to, say, 3.1, why is `printf` printing it as 3.0999999?
123. What's a good way to check for "close enough" floating-point equality?
124. How do I round numbers?
125. Why doesn't C have an exponentiation operator?
126. How do I test for IEEE NaN and other special values?
127. What's a good way to implement complex numbers in C?
How can `%f` be used for both float and double arguments in `printf()`? Aren't they different types?
128. How can I write a function that takes a variable number of arguments?
129. How can I write a function that takes a format string and a variable number of arguments, like `printf()`, and passes them to `printf()` to do most of the work?
130. How can I write a function analogous to `scanf()`, that calls `scanf()` to do most of the work?
131. How can I discover how many arguments a function was actually called with?
132. How can I write a function which takes a variable number of arguments and passes them to some other function (which takes a variable number of arguments)?
133. How can I call a function with an argument list built up at run time?
134. What does static variable mean?
135. What is a pointer?
136. What is a structure?
137. What are the differences between structures and arrays?
138. In header files whether functions are declared or defined?
139. What are the differences between `malloc()` and `calloc()`?
140. What are macros? what are its advantages and disadvantages?
141. Difference between pass by reference and pass by value?
142. What is static identifier?
143. Where are the auto variables stored?
144. Where does global, static, local, register variables, free memory and C Program instructions get stored?
145. Difference between arrays and linked list?
146. What are enumerations?
147. Describe about storage allocation and scope of global, extern, static, local and register variables?
148. What are register variables? What are the advantage of using register variables?
149. What is the use of `typedef`?
150. Can we specify variable field width in a `scanf()` format string? If possible how?

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151. Out of fgets() and gets() which function is safe to use and why?
152. Difference between strdup and strcpy?
153. What is recursion?
154. Differentiate between a for loop and a while loop? What are its uses?
155. What are the different storage classes in C?
156. Write down the equivalent pointer expression for referring the same element a[i][j][k][l]?
157. What is the difference between Structure and Unions?
158. What are the advantages of using Unions?
159. What are the advantages of using pointers in a program?
160. What is the difference between Strings and Arrays?
161. In a header file whether functions are declared or defined?
162. What is a far pointer? where we use it?
163. How will you declare an array of three function pointers where each function receives two ints and returns a float?
164. What is a NULL Pointer? Whether it is same as an uninitialized pointer?
165. What is a NULL Macro? What is the difference between a NULL Pointer and a NULL Macro?
166. What does the error 'Null Pointer Assignment' mean and what causes this error?
167. What are near, far and huge pointers? How many bytes are occupied by them?
168. How would you obtain segment and offset addresses from a far address of a memory location?
169. Are the expressions arr and &arr same for an array of integers?
170. Does mentioning the array name give the base address in all the contexts?
171. Explain one method to process an entire string as one unit?
172. What is the similarity between a Structure, Union and enumeration?
173. Can a Structure contain a Pointer to itself?
174. How can we check whether the contents of two structure variables are same or not?
175. How are Structure passing and returning implemented by the compiler?
176. How can we read/write Structures from/to data files?
177. What is the difference between an enumeration and a set of pre-processor #defines?
178. What do the 'c' and 'v' in argc and argv stand for?
179. Are the variables argc and argv local to main?
180. What is the maximum combined length of command line arguments including the space between adjacent arguments?
181. If we want that any wildcard characters in the command line arguments should be appropriately expanded, are we required to make any special provision? If yes, which?
182. Does there exist any way to make the command line arguments available to other functions without passing them as arguments to the function?
183. What are bit fields? What is the use of bit fields in a Structure declaration?
184. To which numbering system can the binary number 1101100100111100 be easily converted to?
185. Which bit wise operator is suitable for checking whether a particular bit is on or off?
186. Which bit wise operator is suitable for turning off a particular bit in a number?

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187. Which bit wise operator is suitable for putting on a particular bit in a number?
188. Which bit wise operator is suitable for checking whether a particular bit is on or off?
189. which one is equivalent to multiplying by 2: Left shifting a number by 1 or Left shifting an unsigned int or char by 1?
190. Write a program to compare two strings without using the strcmp() function.
191. Write a program to concatenate two strings.
192. Write a program to interchange 2 variables without using the third one.
193. Write programs for String Reversal & Palindrome check
194. Write a program to find the Factorial of a number
195. Write a program to generate the Fibonacci Series
196. Write a program which employs Recursion
197. Write a program which uses Command Line Arguments
198. Write a program which uses functions like strcmp(), strcpy() etc
199. What are the advantages of using typedef in a program?
200. How would you dynamically allocate a one-dimensional and two-dimensional array of integers?
201. How can you increase the size of a dynamically allocated array?
202. How can you increase the size of a statically allocated array?
203. When reallocating memory if any other pointers point into the same piece of memory do you have to readjust these other pointers or do they get readjusted automatically?
204. Which function should be used to free the memory allocated by calloc()?
205. How much maximum can you allocate in a single call to malloc()?
206. Can you dynamically allocate arrays in expanded memory?
207. What is object file? How can you access object file?
208. Which header file should you include if you are to develop a function which can accept variable number of arguments?
209. Can you write a function similar to printf()?
210. How can a called function determine the number of arguments that have been passed to it?
211. Can there be at least some solution to determine the number of arguments passed to a variable argument list function?
212. How do you declare the following:
 - An array of three pointers to chars
 - An array of three char pointers
 - A pointer to array of three chars
 - A pointer to function which receives an int pointer and returns a float pointer
 - A pointer to a function which receives nothing and returns nothing
213. What do the functions atoi(), itoa() and gcvt() do?
214. Does there exist any other function which can be used to convert an integer or a float to a string?
215. How would you use qsort() function to sort an array of structures?
216. How would you use qsort() function to sort the name stored in an array of pointers to string?
217. How would you use bsearch() function to search a name stored in array of pointers to string?
218. How would you use the functions sin(), pow(), sqrt()?

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219. How would you use the functions `memcpy()`, `memset()`, `memmove()`?
220. How would you use the functions `fseek()`, `fread()`, `fwrite()` and `ftell()`?
221. How would you obtain the current time and difference between two times?
222. How would you use the functions `randomize()` and `random()`?
223. How would you implement a `substr()` function that extracts a sub string from a given string?
224. What is the difference between the functions `rand()`, `random()`, `srand()` and `randomize()`?
225. What is the difference between the functions `memmove()` and `memcpy()`?
226. How do you print a string on the printer?
227. Can you use the function `fprintf()` to display the output on the screen?

For Placement

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C++ QUESTIONS

1. What is a class?
2. What is an object?
3. What is the difference between an object and a class?
4. What is the difference between class and structure?
5. What is public, protected, private?
6. What are virtual functions?
7. What is friend function?
8. What is a scope resolution operator?
9. What do you mean by inheritance?
10. What is abstraction?
11. What is polymorphism? Explain with an example.
12. What is encapsulation?
13. What do you mean by binding of data and functions?
14. What is function overloading and operator overloading?
15. What is virtual class and friend class?
16. What do you mean by inline function?
17. What do you mean by public, private, protected and friendly?
18. When is an object created and what is its lifetime?
19. What do you mean by multiple inheritance and multilevel inheritance?
Differentiate between them.
20. Difference between realloc() and free?
21. What is a template?
22. What are the main differences between procedure oriented languages and object oriented languages?
23. What is R T T I ?
24. What are generic functions and generic classes?
25. What is namespace?
26. What is the difference between pass by reference and pass by value?
27. Why do we use virtual functions?
28. What do you mean by pure virtual functions?
29. What are virtual classes?
30. Does c++ support multilevel and multiple inheritance?
31. What are the advantages of inheritance?
32. When is a memory allocated to a class?
33. What is the difference between declaration and definition?
34. What is virtual constructors/destructors?
35. In c++ there is only virtual destructors, no constructors. Why?
36. What is late bound function call and early bound function call?
Differentiate.
37. How is exception handling carried out in c++?
38. When will a constructor executed?
39. What is Dynamic Polymorphism?
40. Write a macro for swapping integers.

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QUESTIONS AND ANSWERS

1. Difference between static global and global?

Ans: There is no any difference between static and non static global variable

2. What are the differences between public, private, and protected access?

3. What are the differences between a struct and a class in C++?

Ans: I think both struct and class in C++ are quite the same except for the fact that, members in struct are public by default whereas they are private for class. Moreover struct also supports inheritance, polymorphism etc...etc...

4. What is the difference between Pointer and a Reference? When you would use them?

Ans: A Pointer is not a const pointer unless you define it in that way, but a reference on the contrary is a const pointer by default and adding to this implementation it is deferred automatically.

5. What happens if an exception is thrown from an object's constructor and object's destructor?

Ans: If the exception is thrown in constructor, its caught or function terminate will be called. You cannot throw exception from destructor.

6. What is the difference between operator new and the new operator?

Ans: operator new is just like malloc and new is the conventional new in C++

7. What is Virtual Inheritance?

Ans: Virtual inheritance is used to avoid multiple copies of a base class in a multiple-inherited object. However, there are cases where multiple copies of a base are needed in a derived class. In such cases, virtual inheritance is intentionally avoided..

8. What is the difference between public, private, protected inheritance?

Ans: We use these keywords to specify access levels for member variables, or for member functions (methods).

.Public variables, are variables that are visible to all classes.

.Private variables, are variables that are visible only to the class to which they belong.

.Protected variables, are variables that are visible only to the class to which they belong, and any subclasses.

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Deciding when to use private, protected, or public variables is sometimes tricky. You need to think whether or not an external object (or program), actually needs direct access to the information. If you do want other objects to access internal data, but wish to control it, you would make it either private or protected, but provide functions which can manipulate the data in a controlled way.

9. What is the Difference between a "assignment operator" and a "copy constructor"?

Ans: Assignment operator copies the values of one object to another of the same class. It will execute only when the right side of the variable is object and two sides are not equal. It does shallow copy.. Copy constructor creates the object if its not existing and copies the values of another object of the same class and it does the deep copy..

10. What are the differences between a struct and a class in C++?

Ans: In Class Members are private by default. In Structure Member are public by default. structures are value typed where as classes are reference typed. Class can be inherited But Structure can't be inherited. In structures we cannot initialize the variable during the declaration while in classes we can. Structure does not support polymorphism while class does. Structure can be declared without a tag at the first time, but not in case of class.

e.g. struct { variables; } (struct variable list); [It would not raise any error while compilation]

class { access specifier: variable list; access specifier: vari....

}; [it will cause an error while compilation] ...

Java Questions and Answers

1. Can we declare an anonymous class as both extending a class and implementing an interface?

Ans: No..

2. jdbc drivers?

Ans: Type 1: JDBC-ODBC Bridge

Type 2: Native API partly Java Driver

Type 3: Network protocol Driver

Type 4: JDBC Net pure Java Driver - thin driver

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3.Hard code and soft code?

Ans:Hard code is the code directly used in the program. Soft code gets the information dynamically from outside. For example, to get the database connectivity, if we passed the url, username & password for thin drivers in the programming itself is hard coding. At the same time, if we create a jndi for the above in config & get it in the program using jndi name is softcode. It is becoz to change the db connectivity settings we need not modify the program.

4.what is the difference between ArrayList and Vector?

Ans:Arraylist is not synchronized where as Vector is synchronized. No default size for Arraylist where as Vector is having a default size of 10.

5.How do you set security in applets?

Ans:using setSecurityManager() method.

6. what is an object and how do you allocate memory to it?

Ans:Object is an instance of a class and it is a software unit that combines a structured set of data with a set of operations for inspecting and manipulating that data. when an object is created using new operator,memory is allocated to it.

7.Can try statements be nested?

Ans:yes.

8.Can an exception be rethrown?

Ans:yes. Exception can be rethrown by using throw statement.

9.Name the class that used to read objects directly from a stream?

Ans:ObjectInputStream..

10.For which statements we use a label?

Ans:for switch statements.

11.Can a class inherit the constructors of its superclass?

Ans:No a subclass cannot inherit the constructors of its superclass. Constructors are special function members of a class in that they are not inherited by the subclass.

12.

For Placement

e-INTERVIEW

General aptitude:

1. $1/8$ is divided by 's', if 's' is increased by 2 times, what is the result.

Ans: $s/4$..

2. A sum 's' is divided into 4 parts. second person gets Rs 10 more than first. 3rd person is Rs 10 more than second, 4th is 10 more than 3rd. how much amount do 1st person get.

Ans: $(s-60)/4$..

3. To travel 'm' miles the time is 'h' hours, then what is the time taken to travel M miles.

Ans: It will take $(h*M)/m$ Time.

4. AB, BC, C=D, DE, then which is greatest
a) A/B b) A/C c) A/E d) none .

Ans: c) A/E is the right **Answer**
because E is the smaller when compared to B, C..
if the denominator small only **Answer** will be high value..

5. In base representation for a rupee 100 paise, then base 8 representation. what is rupee value .

Ans: 144.

6. area of triangle = $1/2 * b * h$ base increased by 4 times & height is divided by 2, the net effect of area.

Ans: Original area is doubled.

7. out of 55 eggs 5 are defective. what is % of defective eggs.

Ans: 5%..

8. consider expression 'ab' . what happens when 'a' is divided by 'c' & 'b' is multiplied by 'c'.

Ans: Value remains same..

9. $E = I * I * R$ what is the effect of E when I becomes $I/2$

Ans: $E = I/2 * I/2 * R = E(\text{prev})/4$.

For Placement

e-INTERVIEW

OOPS QUESTIONS

1. How do you write a program which produces its own source code as its output?
2. How can I find the day of the week given the date?
3. Why doesn't C have nested functions?
4. What is the most efficient way to count the number of bits which are set in a value?
5. How can I convert integers to binary or hexadecimal?
6. How can I call a function, given its name as a string?
7. How do I access command-line arguments?
8. How can I return multiple values from a function?
9. How can I invoke another program from within a C program?
10. How can I access memory located at a certain address?
11. How can I allocate arrays or structures bigger than 64K?
12. How can I find out how much memory is available?
13. How can I read a directory in a C program?
14. How can I increase the allowable number of simultaneously open files?
15. What's wrong with the call "fopen("c:\newdir\file.dat", "r")"?
16. What is the output of printf("%d")
17. What will happen if I say delete this
18. Difference between "C structure" and "C++ structure".
19. Difference between a "assignment operator" and a "copy constructor"
20. What is the difference between "overloading" and "overriding"?
21. Explain the need for "Virtual Destructor".
22. Can we have "Virtual Constructors"?
23. What are the different types of polymorphism?
24. What are Virtual Functions? How to implement virtual functions in "C"
25. What are the different types of Storage classes?
26. What is Namespace?
27. What are the types of STL containers?.
28. Difference between "vector" and "array"?
29. How to write a program such that it will delete itself after execution?
30. Can we generate a C++ source code from the binary file?
31. What are inline functions?
32. Talk something about profiling?
33. How many lines of code you have written for a single program?
34. What is "stringstream" ?
35. How to write Multithreaded applications using C++?
36. Explain "passing by value", "passing by pointer" and "passing by reference"
37. Write any small program that will compile in "C" but not in "C++"
38. Have you heard of "mutable" keyword?
39. What is a "RTTI"?
40. Is there something that I can do in C and not in C++?
41. Why preincrement operator is faster than postincrement?
42. What is the difference between "calloc" and "malloc"?
43. What will happen if I allocate memory using "new" and free it using "free" or allocate using "calloc" and free it using "delete"?
44. What is Memory Alignment?

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45. Explain working of printf.
46. Difference between "printf" and "sprintf".
47. What is "map" in STL?
48. When shall I use Multiple Inheritance?
49. What are the techniques you use for debugging?
50. How to reduce a final size of executable?
51. Give 2 examples of a code optimization.
52. What is inheritance?
53. Difference between Composition and Aggregation.
54. Difference: Sequence Diagrams, Collaboration Diagrams.
55. Difference: 'uses', 'extends', 'includes'
56. What shall I go for Package Diagram?
57. What is Polymorphism?
58. Is class an Object? Is object a class?
59. Comment: C++ "includes" behavior and java "imports"
60. What do you mean by "Realization"?
61. What is a Persistent, TrAnsient Object?
62. What is the use of Operator Overloading?
63. Does UML guarantee project success?
64. Difference: Activity Diagram and Sequence Diagram.
65. What is association?
66. How to resolve many to many relationship?
67. How do you represent static members and abstract classes in Class Diagram?
68. What does static variable mean?
69. What is a pointer?
70. What is a structure?
71. What are the differences between structures and arrays?
72. In header files whether functions are declared or defined?
73. What are the differences between malloc() and calloc()?
74. What are macros? what are its advantages and disadvantages?
75. Difference between pass by reference and pass by value?
76. What is static identifier?
77. Where are the auto variables stored?
78. Where does global, static, local, register variables, free memory and C Program instructions get stored?
79. Difference between arrays and linked list?
80. What are enumerations?
81. Describe about storage allocation and scope of global, extern, static, local and register variables?
82. What are register variables? What are the advantage of using register variables?
83. What is the use of typedef?
84. Can we specify variable field width in a scanf() format string? If possible how?
85. Out of fgets() and gets() which function is safe to use and why?
86. Difference between strdup and strepy?
87. What is recursion?
88. Differentiate between a for loop and a while loop? What are it uses?
89. What are the different storage classes in C?

For Placement

90. Write down the equivalent pointer expression for referring the same element `a[i][j][k][l]`?
91. What is difference between Structure and Unions?
92. What the advantages of using Unions?
93. What are the advantages of using pointers in a program?
94. What is the difference between Strings and Arrays?
95. In a header file whether functions are declared or defined?
96. What is a far pointer? where we use it?
97. How will you declare an array of three function pointers where each function receives two ints and returns a float?
98. what is a NULL Pointer? Whether it is same as an uninitialized pointer?
99. What is a NULL Macro? What is the difference between a NULL Pointer and a NULL Macro?
100. What does the error 'Null Pointer Assignment' mean and what causes this error?
101. What is near, far and huge pointers? How many bytes are occupied by them?
102. How would you obtain segment and offset addresses from a far address of a memory location?
103. Are the expressions `arr` and `&arr` same for an array of integers?
104. Does mentioning the array name gives the base address in all the contexts?
105. Explain one method to process an entire string as one unit?
106. What is the similarity between a Structure, Union and enumeration?
107. Can a Structure contain a Pointer to itself?
108. How can we check whether the contents of two structure variables are same or not?
109. How are Structure passing and returning implemented by the compiler?
110. How can we read/write Structures from/to data files?
111. What is the difference between an enumeration and a set of pre-processor # defines?
112. What do the 'c' and 'v' in `argc` and `argv` stand for?
113. Are the variables `argc` and `argv` local to `main`?
114. What is the maximum combined length of command line arguments including the space between adjacent arguments?
115. If we want that any wildcard characters in the command line arguments should be appropriately expanded, are we required to make any special provision? If yes, which?
116. Does there exist any way to make the command line arguments available to other functions without passing them as arguments to the function?
117. What are bit fields? What is the use of bit fields in a Structure declaration?
118. To which numbering system can the binary number `1101100100111100` be easily converted to?
119. Which bit wise operator is suitable for checking whether a particular bit is on or off?
120. Which bit wise operator is suitable for turning off a particular bit in a number?
121. Which bit wise operator is suitable for putting on a particular bit in a number?
122. Which bit wise operator is suitable for checking whether a particular bit is on or off?
123. Which one is equivalent to multiplying by 2: Left shifting a number by 1 or Left shifting an unsigned int or char by 1?
124. Write a program to compare two strings without using the `strcmp()` function.

125. Write a program to concatenate two strings.
126. Write a program to interchange 2 variables without using the third one.
127. Write programs for String Reversal & Palindrome check
128. Write a program to find the Factorial of a number
129. Write a program to generate the Fibonacci Series
130. Write a program which employs Recursion
131. Write a program which uses Command Line Arguments
132. Write a program which uses functions like strcmp(), strcpy()? etc
133. What are the advantages of using typedef in a program?
134. How would you dynamically allocate a one-dimensional and two-dimensional array of integers?
135. How can you increase the size of a dynamically allocated array?
136. How can you increase the size of a statically allocated array?
137. When reallocating memory if any other pointers point into the same piece of memory do you have to readjust these other pointers or do they get readjusted automatically?
138. Which function should be used to free the memory allocated by calloc()?
139. How much maximum can you allocate in a single call to malloc()?
140. Can you dynamically allocate arrays in expanded memory?
141. What is object file? How can you access object file?
142. Which header file should you include if you are to develop a function which can accept variable number of arguments?
143. Can you write a function similar to printf()?
144. How can a called function determine the number of arguments that have been passed to it?
145. Can there be at least some solution to determine the number of arguments passed to a variable argument list function?
146. How do you declare the following:
147. An array of three pointers to chars
148. An array of three char pointers
149. A pointer to array of three chars
150. A pointer to function which receives an int pointer and returns a float pointer
151. A pointer to a function which receives nothing and returns nothing
152. What do the functions atoi(), itoa() and gcvt() do?
153. Does there exist any other function which can be used to convert an integer or a float to a string?
154. How would you use qsort() function to sort an array of structures?
155. How would you use qsort() function to sort the name stored in an array of pointers to string?
156. How would you use bsearch() function to search a name stored in array of pointers to string?
157. How would you use the functions sin(), pow(), sqrt()?
158. How would you use the functions memcpy(), memset(), memmove()?
159. How would you use the functions fseek(), freed(), fwrite() and ftell()?
160. How would you obtain the current time and difference between two times?
161. How would you use the functions randomize() and random()?
162. How would you implement a substr() function that extracts a sub string from a given string?
163. What is the difference between the functions rand(), random(), srand() and randomize()?

164. What is the difference between the functions memmove() and memcpy()?
165. How do you print a string on the printer?
166. Can you use the function fprintf() to display the output on the screen?
167. What is an object?
168. What is the difference between an object and a class?
169. What is the difference between class and structure?
170. What is public, protected, private?
171. What are virtual functions?
172. What is friend function?
173. What is a scope resolution operator?
174. What do you mean by inheritance?
175. What is abstraction?
176. What is polymorphism? Explain with an example.
177. What is encapsulation?
178. What do you mean by binding of data and functions?
179. What is function overloading and operator overloading?
180. What is virtual class and friend class?
181. What do you mean by inline function?
182. What do you mean by public, private, protected and friendly?
183. When is an object created and what is its lifetime?
184. What do you mean by multiple inheritance and multilevel inheritance?
Differentiate between them.
185. Difference between realloc() and free?
186. What is a template?
187. What are the main differences between procedure oriented languages and object oriented languages?
188. What is RTTI?
189. What are generic functions and generic classes?
190. What is namespace?
191. What is the difference between pass by reference and pass by value?
192. Why do we use virtual functions?
193. What do you mean by pure virtual functions?
194. What are virtual classes?
195. Does c++ support multilevel and multiple inheritance?
196. What are the advantages of inheritance?
197. When is a memory allocated to a class?
198. What is the difference between declaration and definition?
199. What is virtual constructors/destructors?
200. In c++ there is only virtual destructors, no constructors. Why?
201. What is late bound function call and early bound function call? Differentiate.
202. How is exception handling carried out in c++?
203. When will a constructor executed?
204. What is Dynamic Polymorphism?

e-INTERVIEW

Introduction To Pointers

Pointers contribute to making C++ the powerful programming language it is. I've talked about them in previous lessons, and pointers will be discussed in many of the subsequent lessons, as their use will be expanded over this course. For now, we will introduce the basic use of pointers and use this lesson as a foundation to build upon.

A pointer is unlike any of the variables we have discussed so far. Instead of storing an assigned value, a pointer stores a memory address, which, in turn, points to another variable. Following are examples of declarations of pointers:

```
int *x;
float *p;
char *fn;
```

Note that none of the above variables (*x, *p, or *fn) hold values. Instead, they hold memory addresses. We will discuss the importance of the base type of a pointer in a few minutes.

Pointer Operators

There are two pointer operators: * and &. The first operator returns the value of the variable located at a specific memory address; the second returns the memory address of that variable. Using these two operators, a programmer can indirectly access a variable. The following short program illustrates the basic uses of these two operators:

```
#include
using namespace std;
int main()
{
    int x;
    int *y;
    int z;
    x = 623;
    y = &x;
    z = *y;
    cout << "z now equals: " << z << "\n";
    return 0;
}
```

In the above example, the value of x is set to 623. Then y is set to hold the address of x using the & operator. Z is then set to the value stored at the address held by y with the * operator. Therefore, the output for this program will look like this:

z now equals: 623

For Placement

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Pointer base types

Let's now modify the above sample program. Suppose that the variable declarations looked like this:

```
double x;  
int *y;  
int z;
```

Although this program should function similarly to the one above, the memory allocation for `z` is only large enough to hold an `int`. Now, since we have assigned a value of `double` to a memory space only capable of holding an `int`, an error will occur. If the value of `x` were set to `456.789`, we would get an invalid result if this program were run.

Using a pointer to assign values

If we have an integer pointer, `*y`, we can assign a value to the memory address that `*y` points to:

```
*y = 50;
```

We can also decrement the value stored at the memory location pointed to by `*y`:

```
(*y)--;
```

Look at the following program and determine its output:

```
#include  
using namespace std;  
int main()  
{  
    int *y, x;  
    y = &x;  
    *y = 50;  
    cout << x << '\n';  
    (*y)--;  
    cout << x << '\n';  
    return 0;  
}
```

The output would be:

```
50  
49
```

For Placement

The pointer `y` is set to the memory location of variable `x`. This means that when `*y` is accessed, it will be writing to `x`'s memory space. When `y` is dereferenced, the value of `x` is accessed, so the assignment and decrement operations happen and can be accessed through variable `x`.

Pointer Expressions

There are four arithmetic operators that can be used on pointers: `++`, `--`, `+`, and `-`. The use of these operators on pointers, however, is different than their use on other variables. If you increment an integer pointer, its value does not increase by a value of 1. The increment will instead be of a value equal to the memory location of the next integer in the computer's memory. Similarly, decrementing a pointer changes its value to that of the previous integer.

If you have a float pointer and add a value of 3 using the `+` operator, you are assigning to it the memory location of the third float variable past its current location. You can use the minus operator in the same manner. This is often referred to as pointer math and is very useful to randomly move the pointer to and from elements of an array.

It is important that the programmer be aware that the pointer moves and that it does move into addresses prior to or past the end of an array.

The `-` operator may also be used in a special way: If you subtract two pointers of the same base type, the remainder will be the number of elements separating the two pointers. Pointer math should only be used on arrays, as accessing arbitrary memory locations can cause unexpected results.

Comparing pointers

The relational operators (`==`, `<`, `>`) may be used to compare pointers. However, the comparison will be meaningless unless the pointers point to related variables. In the last section of this lesson, we will discuss the ways relational operators are used to compare pointers to variables within an array.

Pointers and Arrays

Pointers and arrays are very closely related. They are often used in conjunction with each other. Let's take a look at their relationship:

```
char strarray[50];
char *y;
y = strarray;
```

What happened here? First, an array `strarray` was declared with a size of 50. Then, a pointer, `*y`, was declared. In the third line, the address of the first element of `strarray` is assigned to `y`. We now have two different methods of accessing the tenth element in the array `strarray`:

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```
y = &strarray[9]
or
*(y+9)
```

In many cases, accessing array elements using pointer math is faster than array indexing.

There is a third way of accessing elements in an array: a pointer itself may be indexed. The following also accesses the tenth element of array strarray:
y[9]

String Constants

When a string is generated, it is stored in the program's string table. Therefore, it is possible to assign a pointer to the first element in the string table:

```
#include
using namespace std;
int main()
{
    char *y;
    y = "Playing with pointers!\n";
    cout << y;
    return 0;
}
```

The above program outputs

Playing with pointers!

Arrays and Pointer Comparisons

The following program illustrates one use for pointer comparisons within arrays. The two pointers, beginning and ending, are used to determine if the array is full. When the array is full, the program outputs the elements within the array:

```
#include
using namespace std;
int main()
{
    int numarray[15];
    int *beginning, *ending;
    beginning = numarray; //points beginning to the first element
    ending = &numarray[14]; // points ending to the last element
    while (beginning != ending) {
        cout << "Enter a number: ";
```

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```
cin *beginning;
beginning++;
}
beginning = numarray; // resets beginning to the first element
while (beginning != ending) {
    cout << *beginning << ' ';
    beginning++;
}
return 0;
}
```

Like other variables, several pointers can be grouped into an array. The following declares an array of 10 integer pointer elements:

```
int *a[10];
```

We can then assign the address of an integer variable, *z*, to the fourth element of the array:

```
int z;
```

```
a[3] = &z;
```

Then, to access the value of *z*, you can use:

```
*a[3]
```

Common Pointer Problems

Pointers are not simple elements within a program. Pointers can cause bugs within a program that are hard to detect. Let's now look at some common problems with pointers and how they can be avoided.

Uninitialized Pointers

Take a look at the following program. Do not compile it; it is wrong! The pointer fails to point where we want it to point. An uninitialized pointer points to an unspecified place in the computer's memory:

```
int main()
{
    int a, *b;
    a = 5;
    *b = a;
    return 0;
}
```

In this program, *b* points to an unknown address. We don't know where the value of *a* has been written because we did not access *&a*. If this were a large program, it would be likely that *b* points to a section of code or data, which would cause the program to freeze.

Important: Always make sure a pointer is pointing to a valid memory address before using it.

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Invalid Pointer Comparisons

Remember our sample program using pointers to point to the beginning and end of an array? We were able to successfully use pointer comparisons within that program because the pointers were used within a single array. Invalid pointer comparisons occur when each of the two pointers points to addresses found within different arrays. Trying to use an invalid pointer comparison can lead to the overload of an array or other problems.

Forgetting to Reset a Pointer

Let's look at the program we just mentioned above. This time, we will remove the line resetting beginning to the first element in the array:

```
#include
using namespace std;
int main()
{
    int numarray[15];
    int *beginning, *ending;
    beginning = numarray; //points beginning to the first element
    ending = &numarray[14]; // points ending to the last element
    while (beginning != ending)
    {
        cout << "Enter a number: ";
        cin *beginning;
        beginning++;
    }
    while (beginning != ending)
    {
        cout << *beginning << ' ';
        beginning++;
    }
    return 0;
}
```

What will this program output now? Nothing! The key to avoiding problems with pointers is to know, at all times, where your pointers are pointing!

Calling Functions With Pointers

There are two methods of calling a function using a pointer as the argument. Within both of these methods, it is necessary to declare the parameter as a specific pointer type. Take a look at the following programs to understand the different methods of using pointers as arguments. Both set the value of a to 623 and output that value.

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//Sample program 1: passing an actual pointer variable.

```
#include
using namespace std;
void f1(int *p);
int main()
{
    int a;
    int *b;
    b = &a;
    f1(b);
    cout << a;
    return 0;
}
void f1(int *p)
{
    *p = 623;
}
```

The next program doesn't pass an actual pointer, only the address of the variable a:

//Sample program 2: passing the address of a variable.

```
#include
using namespace std;
void f1(int *p);
int main()
{
    int a;
    f1(&a);
    cout << a;
    return 0;
}
void f1(int *p)
{
    *p = 623;
}
```

Calling a function with a pointer argument allows the function to modify the value of the variable. This can be good, but it can also be dangerous. Be careful that you don't modify variables by accident!

Reference Parameters

C++ allows you to pass arguments using the call-by-reference method. This method does not require the use of pointers. Instead, we use a reference parameter. When you use a reference parameter, the address of an argument, not the value, is automatically passed to the function. Let's revisit our cubing program from Lesson 4. This time, we'll add a reference parameter:

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```
#include
using namespace std;
void cubenum(int &x);
int main()
{
    int y;
    cout << "Enter an integer to be cubed: ";
    cin >> y;
    cubenum(y);
    cout << "The cube is " << y << '!';
    return 0;
}
void cubenum(int &x)
{
    x = (x)*(x)*(x);
}
```

As you can see, this method is less complicated than passing an argument with a pointer. You don't have to remember to pass the address of the argument; this is done for you automatically.

Returning References

Instead of returning an actual value, a reference to a value can be returned. Important uses for this will be presented later in this course. We will study the "how-to" in this section and the uses in subsequent lessons.

The following is a simple example of returning a reference. You will see that one advantage of this method is its ability to use a function on the left side of an assignment statement:

```
#include
using namespace std;
int &f1();
int num1 = 10;
int main()
{
    int num2;
    cout << f1() << '\n';
    num2 = f1();
    cout << num2 << '\n';
    f1() = 5;
    cout << f1() << '\n';
    return 0;
}
int &f1()
{
    return num1;
}
```

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The output for this program will look like this:

```
10
10
5
```

Bounded Arrays

One advantage to returning a reference, rather than a value, is that you can create bounded arrays without fear of overloading an array. Study the following program. It creates a safe array of five integers that cannot become overloaded:

```
#include
using namespace std;
int &enter(int j);
int get(int j);
int a5[5];
int problem = -1;
int main()
{
    enter(0) = 50;
    enter(1) = 55;
    enter(2) = 60;
    enter(3) = 65;
    enter(4) = 70;
    cout << get(0) << '\n';
    cout << get(1) << '\n';
    cout << get(2) << '\n';
    cout << get(3) << '\n';
    cout << get(4) << '\n';
    enter(10) = 75;
    cout << get(6);
    return 0;
}
int &enter(int j)
{
    if (j=0 && j<5)
        return a5[j];
    else {
        cout << "Out of bounds!\n";
        return problem;
    }
}
int get(int j)
{
    if(j=0 && j<5)    return a5[j];    else {    cout << "Out of bounds!\n";
        return problem;
    }
}}
```

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The output for this program would look like this:

```
50
55
60
65
70
Out of bounds!
Out of bounds!
75
```

Notice that the last `cout <<` statement shows the number 75. This is because on the `enter(75)` function, `problem` is the return and therefore the values of 75 is assigned to it instead of -1. Therefore when the `cout << get(6)` is called it does not show the array value and instead *trAnsfers* to the `else` clause, which returns `problem` -- which was previously set to 75.

@-INTERVIEW

Compilers

Question - How does a language compiler work? For example, what is the mechanism behind the compiling process of a program in a specific language?

The question was about compilers, so I will explain how a compiler works, rather than the process of converting a source program into an executable program. The first question involves only a compiler, while in the second process, a compiler is only one of the programs involved

A compiler for a language generally has several different stages as it processes the input These are:

1. Lexical analysis
2. Syntactical analysis
3. Semantical analysis
4. Intermediate code generation
5. Code optimization
6. Code generation

Most of these stages occur during a single pass or reading of the source files. In other words, for example, the preprocessing stage is usually reads only slightly ahead of the lexical analysis stage, which is usually one word ahead of the Syntactical analysis stage

1) Preprocessing during the preprocessing stage, comments, macros, and directives are processed. Comments are removed from the source file. This greatly simplifies the later stage. If the language supports macros, the macros are replaced with the equivalent text.

For example, C and C++ support macros using the #define directive. So if a macro were defined for pi as

```
#define PI 3.1415927
```

Any time the preprocessor encountered the word PI, it would replace PI with 3.1415927

and process the resulting text.

The preprocessor also handles preprocessor directives. These are most often include statements. In C and C++, an include statement looks like either:

```
#include
```

```
#include "file"
```

These lines are replaced by the actual file and the resulting text processed.

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The preprocessor may also replace special strings with other characters. In C and C++, the preprocessor recognizes the \ character as an escape code, and will replace the escape sequence with a special character. For example \t is the escape code for a tab, so \t would be replaced at this stage with a tab character.

2) Lexical analysis is the process of breaking down the source files into key words, constants, identifiers, operators and other simple tokens. A token is the smallest piece of text that the language defines.

A. Key word are words the language defines, and which always have specific meaning in the language. In C and C++ some of these key words are:

if
else
int
char
do
while
for
struct
return

B. Constants are the literal valued items that the language can recognize
Often these are numbers, strings, and characters:

i. Numbers are the types of numbers that may be used in ex-pressions: 3.14, 5, 12, 0. But, usually negative numbers (-17) are processes as an operator (-) and a number (17)

ii. Strings are text items the language can recognize. In C or C++ a string is enclosed
by double quotes: "This is a string"

iii. Characters are single letters. In C or C++, a character is enclosed by single quotes 'c'

C. Identifiers are names the programmer has given to something. These include variables, functions, classes, enumerations, etc. Each language has rules for specifying how these names can be written

D. Operators are the mathematical, logical, and other operators that the language can recognize. Each language generally has the standard operators +, -, *, /, and often defines many other operators as well. For example some of the additional C and C++ define are:

% modulo
-- decrement
++ increment

E. Other tokens are things not covered by any of the above items. Often these will produce errors, but depending on the compiler, things like { () } may be valid in the language, but not treated as a key word or operator.

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3. Syntactical analysis is the process of combining the tokens into well-formed expressions, statements, and programs. Each language has specific rules about the structure of a program--called the grammar or syntax. Just like English grammar, it specifies how things may be put together. In English, a simple sentence is: subject, verb, predicate. In C or C++ an if statement is:

```
if ( ex-expression ) statement
```

The syntactical analysis checks that the syntax is correct, but doesn't enforce that it makes sense. In English, a subject could be: Pants, the verb: are, the predicate: a kind of car. This would yield: Pants are a kind of car. Which is a sentence, but doesn't make much sense.

In C or C++, a constant can be used in an expression: so the expression:
float x = "This is red"++

Is syntactically valid, but doesn't make sense because a float number can not have string assigned to it, and a string can not be incremented.

4. Semantic analysis is the process of examining the types and values of the statements used to make sure they make sense. During the semantic analysis, the types, values, and other required information about statements are recorded, checked, and trAnsformed as appropriate to make sure the program makes sense.

For C/C++ in the line:

```
float x = "This is red"++
```

The semantic analysis would reveal the types do not match and can not be made to match, so the statement would be rejected and an error reported.

While in the statement:

```
float y = 5 + 3.0;
```

The semantical analysis would reveal that 5 is an integer, and 3.0 is a double, and also that the rules for the language allow 5 to be converted to a double, so the addition could be done, so the expression would then be trAnsformed to a double and the addition performed. Then, the compiler would recognize y as a float, and perform another conversion from the double 8.0 to a float and process the assignment.

5. Intermediate code generation Depending on the compiler, this step may be skipped, and instead the program may be translated directly into the target language (usually machine object code). If this step is implemented, the compiler designers also design a machine independent language of their own that is close to machine language and easily translated into machine language for any number of different computers.

The purpose of this step is to allow the compiler writers to support different target computers and different languages with a minimum of effort. The part of the compiler which deals with processing the source files, analyzing the language and generating the intermediate code is called the

front end, while the process of optimizing and converting the intermediate code into the target language is called the back end.

6. Code optimization

During this process the code generated is analyzed and improved for efficiency. The compiler analyzes the code to see if improvements can be made to the intermediate code that couldn't be made earlier. For example, some languages like Pascal do not allow pointers, while all machine languages do. When accessing arrays, it is more efficient to use pointers, so the code optimizer may detect this case and internally use pointers.

7. Code generation

Finally, after the intermediate code has been generated and optimized, the compiler will generate code for the specific target language. Almost always this is machine code for a particular target machine.

Also, it is usually not the final machine code, but is instead object code, which contains all the instructions, but not all of the final memory addresses have been determined.

A subsequent program, called a linker is used to combine several different object code files into the final executable program.

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RDBMS Concepts

1. *What is database?*

A database is a logically coherent collection of data with some inherent meaning, representing some aspect of real world and which is designed, built and populated with data for a specific purpose.

2. *What is DBMS?*

It is a collection of programs that enables user to create and maintain a database. In other words it is general-purpose software that provides the users with the processes of *defining*, *constructing* and *manipulating* the database for various applications.

3. *What is a Database system?*

The database and DBMS software together is called as Database system.

4. *Advantages of DBMS?*

- Redundancy is controlled.
- Unauthorised access is restricted.
- Providing multiple user interfaces.
- Enforcing integrity constraints.
- Providing backup and recovery.

5. *Disadvantage in File Processing System?*

- Data redundancy & inconsistency.
- Difficult in accessing data.
- Data isolation.
- Data integrity.
- Concurrent access is not possible.
- Security Problems.

6. *Describe the three levels of data abstraction?*

The are three levels of abstraction:

- *Physical level*: The lowest level of abstraction describes how data are stored.
- *Logical level*: The next higher level of abstraction, describes what data are stored in database and what relationship among those data.
- *View level*: The highest level of abstraction describes only part of entire database.

7. *Define the "integrity rules"*

There are two Integrity rules.

- *Entity Integrity*: States that "Primary key cannot have NULL value"
- *Referential Integrity*: States that "Foreign Key can be either a NULL value or should be Primary Key value of other relation.

8. *What is extension and intension?*

Extension -

It is the number of tuples present in a table at any instance. This is time dependent.

Intension -

It is a constant value that gives the name, structure of table and the constraints laid on it.

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9. What is System R? What are its two major subsystems?

System R was designed and developed over a period of 1974-79 at IBM San Jose Research Center. It is a prototype and its purpose was to demonstrate that it is possible to build a Relational System that can be used in a real life environment to solve real life problems, with performance at least comparable to that of existing system.

Its two subsystems are

- Research Storage
- System Relational Data System.

10. How is the data structure of System R different from the relational structure?

Unlike Relational systems in System R

- Domains are not supported
- Enforcement of candidate key uniqueness is optional
- Enforcement of entity integrity is optional
- Referential integrity is not enforced

11. What is Data Independence?

Data independence means that “the application is independent of the storage structure and access strategy of data”. In other words, The ability to modify the schema definition in one level should not affect the schema definition in the next higher level.

Two types of Data Independence:

- Physical Data Independence: Modification in physical level should not affect the logical level.
- Logical Data Independence: Modification in logical level should affect the view level.

NOTE: Logical Data Independence is more difficult to achieve

12. What is a view? How it is related to data independence?

A view may be thought of as a virtual table, that is, a table that does not really exist in its own right but is instead derived from one or more underlying base table. In other words, there is no stored file that directly represents the view instead a definition of view is stored in data dictionary.

Growth and restructuring of base tables is not reflected in views. Thus the view can insulate users from the effects of restructuring and growth in the database. Hence accounts for logical data independence.

13. What is Data Model?

A collection of conceptual tools for describing data, data relationships data semantics and constraints.

14. What is E-R model?

This data model is based on real world that consists of basic objects called entities and of relationship among these objects. Entities are described in a database by a set of attributes.

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15. What is Object Oriented model?

This model is based on collection of objects. An object contains values stored in instance variables with in the object. An object also contains bodies of code that operate on the object. These bodies of code are called methods. Objects that contain same types of values and the same methods are grouped together into classes.

16. What is an Entity?

It is a 'thing' in the real world with an independent existence.

17. What is an Entity type?

It is a collection (set) of entities that have same attributes.

18. What is an Entity set?

It is a collection of all entities of particular entity type in the database.

19. What is an Extension of entity type?

The collections of entities of a particular entity type are grouped together into an entity set.

20. What is Weak Entity set?

An entity set may not have sufficient attributes to form a primary key, and its primary key compromises of its partial key and primary key of its parent entity, then it is said to be Weak Entity set.

21. What is an attribute?

It is a particular property, which describes the entity.

22. What is a Relation Schema and a Relation?

A relation Schema denoted by $R(A_1, A_2, \dots, A_n)$ is made up of the relation name R and the list of attributes A_i that it contains. A relation is defined as a set of tuples. Let r be the relation which contains set tuples $(t_1, t_2, t_3, \dots, t_n)$. Each tuple is an ordered list of n -values $t=(v_1, v_2, \dots, v_n)$.

23. What is degree of a Relation?

It is the number of attribute of its relation schema.

24. What is Relationship?

It is an association among two or more entities.

25. What is Relationship set?

The collection (or set) of similar relationships.

26. What is Relationship type?

Relationship type defines a set of associations or a relationship set among a given set of entity types.

27. What is degree of Relationship type?

It is the number of entity type participating.

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25. What is DDL (Data Definition Language)?

A data base schema is specifies by a set of definitions expressed by a special language called DDL.

26. What is VDL (View Definition Language)?

It specifies user views and their mappings to the conceptual schema.

27. What is SDL (Storage Definition Language)?

This language is to specify the internal schema. This language may specify the mapping between two schemas.

28. What is Data Storage - Definition Language?

The storage structures and access methods used by database system are specified by a set of definition in a special type of DDL called data storage-definition language.

29. What is DML (Data Manipulation Language)?

This language that enable user to access or manipulate data as organised by appropriate data model.

- *Procedural DML or Low level:* DML requires a user to specify what data are needed and how to get those data.
- *Non-Procedural DML or High level:* DML requires a user to specify what data are needed without specifying how to get those data.

31. What is DML Compiler?

It trAnslates DML statements in a query language into low-level instruction that the query evaluation engine can understand.

32. What is Query evaluation engine?

It executes low-level instruction generated by compiler.

33. What is DDL Interpreter?

It interprets DDL statements and record them in tables containing metadata.

34. What is Record-at-a-time?

The Low level or Procedural DML can specify and retrieve each record from a set of records. This retrieve of a record is said to be Record-at-a-time.

35. What is Set-at-a-time or Set-oriented?

The High level or Non-procedural DML can specify and retrieve many records in a single DML statement. This retrieve of a record is said to be Set-at-a-time or Set-oriented.

36. What is Relational Algebra?

It is procedural query language. It consists of a set of operations that take one or two relations as input and produce a new relation.

37. What is Relational Calculus?

It is an applied predicate calculus specifically tailored for relational databases proposed by E.F. Codd. E.g. of languages based on it are DSL ALPHA, QUEL.

38. How does Tuple-oriented relational calculus differ from domain-oriented relational calculus

The tuple-oriented calculus uses a tuple variables i.e., variable whose only permitted values are tuples of that relation. E.g. QUEL

The domain-oriented calculus has domain variables i.e., variables that range over the underlying domains instead of over relation. E.g. ILL, DEDUCE.

39. What is normalization?

It is a process of analysing the given relation schemas based on their Functional Dependencies (FDs) and primary key to achieve the properties

- Minimizing redundancy
- Minimizing insertion, deletion and update anomalies.

40. What is Functional Dependency?

A Functional dependency is denoted by $X \twoheadrightarrow Y$ between two sets of attributes X and Y that are subsets of R specifies a constraint on the possible tuple that can form a relation state r of R. The constraint is for any two tuples t1 and t2 in r if $t1[X] = t2[X]$ then they have $t1[Y] = t2[Y]$. This means the value of X component of a tuple uniquely determines the value of component Y.

41. When is a functional dependency F said to be minimal?

- Every dependency in F has a single attribute for its right hand side.
- We cannot replace any dependency $X \twoheadrightarrow A$ in F with a dependency $Y \twoheadrightarrow A$ where Y is a proper subset of X and still have a set of dependency that is equivalent to F.
- We cannot remove any dependency from F and still have set of dependency that is equivalent to F.

42. What is Multivalued dependency?

Multivalued dependency denoted by $X \twoheadrightarrow\!\!\!\rightarrow Y$ specified on relation schema R, where X and Y are both subsets of R, specifies the following constraint on any relation r of R: if two tuples t1 and t2 exist in r such that $t1[X] = t2[X]$ then t3 and t4 should also exist in r with the following properties

- $t3[X] = t4[X] = t1[X] = t2[X]$
- $t3[Y] = t1[Y]$ and $t4[Y] = t2[Y]$
- $t3[Z] = t2[Z]$ and $t4[Z] = t1[Z]$
where $[Z] = (R - (X \cup Y))$

43. What is Lossless join property?

It guarantees that the spurious tuple generation does not occur with respect to relation schemas after decomposition.

44. What is 1 NF (Normal Form)?

The domain of attribute must include only atomic (simple, indivisible) values.

45. What is Fully Functional dependency?

It is based on concept of full functional dependency. A functional dependency $X \rightarrow Y$ is full functional dependency if removal of any attribute A from X means that the dependency does not hold any more.

46. What is 2NF?

A relation schema R is in 2NF if it is in 1NF and every non-prime attribute A in R is fully functionally dependent on primary key.

47. What is 3NF?

A relation schema R is in 3NF if it is in 2NF and for every FD $X \rightarrow A$ either of the following is true

- X is a Super-key of R.
- A is a prime attribute of R.

In other words, if every non prime attribute is non-transitively dependent on primary key.

48. What is BCNF (Boyce-Codd Normal Form)?

A relation schema R is in BCNF if it is in 3NF and satisfies an additional constraint that for every FD $X \rightarrow A$, X must be a candidate key.

49. What is 4NF?

A relation schema R is said to be in 4NF if for every Multivalued dependency $X \twoheadrightarrow Y$ that holds over R, one of following is true

- X is subset or equal to (or) $XY = R$.
- X is a super key.

50. What is 5NF?

A Relation schema R is said to be 5NF if for every join dependency $\{R_1, R_2, \dots, R_n\}$ that holds R, one the following is true

- $R_i = R$ for some i.
- The join dependency is implied by the set of FD, over R in which the left side is key of R.

51. What is Domain-Key Normal Form?

A relation is said to be in DKNF if all constraints and dependencies that should hold on the the constraint can be enforced by simply enforcing the domain constraint and key constraint on the relation.

52. What are partial, alternate,, artificial, compound and natural key?

Partial Key:

It is a set of attributes that can uniquely identify weak entities and that are related to same owner entity. It is sometime called as Discriminator.

Alternate Key:

All Candidate Keys excluding the Primary Key are known as Alternate Keys.

Artificial Key:

If no obvious key, either stand alone or compound is available, then the last resort is to simply create a key, by assigning a unique number to each record or occurrence. Then this is known as developing an artificial key.

Compound Key:

If no single data element uniquely identifies occurrences within a construct, then combining multiple elements to create a unique identifier for the construct is known as creating a compound key.

Natural Key:

When one of the data elements stored within a construct is utilized as the primary key, then it is called the natural key.

53. What is indexing and what are the different kinds of indexing?

Indexing is a technique for determining how quickly specific data can be found.

Types:

- Binary search style indexing
- B-Tree indexing
- Inverted list indexing
- Memory resident table
- Table indexing

54. What is system catalog or catalog relation? How is better known as?

A RDBMS maintains a description of all the data that it contains, information about every relation and index that it contains. This information is stored in a collection of relations maintained by the system called metadata. It is also called data dictionary.

55. What is meant by query optimization?

The phase that identifies an efficient execution plan for evaluating a query that has the least estimated cost is referred to as query optimization.

56. What is join dependency and inclusion dependency?

Join Dependency:

A Join dependency is generalization of Multivalued dependency. A JD $\{R_1, R_2, \dots, R_n\}$ is said to hold over a relation R if $R_1, R_2, R_3, \dots, R_n$ is a lossless-join decomposition of R . There is no set of sound and complete inference rules for JD.

Inclusion Dependency:

An Inclusion Dependency is a statement of the form that some columns of a relation are contained in other columns. A foreign key constraint is an example of inclusion dependency.

57. What is durability in DBMS?

Once the DBMS informs the user that a transaction has successfully completed, its effects should persist even if the system crashes before all its changes are reflected on disk. This property is called durability.

58. What do you mean by atomicity and aggregation?

Atomicity:

Either all actions are carried out or none are. Users should not have to worry about the effect of incomplete transactions. DBMS ensures this by undoing the actions of incomplete transactions.

Aggregation:

A concept which is used to model a relationship between a collection of entities and relationships. It is used when we need to express a relationship among relationships.

59. What is a Phantom Deadlock?

In distributed deadlock detection, the delay in propagating local information might cause the deadlock detection algorithms to identify deadlocks that do not really exist. Such situations are called phantom deadlocks and they lead to unnecessary aborts.

60. What is a checkpoint and When does it occur?

A Checkpoint is like a snapshot of the DBMS state. By taking checkpoints, the DBMS can reduce the amount of work to be done during restart in the event of subsequent crashes.

61. What are the different phases of transaction?

Different phases are

- Analysis phase
- Redo Phase
- Undo phase

62. What do you mean by flat file database?

It is a database in which there are no programs or user access languages. It has no cross-file capabilities but is user-friendly and provides user-interface management.

63. What is "transparent DBMS"?

It is one, which keeps its Physical Structure hidden from user.

64. Brief theory of Network, Hierarchical schemas and their properties

Network schema uses a graph data structure to organize records example for such a database management system is CTCS while a hierarchical schema uses a tree data structure example for such a system is IMS.

65. What is a query?

A query with respect to DBMS relates to user commands that are used to interact with a data base. The query language can be classified into data definition language and data manipulation language.

66. What do you mean by Correlated subquery?

Subqueries, or nested queries, are used to bring back a set of rows to be used by the parent query. Depending on how the subquery is written, it can be executed once for the parent query or it can be executed once for each row returned by the parent query. If the subquery is executed for each row of the parent, this is called a *correlated subquery*.

A correlated subquery can be easily identified if it contains any references to the parent subquery columns in its WHERE clause. Columns from the subquery cannot be referenced anywhere else in the parent query. The following example demonstrates a non-correlated subquery.

E.g. Select * From CUST Where '10/03/1990' IN (Select ODATE From ORDER Where CUST.CNUM = ORDER.CNUM)

67. What are the primitive operations common to all record management systems?

Addition, deletion and modification.

68. Name the buffer in which all the commands that are typed in are stored

'Edit' Buffer

69. What are the unary operations in Relational Algebra?

PROJECTION and SELECTION.

70. Are the resulting relations of PRODUCT and JOIN operation the same?

No.

PRODUCT: Concatenation of every row in one relation with every row in another.

JOIN: Concatenation of rows from one relation and related rows from another.

71. What is RDBMS KERNEL?

Two important pieces of RDBMS architecture are the kernel, which is the software, and the data dictionary, which consists of the system-level data structures used by the kernel to manage the database

You might think of an RDBMS as an operating system (or set of subsystems), designed specifically for controlling data access; its primary functions are storing, retrieving, and securing data. An RDBMS maintains its own list of authorized users and their associated privileges; manages memory caches and paging; controls locking for concurrent resource usage; dispatches and schedules user requests; and manages space usage within its table-space structures

72. Name the sub-systems of a RDBMS

I/O, Security, Language Processing, Process Control, Storage Management, Logging and Recovery, Distribution Control, Transaction Control, Memory Management, Lock Management

73. Which part of the RDBMS takes care of the data dictionary? How

Data dictionary is a set of tables and database objects that is stored in a special area of the database and maintained exclusively by the kernel.

74. What is the job of the information stored in data-dictionary?

The information in the data dictionary validates the existence of the objects, provides access to them, and maps the actual physical storage location.

75. Not only RDBMS takes care of locating data it also _____

determines an optimal access path to store or retrieve the data

76. How do you communicate with an RDBMS?

You communicate with an RDBMS using Structured Query Language (SQL)

77. Define SQL and state the differences between SQL and other conventional programming Languages

SQL is a nonprocedural language that is designed specifically for data access operations on normalized relational database structures. The primary difference between SQL and other conventional programming languages is that SQL statements specify what data operations should be performed rather than how to perform them.

78. Name the three major set of files on disk that compose a database in Oracle

There are three major sets of files on disk that compose a database. All the files are binary. These are

- Database files
- Control files
- Redo logs

The most important of these are the database files where the actual data resides. The control files and the redo logs support the functioning of the architecture itself.

All three sets of files must be present, open, and available to Oracle for any data on the database to be useable. Without these files, you cannot access the database, and the database administrator might have to recover some or all of the database using a backup, if there is one.

79. What is an Oracle Instance?

The Oracle system processes, also known as Oracle background processes, provide functions for the user processes—functions that would otherwise be done by the user processes themselves

Oracle database-wide system memory is known as the SGA, the *system global area* or *shared global area*. The data and control structures in the SGA are shareable, and all the Oracle background processes and user processes can use them.

The combination of the SGA and the Oracle background processes is known as an *Oracle instance*

80. What are the four Oracle system processes that must always be up and running for the database to be useable

The four Oracle system processes that must always be up and running for the database to be useable include *DBWR* (Database Writer), *LGWR* (Log Writer), *SMON* (System Monitor), and *PMON* (Process Monitor).

81. What are database files, control files and log files. How many of these files should a database have at least? Why?

Database Files

The database files hold the actual data and are typically the largest in size. Depending on their sizes, the tables (and other objects) for all the user accounts can go in one database file—but that's not an ideal situation because it does not make the database structure very flexible for controlling access to storage for different users, putting the database on different disk drives, or backing up and restoring just part of the database.

You must have at least one database file but usually, more than one files are used. In terms of accessing and using the data in the tables and other objects, the number (or location) of the files is immaterial.

The database files are fixed in size and never grow bigger than the size at which they were created

Control Files

The control files and redo logs support the rest of the architecture.

Any database must have at least one control file, although you typically have more than one to guard against loss. The control file records the name of the database, the date and time it was created, the location of the database and redo logs, and the synchronization information to ensure that all three sets of files are always in step.

Every time you add a new database or redo log file to the database, the information is recorded in the control files.

Redo Logs

Any database must have at least two redo logs. These are the journals for the database; the redo logs record all changes to the user objects or system objects. If any type of failure occurs, the changes recorded in the redo logs can be used to bring the database to a consistent state without losing any committed transactions. In the case of non-data loss failure, Oracle can apply the information in the redo logs automatically without intervention from the DBA.

The redo log files are fixed in size and never grow dynamically from the size at which they were created.

82. What is ROWID?

The ROWID is a unique database-wide physical address for every row on every table. Once assigned (when the row is first inserted into the database), it never changes until the row is deleted or the table is dropped.

The ROWID consists of the following three components, the combination of which uniquely identifies the physical storage location of the row.

- Oracle database file number, which contains the block with the rows
- Oracle block address, which contains the row
- The row within the block (because each block can hold many rows)

The ROWID is used internally in indexes as a quick means of retrieving rows with a particular key value. Application developers also use it in SQL statements as a quick way to access a row once they know the ROWID

83. What is Oracle Block? Can two Oracle Blocks have the same address?

Oracle "formats" the database files into a number of Oracle blocks when they are first created—making it easier for the RDBMS software to manage the files and easier to read data into the memory areas.

The block size should be a multiple of the operating system block size. Regardless of the block size, the entire block is not available for holding data; Oracle takes up some space to manage the contents of the block. This block header has a minimum size, but it can grow.

These Oracle blocks are the smallest unit of storage. Increasing the Oracle block size can improve performance, but it should be done only when the database is first created.

Each Oracle block is numbered sequentially for each database file starting at 1. Two blocks can have the same block address if they are in different database files.

84. What is database Trigger?

A database trigger is a PL/SQL block that can be defined to automatically execute for insert, update, and delete statements against a table. The trigger can be defined to execute once for the entire statement or once for every row that is inserted, updated, or deleted. For any one table, there are twelve events for which you can define database triggers. A database trigger can call database procedures that are also written in PL/SQL.

85. Name two utilities that Oracle provides, which are used for backup and recovery.

Along with the RDBMS software, Oracle provides two utilities that you can use to back up and restore the database. These utilities are *Export* and *Import*.

The *Export utility* dumps the definitions and data for the specified part of the database to an operating system binary file. The *Import utility* reads the file produced by an export, recreates the definitions of objects, and inserts the data.

If Export and Import are used as a means of backing up and recovering the database, all the changes made to the database cannot be recovered since the export was performed. The best you can do is recover the database to the time when the export was last performed.

86. What are stored-procedures? And what are the advantages of using them.

Stored procedures are database objects that perform a user defined operation. A stored procedure can have a set of compound SQL statements. A stored procedure executes the SQL commands and returns the result to the client. Stored procedures are used to reduce network traffic.

87. How are exceptions handled in PL/SQL? Give some of the internal exceptions' name

PL/SQL exception handling is a mechanism for dealing with run-time errors encountered during procedure execution. Use of this mechanism enables execution to continue if the error is not severe enough to cause procedure termination.

The exception handler must be defined within a subprogram specification. Errors cause the program to raise an exception with a transfer of control to the exception-handler block. After the exception handler executes, control returns to the block in which the handler was defined. If there are no more executable statements in the block, control returns to the caller.

User-Defined Exceptions

PL/SQL enables the user to define exception handlers in the declarations area of subprogram specifications. User accomplishes this by naming an exception as in the following example:

```
ot_failure EXCEPTION;
```

In this case, the exception name is `ot_failure`. Code associated with this handler is written in the EXCEPTION specification area as follows:

```
EXCEPTION  
when OT_FAILURE then
```

```
out_status_code := g_out_status_code;
out_msg         := g_out_msg;
```

The following is an example of a subprogram exception:

```
EXCEPTION
when NO_DATA_FOUND then
g_out_status_code := 'FAIL';
RAISE ot_failure;
```

Within this exception is the RAISE statement that transfers control back to the ot_failure exception handler. This technique of raising the exception is used to invoke all user-defined exceptions.

System-Defined Exceptions

Exceptions internal to PL/SQL are raised automatically upon error. NO_DATA_FOUND is a system-defined exception. Table below gives a complete list of internal exceptions.

PL/SQL internal exceptions.

<i>Exception Name</i>	<i>Oracle Error</i>
CURSOR_ALREADY_OPEN	ORA-06511
DUP_VAL_ON_INDEX	ORA-00001
INVALID_CURSOR	ORA-01001
INVALID_NUMBER	ORA-01722
LOGIN_DENIED	ORA-01017
NO_DATA_FOUND	ORA-01403
NOT_LOGGED_ON	ORA-01012
PROGRAM_ERROR	ORA-06501
STORAGE_ERROR	ORA-06500
TIMEOUT_ON_RESOURCE	ORA-00051
TOO_MANY_ROWS	ORA-01422
TRANSACTION_BACKED_OUT	ORA-00061
VALUE_ERROR	ORA-06502
ZERO_DIVIDE	ORA-01476

In addition to this list of exceptions, there is a catch-all exception named *OTHERS* that traps all errors for which specific error handling has not been established.

88. Does PL/SQL support "overloading"? Explain

The concept of *overloading* in PL/SQL relates to the idea that you can define procedures and functions with the same name. PL/SQL does not look only at the referenced name, however, to resolve a procedure or function call. The count and data types of formal parameters are also considered.

PL/SQL also attempts to resolve any procedure or function calls in locally defined packages before looking at globally defined packages or internal functions. To further ensure calling the proper procedure, you can use the dot notation. Prefacing a procedure or function name with the package name fully qualifies any procedure or function reference.

89. Tables derived from the ERD

e-INTERVIEW

- a) Are totally unnormalised
- b) Are always in 1NF
- c) Can be further denormalised
- d) May have multi-valued attributes

(b) Are always in 1NF

90. *Spurious tuples may occur due to*

- i. *Bad normalization*
- ii. *Theta joins*
- iii. *Updating tables from join*

- a) i & ii
- b) ii & iii
- c) i & iii
- d) ii & iii

(a) i & iii because theta joins are joins made on keys that are not primary keys.

91. *A B C is a set of attributes. The functional dependency is as follows*

AB - B

AC - C

C - B

- a) is in 1NF
- b) is in 2NF
- c) is in 3NF
- d) is in BCNF

(a) is in 1NF since $(AC)^+ = \{A, B, C\}$ hence AC is the primary key. Since $C \rightarrow B$ is a FD given, where neither C is a Key nor B is a prime attribute, this it is not in 3NF. Further B is not functionally dependent on key AC thus it is not in 2NF. Thus the given FDs is in 1NF.

92. *In mapping of ERD to DFD*

- a) entities in ERD should correspond to an existing entity/store in DFD
- b) entity in DFD is converted to attributes of an entity in ERD
- c) relations in ERD has 1 to 1 correspondence to processes in DFD
- d) relationships in ERD has 1 to 1 correspondence to flows in DFD

(a) entities in ERD should correspond to an existing entity/store in DFD

93. *A dominant entity is the entity*

- a) on the N side in a 1 : N relationship
- b) on the 1 side in a 1 : N relationship
- c) on either side in a 1 : 1 relationship
- d) nothing to do with 1 : 1 or 1 : N relationship

(b) on the 1 side in a 1 : N relationship

94. *Select 'NORTH', CUSTOMER From CUST_DTLS Where REGION = 'N'
Order By*

For Placement

CUSTOMER Union Select 'EAST', CUSTOMER From CUST_DTLS Where REGION = 'E' Order By CUSTOMER

The above is

- a) Not an error
- b) Error - the string in single quotes 'NORTH' and 'SOUTH'
- c) Error - the string should be in double quotes
- d) Error - ORDER BY clause

(d) Error - the ORDER BY clause. Since ORDER BY clause cannot be used in UNIONS

95. What is Storage Manager?

It is a program module that provides the interface between the low-level data stored in database, application programs and queries submitted to the system.

96. What is Buffer Manager?

It is a program module, which is responsible for fetching data from disk storage into main memory and deciding what data to be cache in memory.

97. What is TrAnsaction Manager?

It is a program module, which ensures that database, remains in a consistent state despite system failures and concurrent trAnsaction execution proceeds without conflicting.

98. What is File Manager?

It is a program module, which manages the allocation of space on disk storage and data structure used to represent information stored on a disk.

99. What is Authorization and Integrity manager?

It is the program module, which tests for the satisfaction of integrity constraint and checks the authority of user to access data.

100. What are stand-alone procedures?

Procedures that are not part of a package are known as stand-alone because they independently defined. A good example of a stand-alone procedure is one written in a SQL*Forms application. These types of procedures are not available for reference from other Oracle tools. Another limitation of stand-alone procedures is that they are compiled at run time, which slows execution.

101. What are cursors give different types of cursors.

PL/SQL uses cursors for all database information accesses statements. The language supports the use two types of cursors

- *Implicit*
- *Explicit*

102. What is cold backup and hot backup (in case of Oracle)?

- *Cold Backup:*

It is copying the three sets of files (database files, redo logs, and control file) when the instance is shut down. This is a straight file copy, usually from

the disk directly to tape. You must shut down the instance to guarantee a consistent copy.

If a cold backup is performed, the only option available in the event of data file loss is restoring all the files from the latest backup. All work performed on the database since the last backup is lost.

➤ *Hot Backup:*

Some sites (such as worldwide airline reservations systems) cannot shut down the database while making a backup copy of the files. The cold backup is not an available option.

So different methods of backing up database must be used — the hot backup. Issue a SQL command to indicate to Oracle, on a tablespace-by-tablespace basis, that the files of the tablespace are to be backed up. The users can continue to make full use of the files, including making changes to the data. Once the user has indicated that he/she wants to back up the tablespace files, he/she can use the operating system to copy those files to the desired backup destination.

The database must be running in ARCHIVELOG mode for the hot backup option.

If a data loss failure does occur, the lost database files can be restored using the hot backup and the online and offline redo logs created since the backup was done. The database is restored to the most consistent state without any loss of committed transactions.

103. What are Armstrong rules? How do we say that they are complete and/or sound

The well-known inference rules for FDs

➤ Reflexive rule :

If Y is subset or equal to X then $X \twoheadrightarrow Y$.

➤ Augmentation rule:

If $X \twoheadrightarrow Y$ then $XZ \twoheadrightarrow YZ$.

➤ Transitive rule:

If $\{X \twoheadrightarrow Y, Y \twoheadrightarrow Z\}$ then $X \twoheadrightarrow Z$.

➤ Decomposition rule :

If $X \twoheadrightarrow YZ$ then $X \twoheadrightarrow Y$.

➤ Union or Additive rule:

If $\{X \twoheadrightarrow Y, X \twoheadrightarrow Z\}$ then $X \twoheadrightarrow YZ$.

➤ Pseudo Transitive rule :

If $\{X \twoheadrightarrow Y, WY \twoheadrightarrow Z\}$ then $WX \twoheadrightarrow Z$.

Of these the first three are known as Armstrong Rules. They are sound because it is enough if a set of FDs satisfy these three. They are called complete because using these three rules we can generate the rest all inference rules.

104. How can you find the minimal key of relational schema?

Minimal key is one which can identify each tuple of the given relation schema uniquely. For finding the minimal key it is required to find the closure that is the set of all attributes that are dependent on any given set of attributes under the given set of functional dependency.

Algo. I Determining X^+ , closure for X, given set of FDs F

1. Set $X^+ = X$
2. Set Old $X^+ = X^+$

3. For each FD $Y \rightarrow Z$ in F and if Y belongs to X^+ then add Z to X^+
4. Repeat steps 2 and 3 until $\text{Old } X^+ = X^+$

Algo.II Determining minimal K for relation schema R , given set of FDs F

1. Set K to R that is make K a set of all attributes in R
2. For each attribute A in K
 - a. Compute $(K - A)^+$ with respect to F
 - b. If $(K - A)^+ = R$ then set $K = (K - A)^+$

105. What do you understand by dependency preservation?

Given a relation R and a set of FDs F , dependency preservation states that the closure of the union of the projection of F on each decomposed relation R_i is equal to the closure of F . i.e.,

$$((\Pi_{R_1}(F)) \cup \dots \cup (\Pi_{R_n}(F)))^+ = F^+$$

if decomposition is not dependency preserving, then some dependency is lost in the decomposition.

106. What is meant by Proactive, Retroactive and Simultaneous Update.

Proactive Update:

The updates that are applied to database before it becomes effective in real world .

Retroactive Update:

The updates that are applied to database after it becomes effective in real world .

Simulatneous Update:

The updates that are applied to database at the same time when it becomes effective in real world .

107. What are the different types of JOIN operations?

Equi Join: This is the most common type of join which involves only equality comparisions. The disadvantage in this type of join is that there



INTERVIEW

Data Structure

1. What is data structure?

A data structure is a way of organizing data that considers not only the items stored, but also their relationship to each other. Advance knowledge about the relationship between data items allows designing of efficient algorithms for the manipulation of data.

2. List out the areas in which data structures are applied extensively?

- Compiler Design,
- Operating System,
- Database Management System,
- Statistical analysis package,
- Numerical Analysis,
- Graphics,
- Artificial Intelligence,
- Simulation

3. What are the major data structures used in the following areas : RDBMS, Network data model & Hierarchical data model.

- RDBMS – Array (i.e. Array of structures)
- Network data model – Graph
- Hierarchical data model – Trees

4. If you are using C language to implement the heterogeneous linked list, what pointer type will you use?

The heterogeneous linked list contains different data types in its nodes and we need a link, pointer to connect them. It is not possible to use ordinary pointers for this. So we go for void pointer. Void pointer is capable of storing pointer to any type as it is a generic pointer type

5. Minimum number of queues needed to implement the priority queue?

Two. One queue is used for actual storing of data and another for storing priorities.

6. What is the data structures used to perform recursion?

Stack. Because of its LIFO (Last In First Out) property it remembers its 'caller' so knows whom to return when the function has to return. Recursion makes use of system stack for storing the return addresses of the function calls.

Every recursive function has its equivalent iterative (non-recursive) function. Even when such equivalent iterative procedures are written, explicit stack is to be used.

7. What are the notations used in Evaluation of Arithmetic Expressions using prefix and postfix forms?

Polish and Reverse Polish notations.

For Placement

8. Convert the expression $((A + B) * C - (D - E) ^ (F + G))$ to equivalent Prefix and Postfix notations.

Prefix Notation:

$$^ - * +ABC - DE + FG$$

Postfix Notation:

$$AB + C * DE - - FG + ^$$

9. Sorting is not possible by using which of the following methods?

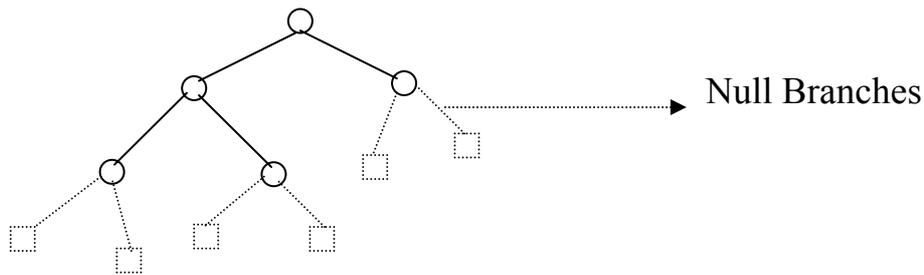
- (a) Insertion
- (b) Selection
- (c) Exchange
- (d) Deletion

Using insertion we can perform insertion sort, using selection we can perform selection sort, using exchange we can perform the bubble sort (and other similar sorting methods). But no sorting method can be done just using deletion.

10. A binary tree with 20 nodes has _____ null branches?

21

Let us take a tree with 5 nodes (n=5)



It will have only 6 (ie,5+1) null branches. In general,

A binary tree with **n** nodes has exactly **n+1** null nodes.

11. What are the methods available in storing sequential files ?

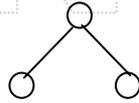
- Straight merging,
- Natural merging,
- Polyphase sort,
- Distribution of Initial runs.

12. How many different trees are possible with 10 nodes ?

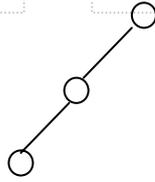
1014

For example, consider a tree with 3 nodes(n=3), it will have the maximum combination of 5 different (ie, $2^3 - 3 = 5$) trees.

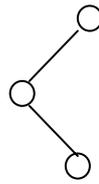
Q-INTERVIEW



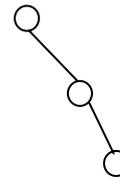
i



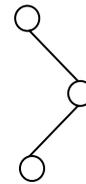
ii



iii



iv



v

In general:

If there are n nodes, there exist 2^{n-1} different trees.

13. List out few of the Application of tree data-structure?

- The manipulation of Arithmetic expression,
- Symbol Table construction,
- Syntax analysis.

14. List out few of the applications that make use of Multilinked Structures?

- Sparse matrix,
- Index generation.

15. In tree construction which is the suitable efficient data structure?

- (a) Array (b) Linked list (c) Stack (d) Queue (e) none

(b) Linked list

16. What is the type of the algorithm used in solving the 8 Queens problem?

Backtracking

17. In an AVL tree, at what condition the balancing is to be done?

If the 'pivotal value' (or the 'Height factor') is greater than 1 or less than -1.

18. What is the bucket size, when the overlapping and collision occur at same time?

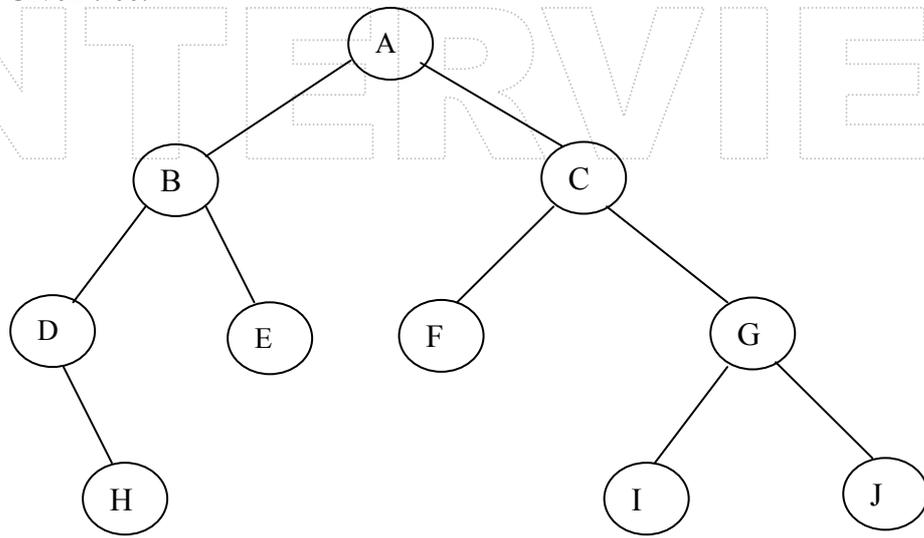
One. If there is only one entry possible in the bucket, when the collision occurs, there is no way to accommodate the colliding value. This results in the overlapping of values.

19. Traverse the given tree using Inorder, Preorder and Postorder traversals.

- Preorder : A B D H E C F G I J
- Postorder : H D E B F I J G C A
- Inorder : D H B E A F C I G J

For Placement

Given tree:



21) There are 8, 15, 13, 14 nodes were there in 4 different trees. Which of them could have formed a full binary tree?

15.

In general: There are $2^n - 1$ nodes in a full binary tree.

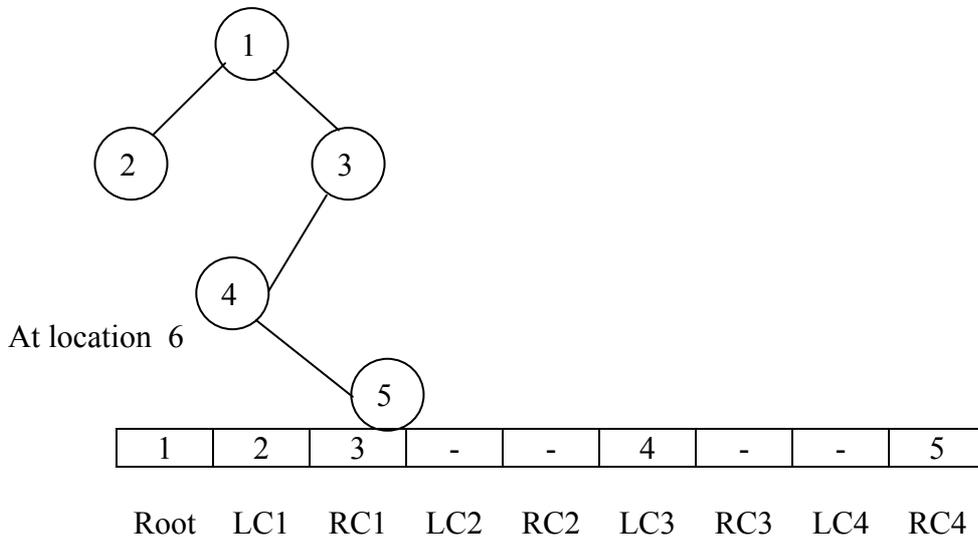
By the method of elimination:

Full binary trees contain odd number of nodes. So there cannot be full binary trees with 8 or 14 nodes, so rejected. With 13 nodes you can form a complete binary tree but not a full binary tree. So the correct **Answer** is 15.

Note:

Full and Complete binary trees are different. All full binary trees are complete binary trees but not vice versa.

20. In the given binary tree, using array you can store the node 4 at which location?



where LCn means Left Child of node n and RCn means Right Child of node n

21. Sort the given values using Quick Sort?

65 70 75 80 85 60 55 50 45

Sorting takes place from the pivot value, which is the first value of the given elements, this is marked bold. The values at the left pointer and right pointer are indicated using ^L and ^R respectively.

65 70^L 75 80 85 60 55 50 45^R

Since pivot is not yet changed the same process is continued after interchanging the values at ^L and ^R positions

65 45 75^L 80 85 60 55 50^R 70

65 45 50 80^L 85 60 55^R 75 70

65 45 50 55 85^L 60^R 80 75 70

65 45 50 55 60^R 85^L 80 75 70

When the L and R pointers cross each other the pivot value is interchanged with the value at right pointer. If the pivot is changed it means that the pivot has occupied its original position in the sorted order (shown in bold italics) and hence two different arrays are formed, one from start of the original array to the pivot position-1 and the other from pivot position+1 to end.

60^L 45 50 55^R **65** 85^L 80 75 70^R

55^L 45 50^R **60** **65** 70^R 80^L 75 **85**

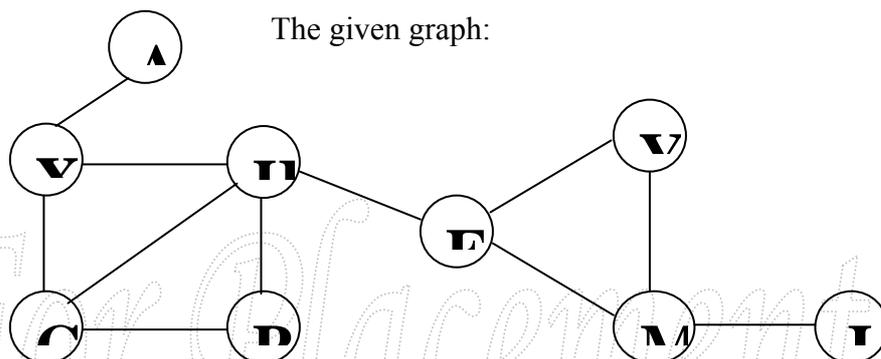
50^L 45^R **55** **60** **65** **70** 80^L 75^R **85**

In the next pass we get the sorted form of the array.

45 50 55 60 65 70 75 80 85

22. For the given graph, draw the DFS and BFS?

The given graph:



@-INTERVIEW

➤ BFS: A X G H P E M Y J

➤ DFS: A X H P E Y M J G

24. Classify the Hashing Functions based on the various methods by which the key value is found.

- Direct method,
- Subtraction method,
- Modulo-Division method,
- Digit-Extraction method,
- Mid-Square method,
- Folding method,
- Pseudo-random method.

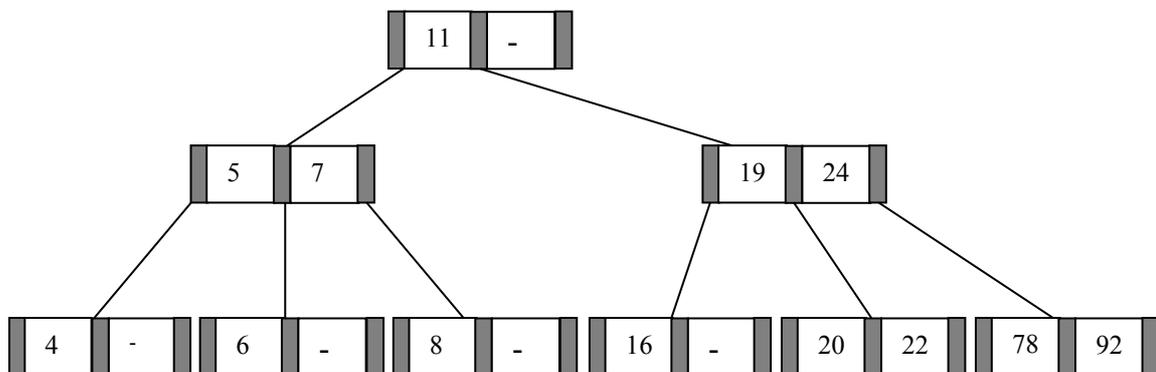
25. What are the types of Collision Resolution Techniques and the methods used in each of the type?

- Open addressing (closed hashing),
The methods used include:
Overflow block,
- Closed addressing (open hashing)
The methods used include:
Linked list,
Binary tree...

26. In RDBMS, what is the efficient data structure used in the internal storage representation?

B+ tree. Because in B+ tree, all the data is stored only in leaf nodes, that makes searching easier. This corresponds to the records that shall be stored in leaf nodes.

27. Draw the B-tree of order 3 created by inserting the following data arriving in sequence – 92 24 6 7 11 8 22 4 5 16 19 20 78



For Placement

28. **Of the following tree structure, which is, efficient considering space and time complexities?**

- (a) Incomplete Binary Tree
- (b) Complete Binary Tree
- (c) Full Binary Tree

(b) Complete Binary Tree.

By the method of elimination:

Full binary tree loses its nature when operations of insertions and deletions are done. For incomplete binary trees, extra storage is required and overhead of NULL node checking takes place. So complete binary tree is the better one since the property of complete binary tree is maintained even after operations like additions and deletions are done on it.

29. **What is a spanning Tree?**

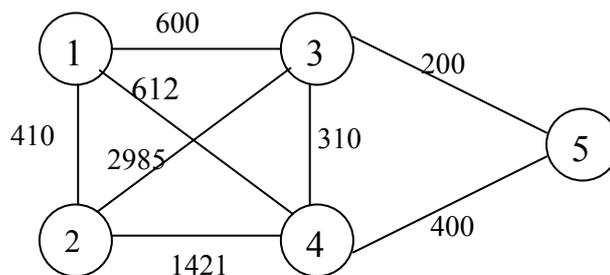
A spanning tree is a tree associated with a network. All the nodes of the graph appear on the tree once. A minimum spanning tree is a spanning tree organized so that the total edge weight between nodes is minimized.

30. **Does the minimum spanning tree of a graph give the shortest distance between any 2 specified nodes?**

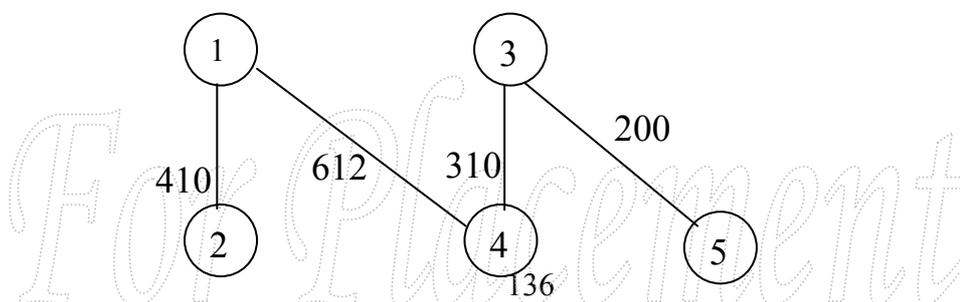
No.

Minimal spanning tree assures that the total weight of the tree is kept at its minimum. But it doesn't mean that the distance between any two nodes involved in the minimum-spanning tree is minimum.

31. **Convert the given graph with weighted edges to minimal spanning tree.**



the equivalent minimal spanning tree is:



31. Which is the simplest file structure?

- (a) Sequential
- (b) Indexed
- (c) Random
- (a) Sequential

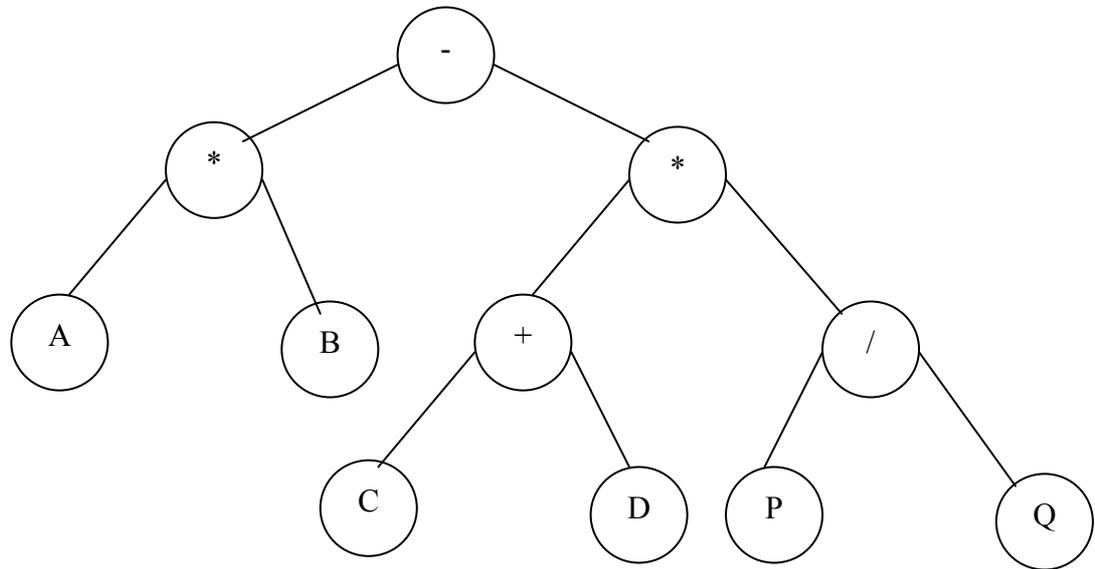
32. Whether Linked List is linear or Non-linear data structure?

According to Access strategies Linked list is a linear one.

According to Storage Linked List is a Non-linear one.

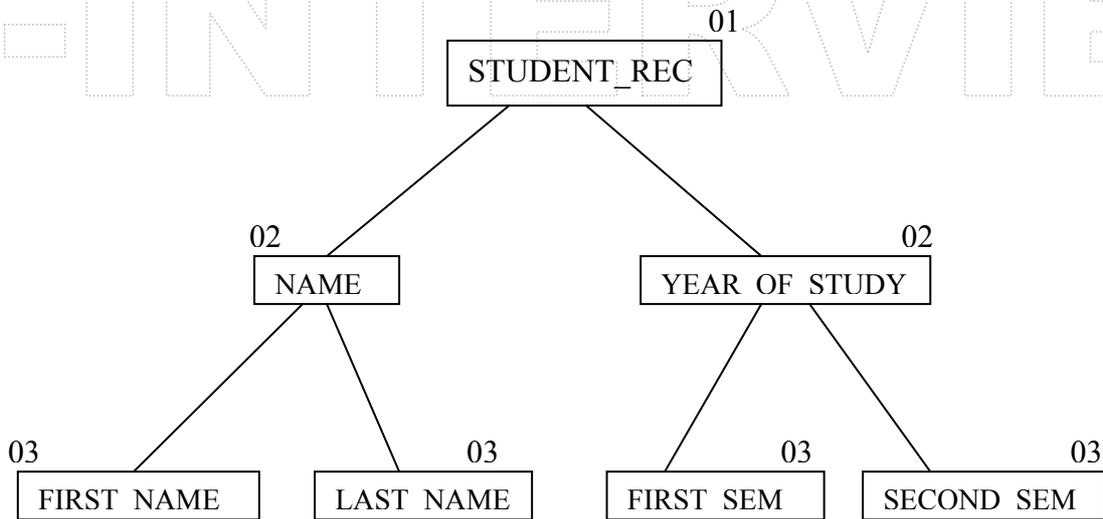
33. Draw a binary Tree for the expression :

$$A * B - (C + D) * (P / Q)$$



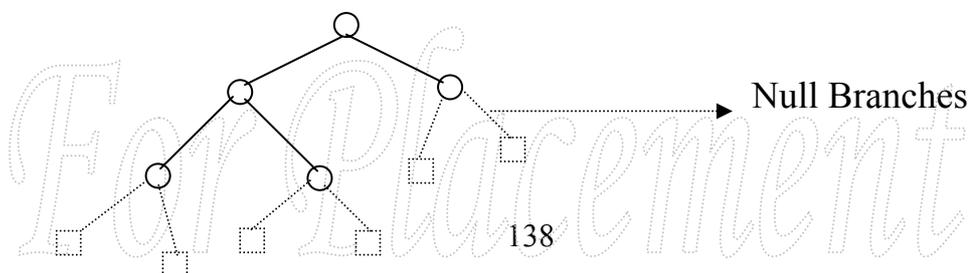
34. For the following COBOL code, draw the Binary tree?

```
01 STUDENT_REC.  
  02 NAME.  
    03 FIRST_NAME PIC X(10).  
    03 LAST_NAME PIC X(10).  
  
  02 YEAR_OF_STUDY.  
    03 FIRST_SEM PIC XX.  
    03 SECOND_SEM PIC XX.
```



Data Structure Questions

1. What is data structure?
2. List out the areas in which data structures are applied extensively?
3. What are the major data structures used in the following areas : RDBMS, Network data model & Hierarchical data model.
4. If you are using C language to implement the heterogeneous linked list, what pointer type will you use?
5. Minimum number of queues needed to implement the priority queue?
6. What is the data structures used to perform recursion?
7. What are the notations used in Evaluation of Arithmetic Expressions using prefix and postfix forms?
8. Convert the expression $((A + B) * C - (D - E) ^ (F + G))$ to equivalent Prefix and Postfix notations.
9. Sorting is not possible by using which of the following methods?
10. A binary tree with 20 nodes has null branches?
21
Let us take a tree with 5 nodes (n=5)

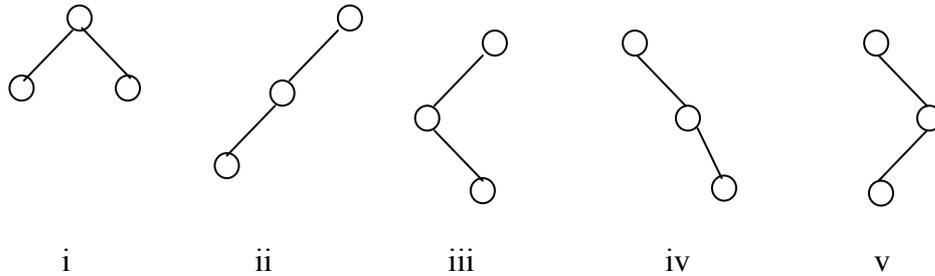


11. What are the methods available in storing sequential files ?

12. How many different trees are possible with 10 nodes ?

1014

For example, consider a tree with 3 nodes($n=3$), it will have the maximum combination of 5 different (ie, $2^3 - 3 = 5$) trees.



13. List out few of the Application of tree data-structure?

14. List out few of the applications that make use of Multilinked Structures?

15. In tree construction which is the suitable efficient data structure?

- (a) Array (b) Linked list (c) Stack (d) Queue (e) none

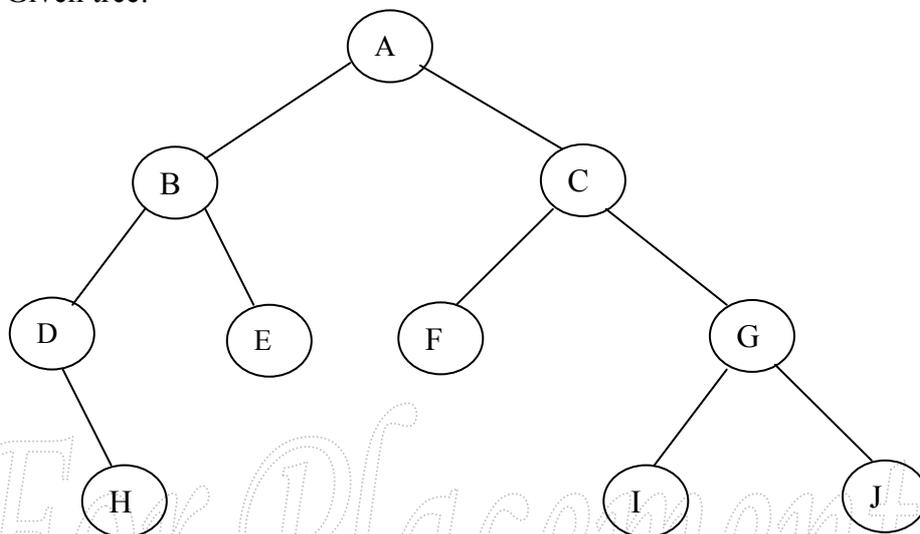
16. What is the type of the algorithm used in solving the 8 Queens problem?

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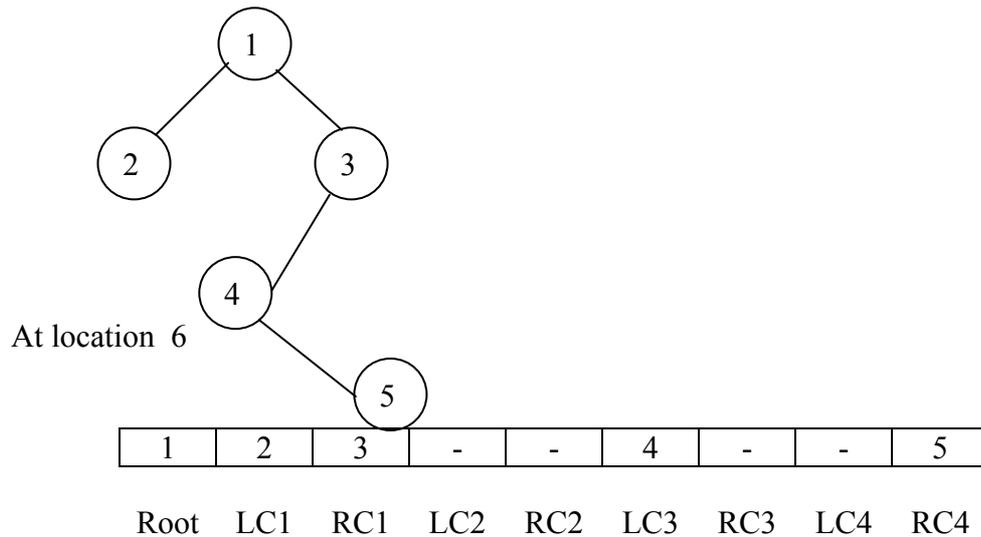
Given tree:



e-INTERVIEW

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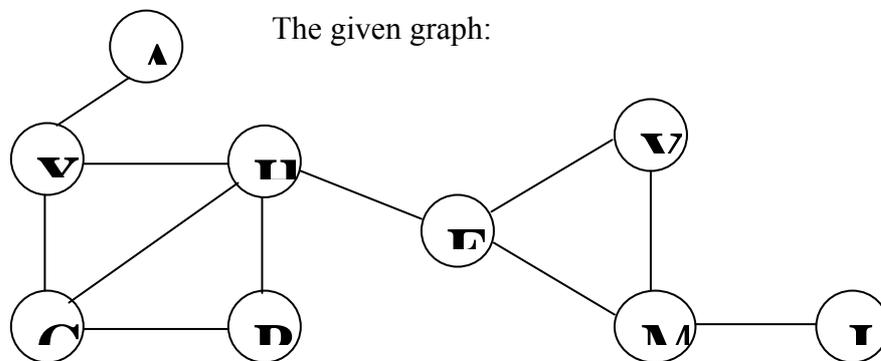


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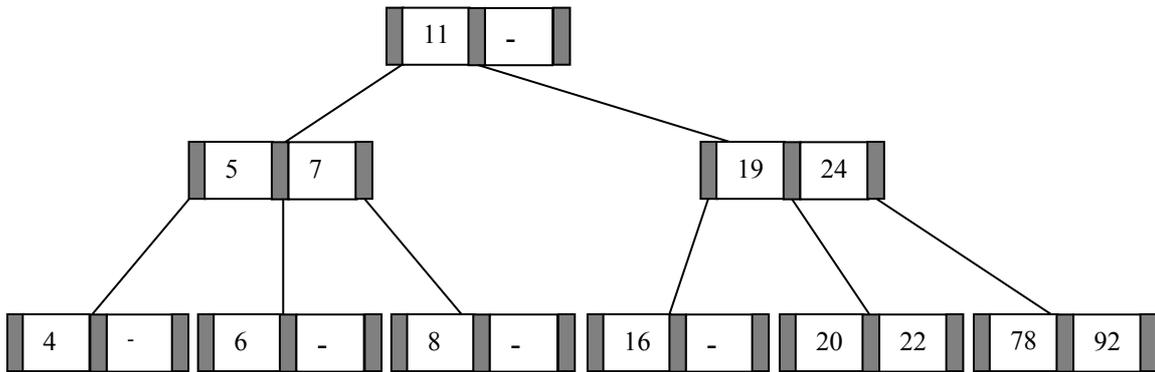
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DFS: A X H P E Y M J G

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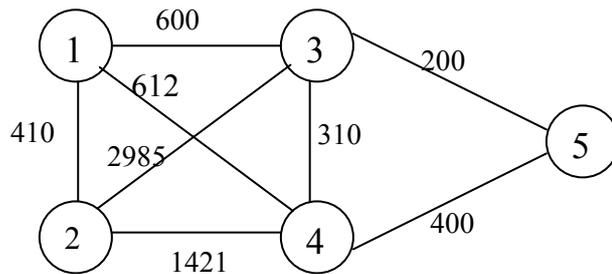
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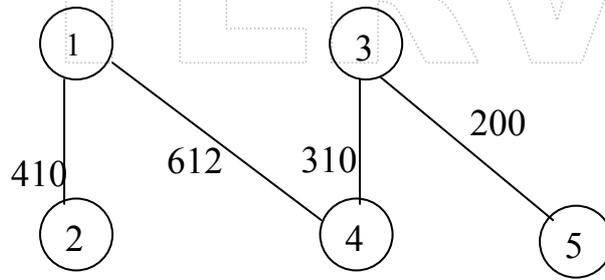
- Incomplete Binary Tree
- Complete Binary Tree
- Full Binary Tree

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29 Does the minimum spanning tree of a graph give the shortest distance between any 2 specified nodes?

30 Convert the given graph with weighted edges to minimal spanning tree.





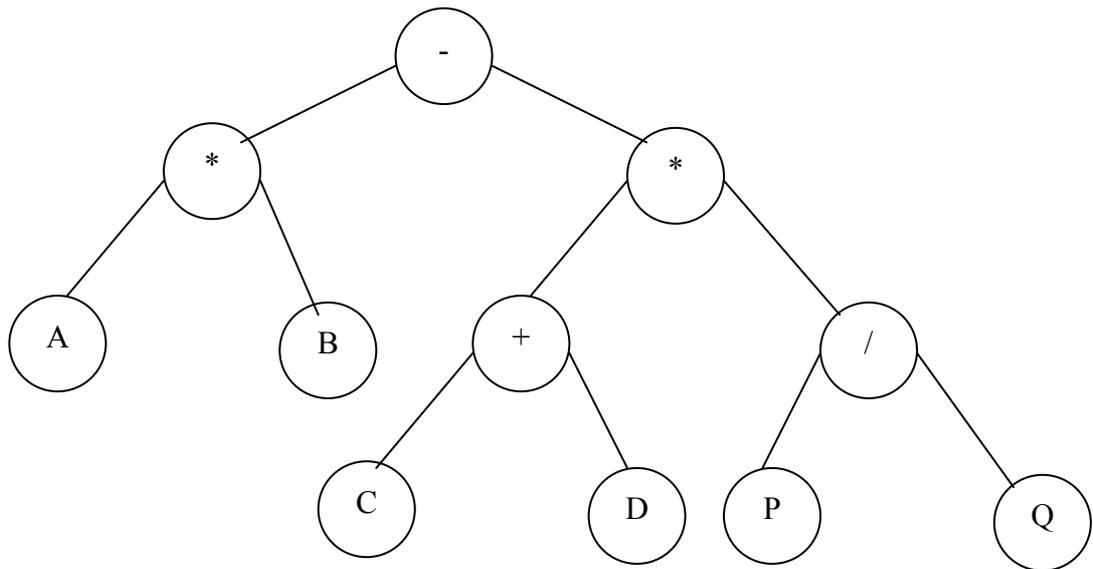
31. Which is the simplest file structure?

- (d) Sequential
- (e) Indexed
- (f) Random

32. Whether Linked List is linear or Non-linear data structure?

33. Draw a binary Tree for the expression :

$$A * B - (C + D) * (P / Q)$$



e-INTERVIEW

DATA STRUCTURE QUESTIONS

1. What is a data structure?
2. What does abstract data type means?
3. Evaluate the following prefix expression " ++ 26 + - 1324" (Similar types can be asked)
4. Convert the following infix expression to post fix notation $((a+2)*(b+4)) - 1$ (Similar types can be asked)
5. How is it possible to insert different type of elements in stack?
6. Stack can be described as a pointer. Explain.
7. Write a Binary Search program
8. Write programs for Bubble Sort, Quick sort
9. Explain about the types of linked lists
10. How would you sort a linked list?
11. Write the programs for Linked List (Insertion and Deletion) operations
12. What data structure would you mostly likely see in a non recursive implementation of a recursive algorithm?
13. What do you mean by Base case, Recursive case, Binding Time, Run-Time Stack and Tail Recursion?
14. Explain quick sort and merge sort algorithms and derive the time-constraint relation for these.
15. Explain binary searching, Fibonacci search.
16. What is the maximum total number of nodes in a tree that has N levels? Note that the root is level (zero)
17. How many different binary trees and binary search trees can be made from three nodes that contain the key values 1, 2 & 3?
18. A list is ordered from smaller to largest when a sort is called. Which sort would take the longest time to execute?
19. A list is ordered from smaller to largest when a sort is called. Which sort would take the shortest time to execute?
20. When will you sort an array of pointers to list elements, rather than sorting the elements themselves?
21. The element being searched for is not found in an array of 100 elements. What is the average number of comparisons needed in a sequential search to determine that the element is not there, if the elements are completely unordered?
22. What is the average number of comparisons needed in a sequential search to determine the position of an element in an array of 100 elements, if the elements are ordered from largest to smallest?
23. Which sort show the best average behavior?
24. What is the average number of comparisons in a sequential search?
25. Which data structure is needed to convert infix notations to post fix notations?
26. What do you mean by:
 - Syntax Error
 - Logical Error
 - Runtime Error
27. How can you correct these errors?
28. In which data structure, elements can be added or removed at either end, but not in the middle?

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Q: What is the purpose of garbage collection in Java, and when is it used?

A: The purpose of garbage collection is to identify and discard objects that are no longer needed by a program so that their resources can be reclaimed and reused. A Java object is subject to garbage collection when it becomes unreachable to the program in which it is used.

Q: Describe synchronization in respect to multithreading.

A: With respect to multithreading, synchronization is the capability to control the access of multiple threads to shared resources. Without synchronization, it is possible for one thread to modify a shared variable while another thread is in the process of using or updating same shared variable. This usually leads to significant errors.

Q: What are pass by reference and passby value?

A: Pass By Reference means the passing the address itself rather than passing the value. Passby Value means passing a copy of the value to be passed.

Q: What is HashMap and Map?

A: Map is Interface and Hashmap is class that implements that.

Q: Difference between HashMap and Hashtable?

A: The HashMap class is roughly equivalent to Hashtable, except that it is unsynchronized and permits nulls. (HashMap allows null values as key and value whereas Hashtable doesn't allow). HashMap does not guarantee that the order of the map will remain constant over time. HashMap is non synchronized and Hashtable is synchronized.

Q: Difference between Vector and ArrayList?

A: Vector is synchronized whereas arraylist is not.

Q: Difference between Swing and Awt?

A: AWT are heavy-weight components. Swings are light-weight components. Hence swing works faster than AWT.

Q: What is the difference between a constructor and a method?

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A: A constructor is a member function of a class that is used to create objects of that class. It has the same name as the class itself, has no return type, and is invoked using the new operator. A method is an ordinary member function of a class. It has its own name, a return type (which may be void), and is invoked using the dot operator.

Q: What is an Iterators?

A: Some of the collection classes provide traversal of their contents via a java.util.Iterator interface. This interface allows you to walk a collection of objects, operating on each object in turn. Remember when using Iterators that they contain a snapshot of the collection at the time the Iterator was obtained; generally it is not advisable to modify the collection itself while traversing an Iterator.

Q: State the significance of public, private, protected, default modifiers both singly and in combination and state the effect of package relationships on declared items qualified by these modifiers.

A: **public** : Public class is visible in other packages, field is visible everywhere (class must be public too)
private : Private variables or methods may be used only by an instance of the same class that declares the variable or method, A private feature may only be accessed by the class that owns the feature.
protected : Is available to all classes in the same package and also available to all subclasses of the class that owns the protected feature. This access is provided even to subclasses that reside in a different package from the class that owns the protected feature.
default : What you get by default ie, without any access modifier (ie, public private or protected). It means that it is visible to all within a particular package.

Q: What is an abstract class?

A: Abstract class must be extended/subclassed (to be useful). It serves as a template. A class that is abstract may not be instantiated (ie, you may not call its constructor), abstract class may contain static data. Any class with an abstract method is automatically abstract itself, and must be declared as such. A class may be declared abstract even if it has no abstract methods. This prevents it from being instantiated.

Q: What is static in java?

A: Static meAns one per class, not one for each object no matter how many instance of a class might exist. This meAns that you can use them without creating an instance of a class. Static methods are implicitly final, because overriding is done based on the type of the object, and static methods are attached to a class, not an object. A static method in a superclass can be shadowed by another static method in a subclass, as long as the original method was not declared final. However, you can't override a static method with a nonstatic method. In other words, you can't change a static method into an instance method in a subclass.

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Q: What is final?

A: A final class can't be extended i.e., final class may not be subclassed. A final method can't be overridden when its class is inherited. You can't change value of a final variable (is a constant).

Q: What if the main method is declared as private?

A: The program compiles properly but at runtime it will give "Main method not public." message.

Q: What if the static modifier is removed from the signature of the main method?

A: Program compiles. But at runtime throws an error "NoSuchMethodError".

Q: What if I write static public void instead of public static void?

A: Program compiles and runs properly.

Q: What if I do not provide the String array as the argument to the method?

A: Program compiles but throws a runtime error "NoSuchMethodError".

Q: What is the first argument of the String array in main method?

A: The String array is empty. It does not have any element. This is unlike C/C++ where the first element by default is the program name.

Q: If I do not provide any arguments on the command line, then the String array of Main method will be empty or null?

A: It is empty. But not null.

Q: How can one prove that the array is not null but empty?

A: Print args.length. It will print 0. That means it is empty. But if it would have been null then it would have thrown a NullPointerException on attempting to print args.length.

Q: What environment variables do I need to set on my machine in order to be able to run Java programs?

A: CLASSPATH and PATH are the two variables.

Q: Can an application have multiple classes having main method?

A: Yes it is possible. While starting the application we mention the class name to be run. The JVM will look for the Main method only in the class whose name you have mentioned. Hence there is not conflict amongst the multiple classes having main method.

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Q: Can I have multiple main methods in the same class?

A: No the program fails to compile. The compiler says that the main method is already defined in the class.

Q: Do I need to import java.lang package any time? Why ?

A: No. It is by default loaded internally by the JVM.

Q: Can I import same package/class twice? Will the JVM load the package twice at runtime?

A: One can import the same package or same class multiple times. Neither compiler nor JVM complains abt it. And the JVM will internally load the class only once no matter how many times you import the same class.

Q: What are Checked and UnChecked Exception?

A: A checked exception is some subclass of Exception (or Exception itself), excluding class RuntimeException and its subclasses. Making an exception checked forces client programmers to deal with the possibility that the exception will be thrown. eg, IOException thrown by java.io.FileInputStream's read() method. Unchecked exceptions are RuntimeException and any of its subclasses. Class Error and its subclasses also are unchecked. With an unchecked exception, however, the compiler doesn't force client programmers either to catch the exception or declare it in a throws clause. In fact, client programmers may not even know that the exception could be thrown. eg, StringIndexOutOfBoundsException thrown by String's charAt() method. Checked exceptions must be caught at compile time. Runtime exceptions do not need to be. Errors often cannot be.

Q: What is Overriding?

A: When a class defines a method using the same name, return type, and arguments as a method in its superclass, the method in the class overrides the method in the superclass. When the method is invoked for an object of the class, it is the new definition of the method that is called, and not the method definition from superclass. Methods may be overridden to be more public, not more private.

Q: What are different types of inner classes?

A: *Nested -level classes, Member classes, Local classes, Anonymous classes*

Nested -level classes- If you declare a class within a class and specify the static modifier, the compiler treats the class just like any other -level class. Any class outside the declaring class accesses the nested class with the declaring class name acting similarly to a package. eg, outer.inner. -level inner classes implicitly have access only to static variables. There can also be inner interfaces. All of these are of the nested -level variety.

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Member classes - Member inner classes are just like other member methods and member variables and access to the member class is restricted, just like methods and variables. This means a public member class acts similarly to a nested -level class. The primary difference between member classes and nested -level classes is that member classes have access to the specific instance of the enclosing class.

Local classes - Local classes are like local variables, specific to a block of code. Their visibility is only within the block of their declaration. In order for the class to be useful beyond the declaration block, it would need to implement a more publicly available interface. Because local classes are not members, the modifiers public, protected, private, and static are not usable.

Anonymous classes - Anonymous inner classes extend local inner classes one level further. As anonymous classes have no name, you cannot provide a constructor.

Q: Does importing a package imports the subpackages as well? e.g. Does importing com.MyTest.* also import com.MyTest.UnitTests.*?

A: No you will have to import the subpackages explicitly. Importing com.MyTest.* will import classes in the package MyTest only. It will not import any class in any of its subpackage.

Q: What is the difference between declaring a variable and defining a variable?

A: In declaration we just mention the type of the variable and its name. We do not initialize it. But defining means declaration + initialization. e.g String s; is just a declaration while String s = new String ("abcd"); Or String s = "abcd"; are both definitions.

Q: What is the default value of an object reference declared as an instance variable?

A: null unless we define it explicitly.

Q: Can a level class be private or protected?

A: No. A level class can not be private or protected. It can have either "public" or no modifier. If it does not have a modifier it is supposed to have a default access. If a level class is declared as private the compiler will complain that the "modifier private is not allowed here". This means that a level class can not be private. Same is the case with protected.

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Q: What type of parameter passing does Java support?

A: In Java the arguments are always passed by value .

Q: Primitive data types are passed by reference or pass by value?

A: Primitive data types are passed by value.

Q: Objects are passed by value or by reference?

A: Java only supports pass by value. With objects, the object reference itself is passed by value and so both the original reference and parameter copy both refer to the same object .

Q: What is serialization?

A: Serialization is a mechanism by which you can save the state of an object by converting it to a byte stream.

Q: How do I serialize an object to a file?

A: The class whose instances are to be serialized should implement an interface Serializable. Then you pass the instance to the ObjectOutputStream which is connected to a FileOutputStream. This will save the object to a file.

Q: Which methods of Serializable interface should I implement?

A: The Serializable interface is an empty interface, it does not contain any methods. So we do not implement any methods.

Q: How can I customize the serialization process? i.e. how can one have a control over the serialization process?

A: Yes it is possible to have control over serialization process. The class should implement Externalizable interface. This interface contains two methods namely readExternal and writeExternal. You should implement these methods and write the logic for customizing the serialization process.

Q: What is the common usage of serialization?

A: Whenever an object is to be sent over the network, objects need to be serialized. Moreover if the state of an object is to be saved, objects need to be serialized.

Q: What is Externalizable interface?

A: Externalizable is an interface which contains two methods readExternal and writeExternal. These methods give you a control over the serialization mechanism. Thus if your class implements this interface, you can customize the serialization process by implementing these methods.



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Q: What happens to the object references included in the object?

A: The serialization mechanism generates an object graph for serialization. Thus it determines whether the included object references are serializable or not. This is a recursive process. Thus when an object is serialized, all the included objects are also serialized along with the original object.

Q: What one should take care of while serializing the object?

A: One should make sure that all the included objects are also serializable. If any of the objects is not serializable then it throws a `NotSerializableException`.

Q: What happens to the static fields of a class during serialization?

A: There are three exceptions in which serialization does not necessarily read and write to the stream. These are

1. Serialization ignores static fields, because they are not part of any particular state.
2. Base class fields are only handled if the base class itself is serializable.
3. **Transient** fields.

Q: Does Java provide any construct to find out the size of an object?

A: No, there is no `sizeof` operator in Java. So there is no direct way to determine the size of an object directly in Java.

Q: Does importing a package import the subpackages as well? e.g. Does importing `com.MyTest.*` also import `com.MyTest.UnitTests.*`?

A: Read the system time just before the method is invoked and immediately after method returns. Take the time difference, which will give you the time taken by a method for execution.

To put it in code...

```
long start = System.currentTimeMillis ();
method ();
long end = System.currentTimeMillis ();
```

```
System.out.println ("Time taken for execution is " + (end - start));
```

Remember that if the time taken for execution is too small, it might show that it is taking zero milliseconds for execution. Try it on a method which is big enough, in the sense the one which is doing considerable amount of processing.

Q: What are wrapper classes?

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A: Java provides specialized classes corresponding to each of the primitive data types. These are called wrapper classes. They are e.g. Integer, Character, Double etc.

Q: **Why do we need wrapper classes?**

A: It is sometimes easier to deal with primitives as objects. Moreover most of the collection classes store objects and not primitive data types. And also the wrapper classes provide many utility methods also. Because of these reasons we need wrapper classes. And since we create instances of these classes we can store them in any of the collection classes and pass them around as a collection. Also we can pass them around as method parameters where a method expects an object.

Q: **What are checked exceptions?**

A: Checked exceptions are those which the Java compiler forces you to catch. e.g. IOException are checked Exceptions.

Q: **What are runtime exceptions?**

A: Runtime exceptions are those exceptions that are thrown at runtime because of either wrong input data or because of wrong business logic etc. These are not checked by the compiler at compile time.

Q: **What is the difference between error and an exception?**

A: An error is an irrecoverable condition occurring at runtime. Such as OutOfMemory error. These JVM errors and you can not repair them at runtime. While exceptions are conditions that occur because of bad input etc. e.g. FileNotFoundException will be thrown if the specified file does not exist. Or a NullPointerException will take place if you try using a null reference. In most of the cases it is possible to recover from an exception (probably by giving user a feedback for entering proper values etc.).

Q: **How to create custom exceptions?**

A: Your class should extend class Exception, or some more specific type thereof.

Q: **If I want an object of my class to be thrown as an exception object, what should I do?**

A: The class should extend from Exception class. Or you can extend your class from some more precise exception type also.

Q: **If my class already extends from some other class what should I do if I want an instance of my class to be thrown as an exception object?**

A: One can not do anything in this scenario. Because Java does not allow multiple inheritance and does not provide any exception interface as well.

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Q: What happens to an unhandled exception?

A: One can not do anything in this scenario. Because Java does not allow multiple inheritance and does not provide any exception interface as well.

Q: How does an exception permeate through the code?

A: An unhandled exception moves up the method stack in search of a matching block. When an exception is thrown from a code which is wrapped in a try block followed by one or more catch blocks, a search is made for a matching catch block. If a matching type is found then that block will be invoked. If a matching type is not found then the exception moves up the method stack and reaches the caller method. Same procedure is repeated if the caller method is included in a try catch block. This process continues until a catch block handling the appropriate type of exception is found. If it does not find such a block then finally the program terminates.

Q: What are the different ways to handle exceptions?

A: There are two ways to handle exceptions,
1. By wrapping the desired code in a try block followed by a catch block to catch the exceptions. and
2. List the desired exceptions in the throws clause of the method and let the caller of the method handle those exceptions.

Q: What is the basic difference between the 2 approaches to exception handling...1 try catch block and 2 specifying the candidate exceptions in the throws clause? When should you use which approach?

A: In the first approach as a programmer of the method, you yourself are dealing with the exception. This is fine if you are in a best position to decide should be done in case of an exception. Whereas if it is not the responsibility of the method to deal with its own exceptions, then do not use this approach. In this case use the second approach. In the second approach we are forcing the caller of the method to catch the exceptions, that the method is likely to throw. This is often the approach library creators use. They list the exception in the throws clause and we must catch them. You will find the same approach throughout the Java libraries we use.

Q: Is it necessary that each try block must be followed by a catch block?

A: It is not necessary that each try block must be followed by a catch block. It should be followed by either a catch block OR a finally block. And whatever exceptions are likely to be thrown should be declared in the throws clause of the method.

Q: If I write return at the end of the try block, will the finally block still execute?

A: Yes even if you write return as the last statement in the try block and no exception occurs, the finally block will execute. The finally block will execute and then the control return.

Q: **If I write System.exit (0); at the end of the try block, will the finally block still execute?**

A: No in this case the finally block will not execute because when you say System.exit (0); the control immediately goes out of the program, and thus finally never executes.

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Q: How are Observer and Observable used?

A: Objects that subclass the Observable class maintain a list of observers. When an Observable object is updated it invokes the update() method of each of its observers to notify the observers that it has changed state. The Observer interface is implemented by objects that observe Observable objects.

: What is synchronization and why is it important?

A: With respect to multithreading, synchronization is the capability to control the access of multiple threads to shared resources. Without synchronization, it is possible for one thread to modify a shared object while another thread is in the process of using or updating that object's value. This often leads to significant errors.

Q: How does Java handle integer overflows and underflows?

A: It uses those low order bytes of the result that can fit into the size of the type allowed by the operation.

Q: Does garbage collection guarantee that a program will not run out of memory?

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A: Garbage collection does not guarantee that a program will not run out of memory. It is possible for programs to use up memory resources faster than they are garbage collected. It is also possible for programs to create objects that are not subject to garbage collection.

Q: **What is the difference between preemptive scheduling and time slicing?**

A: Under preemptive scheduling, the highest priority task executes until it enters the waiting or dead states or a higher priority task comes into existence. Under time slicing, a task executes for a predefined slice of time and then reenters the pool of ready tasks. The scheduler then determines which task should execute next, based on priority and other factors.

Q: **When a thread is created and started, what is its initial state?**

A: A thread is in the ready state after it has been created and started.

Q: **What is the purpose of finalization?**

A: The purpose of finalization is to give an unreachable object the opportunity to perform any cleanup processing before the object is garbage collected.

Q: **What is the Locale class?**

A: The Locale class is used to tailor program output to the conventions of a particular geographic, political, or cultural region.

Q: **What is the difference between a while statement and a do statement?**

A: A while statement checks at the beginning of a loop to see whether the next loop iteration should occur. A do statement checks at the end of a loop to see whether the next iteration of a loop should occur. The do statement will always execute the body of a loop at least once.

Q: **What is the difference between static and non-static variables?**

A: A static variable is associated with the class as a whole rather than with specific instances of a class. Non-static variables take on unique values with each object instance.

Q: **How are this() and super() used with constructors?**

A: Othis() is used to invoke a constructor of the same class. super() is used to invoke a superclass constructor.

Q: **What are synchronized methods and synchronized statements?**

A: Synchronized methods are methods that are used to control access to an object. A thread only executes a synchronized method after it has acquired the lock for the method's object or class. Synchronized statements are similar to



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synchronized methods. A synchronized statement can only be executed after a thread has acquired the lock for the object or class referenced in the synchronized statement.

Q: What is daemon thread and which method is used to create the daemon thread?

A: Daemon thread is a low priority thread which runs intermittently in the background doing the garbage collection operation for the java runtime system. setDaemon method is used to create a daemon thread.

Q: Can applets communicate with each other?

A: At this point in time applets may communicate with other applets running in the same virtual machine. If the applets are of the same class, they can communicate via shared static variables. If the applets are of different classes, then each will need a reference to the same class with static variables. In any case the basic idea is to pass the information back and forth through a static variable.

An applet can also get references to all other applets on the same page using the getApplets() method of java.applet.AppletContext. Once you've got a reference to an applet, you can communicate with it by using its public members.

It is conceivable to have applets in different virtual machines that talk to a server somewhere on the Internet and store any data that needs to be serialized there. Then, when another applet needs this data, it could connect to this same server. Implementing this is non-trivial.

Q: What are the steps in the JDBC connection?

A: While making a JDBC connection we go through the following steps :

Step 1 : Register the database driver by using :

```
Class.forName("\ driver classs for that specific database\ " );
```

Step 2 : Now create a database connection using :

```
Connection con = DriverManager.getConnection(url,username,password);
```

Step 3: Now Create a query using :

```
Statement stmt = Connection.Statement("\select * from TABLE NAME\");
```

Step 4 : Exceute the query :

```
stmt.exceuteUpdate();
```

Q: How does a try statement determine which catch clause should be used to handle an exception?

A: When an exception is thrown within the body of a try statement, the catch

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clauses of the try statement are examined in the order in which they appear. The first catch clause that is capable of handling the exception is executed. The remaining catch clauses are ignored.

Q:

Can an unreachable object become reachable again?

A: An unreachable object may become reachable again. This can happen when the object's finalize() method is invoked and the object performs an operation which causes it to become accessible to reachable objects.

Q:

What method must be implemented by all threads?

A: All tasks must implement the run() method, whether they are a subclass of Thread or implement the Runnable interface.

Q:

What are synchronized methods and synchronized statements?

A: Synchronized methods are methods that are used to control access to an object. A thread only executes a synchronized method after it has acquired the lock for the method's object or class. Synchronized statements are similar to synchronized methods. A synchronized statement can only be executed after a thread has acquired the lock for the object or class referenced in the synchronized statement.

Q:

What is Externalizable?

A: Externalizable is an Interface that extends Serializable Interface. And sends data into Streams in Compressed Format. It has two methods, writeExternal(ObjectOutput out) and readExternal(ObjectInput in)

Q:

What modifiers are allowed for methods in an Interface?

A: Only public and abstract modifiers are allowed for methods in interfaces.

Q:

What are some alternatives to inheritance?

A: Delegation is an alternative to inheritance. Delegation means that you include an instance of another class as an instance variable, and forward messages to the instance. It is often safer than inheritance because it forces you to think about each message you forward, because the instance is of a known class, rather than a new class, and because it doesn't force you to accept all the methods of the super class: you can provide only the methods that really make sense. On the other hand, it makes you write more code, and it is harder to re-use (because it is not a subclass).

Q:

What is the difference between preemptive scheduling and time slicing?

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A: Under preemptive scheduling, the highest priority task executes until it enters the waiting or dead states or a higher priority task comes into existence. Under time slicing, a task executes for a predefined slice of time and then reenters the pool of ready tasks. The scheduler then determines which task should execute next, based on priority and other factors.

Q: **What is the catch or declare rule for method declarations?**

A: If a checked exception may be thrown within the body of a method, the method must either catch the exception or declare it in its throws clause.

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Operating System

1. Explain Belady's Anomaly.
2. What is a binary semaphore? What is its use?
3. What is thrashing?
4. List the Coffman's conditions that lead to a deadlock.
5. What is short-, long- and medium-term scheduling?
6. What are turnaround time and response time?
7. What are the typical elements of a process image?
8. What is the TrAnslation Look aside Buffer (TLB)?
9. What is the resident set and working set of a process?
10. When is a system in safe state?
11. What is cycle stealing?
12. What is meant by arm-stickiness?
13. What are the stipulations of C2 level security?
14. What is busy waiting?
15. Explain the popular multiprocessor thread-scheduling strategies.
16. When does the condition 'rendezvous' arise?
17. What is a trap and trapdoor?
18. What are local and global page replacements?
19. Define latency, trAnsfer and seek time with respect to disk I/O.
20. Describe the Buddy system of memory allocation.
21. What is time-stamping?
22. How are the wait/signal operations for monitor different from those for semaphores?
23. In the context of memory management, what are placement and replacement algorithms?
24. In loading programs into memory, what is the difference between load-time dynamic linking and run-time dynamic linking?
25. What are demand- and pre-paging?
26. Paging a memory management function, while multiprogramming a processor management function, are the two interdependent?
27. What is page cannibalizing?
28. What has triggered the need for multitasking in PCs?
29. What are the four layers that Windows NT has in order to achieve independence?
30. What is SMP?
31. What is the key object oriented concepts used by Windows NT?
32. Is Windows NT a full blown object oriented operating system? Give reasons.
33. What is a drawback of MVT?
34. What is process spawning?
35. How many jobs can be run concurrently on MVT?
36. List out some reasons for process termination.
37. What are the reasons for process suspension?
38. What is process migration?
39. What is mutant?
40. What is an idle thread?

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41. What is FtDisk?
42. What are the possible threads a thread can have?
43. What are rings in Windows NT?
44. What is Executive in Windows NT?
45. What are the sub-components of I/O manager in Windows NT?
46. What are DDks? Name an operating system that includes this feature.
47. What level of security does Windows NT meets?
48. What are the basic functions of an operating system?
49. Explain briefly about, processor, assembler, compiler, loader, linker and the functions executed by them.
50. What are the difference phases of software development? Explain briefly?
51. Differentiate between RAM and ROM?
52. What is DRAM? In which form does it store data?
53. What is cache memory?
54. What is hard disk and what is its purpose?
55. Differentiate between Compiler and Interpreter?
56. What are the different tasks of Lexical analysis?
57. What are the different functions of Syntax phase, Scheduler?
58. What are the main difference between Micro-Controller and Micro-Processor?
59. Describe different job scheduling in operating systems.
60. What is a Real-Time System?
61. What is the difference between Hard and Soft real-time systems?
62. What is a mission critical system?
63. What is the important aspect of a real-time system?
64. If two processes which shares same system memory and system clock in a distributed system, what is it called?
65. What is the state of the processor, when a process is waiting for some event to occur?
66. What do you mean by deadlock?
67. Explain the difference between microkernel and macro kernel.
68. Give an example of microkernel.
69. When would you choose bottom up methodology?
70. When would you choose top down methodology?
71. Write a small dc shell script to find number of FF in the design.
72. Why paging is used?
73. Which is the best page replacement algorithm and Why? How much time is spent usually in each phases and why?
74. Difference between Primary storage and secondary storage?
75. What is multi tasking, multi programming, multi threading?
76. Difference between multi threading and multi tasking?
77. What is software life cycle?
78. Demand paging, page faults, replacement algorithms, thrashing, etc.
79. Explain about paged segmentation and segment paging
80. While running DOS on a PC, which command would be used to duplicate the entire diskette?

For Placement

Networking concepts

1. What are the two types of transmission technology available?

- (i) Broadcast and (ii) point-to-point

2. What is subnet?

A generic term for section of a large networks usually separated by a bridge or router.

3. Difference between the communication and transmission.

Transmission is a physical movement of information and concern issues like bit polarity, synchronisation, clock etc.

Communication means the meaning full exchange of information between two communication media.

4. What are the possible ways of data exchange?

- (i) Simplex (ii) Half-duplex (iii) Full-duplex.

5. What is SAP?

Series of interface points that allow other computers to communicate with the other layers of network protocol stack.

6. What do you meant by "triple X" in Networks?

The function of PAD (Packet Assembler Disassembler) is described in a document known as X.3. The standard protocol has been defined between the terminal and the PAD, called X.28; another standard protocol exists between hte PAD and the network, called X.29. Together, these three recommendations are often called "triple X"

7. What is frame relay, in which layer it comes?

Frame relay is a packet switching technology. It will operate in the data link layer.

8. What is terminal emulation, in which layer it comes?

Telnet is also called as terminal emulation. It belongs to application layer.

9. What is Beaconsing?

The process that allows a network to self-repair networks problems. The stations on the network notify the other stations on the ring when they are not receiving the trAnsmissions. Beaconsing is used in Token ring and FDDI networks.

10. What is redirector?

Redirector is software that intercepts file or prints I/O requests and trAnslates them into network requests. This comes under presentation layer.

11. What is NETBIOS and NETBEUI?

NETBIOS is a programming interface that allows I/O requests to be sent to and received from a remote computer and it hides the networking hardware from applications.

NETBEUI is NetBIOS extended user interface. A trAnsport protocol designed by microsoft and IBM for the use on small subnets.

12. What is RAID?

A method for providing fault tolerance by using multiple hard disk drives.

13. What is passive topology?

When the computers on the network simply listen and receive the signal, they are referred to as passive because they don't amplify the signal in any way. Example for passive topology - linear bus.

14. What is Brouter?

Hybrid devices that combine the features of both bridges and routers.

15. What is cladding?

A layer of a glass surrounding the center fiber of glass inside a fiber-optic cable.

16. What is point-to-point protocol?

A communications protocol used to connect computers to remote networking services including Internet service providers.

17. How Gateway is different from Routers?

A gateway operates at the upper levels of the OSI model and trAnslates information between two completely different network architectures or data formats

18. What is attenuation?

The degeneration of a signal over distance on a network cable is called attenuation.

19. What is MAC address?

The address for a device as it is identified at the Media Access Control (MAC) layer in the network architecture. MAC address is usually stored in ROM on the network adapter card and is unique.

20. Difference between bit rate and baud rate.

Bit rate is the number of bits trAnsmitted during one second whereas baud rate refers to the number of signal units per second that are required to represent those bits.

$$\text{baud rate} = \text{bit rate} / N$$

where N is no-of-bits represented by each signal shift.

21. What is Bandwidth?

Every line has an upper limit and a lower limit on the frequency of signals it can carry. This limited range is called the bandwidth.

22. What are the types of TrAnsmission media?

Signals are usually trAnsmitted over some trAnsmission media that are broadly classified in to two categories.

a) *Guided Media:*

These are those that provide a conduit from one device to another that include twisted-pair, coaxial cable and fiber-optic cable. A signal traveling along any of these media is directed and is contained by the physical limits of the medium. Twisted-pair and coaxial cable use metallic that accept and transport signals in the form of electrical current. Optical fiber is a glass or plastic cable that accepts and transports signals in the form of light.

b) Unguided Media:

This is the wireless media that transport electromagnetic waves without using a physical conductor. Signals are broadcast either through air. This is done through radio communication, satellite communication and cellular telephony.

23. What is Project 802?

It is a project started by IEEE to set standards to enable intercommunication between equipment from a variety of manufacturers. It is a way for specifying functions of the physical layer, the data link layer and to some extent the network layer to allow for interconnectivity of major LAN protocols.

It consists of the following:

- 802.1 is an internetworking standard for compatibility of different LANs and MANs across protocols.
- 802.2 Logical link control (LLC) is the upper sublayer of the data link layer which is non-architecture-specific, that is remains the same for all IEEE-defined LANs.
- Media access control (MAC) is the lower sublayer of the data link layer that contains some distinct modules each carrying proprietary information specific to the LAN product being used. The modules are Ethernet LAN (802.3), Token ring LAN (802.4), Token bus LAN (802.5).
- 802.6 is distributed queue dual bus (DQDB) designed to be used in MANs.

24. What is Protocol Data Unit?

The data unit in the LLC level is called the protocol data unit (PDU). The PDU contains of four fields a destination service access point (DSAP), a source service access point (SSAP), a control field and an information field. DSAP, SSAP are addresses used by the LLC to identify the protocol stacks on the receiving and sending machines that are generating and using the data. The control field specifies whether the PDU frame is a information frame (I - frame) or a supervisory frame (S - frame) or a unnumbered frame (U - frame).

25. What are the different type of networking / internetworking devices?

Repeater:

Also called a regenerator, it is an electronic device that operates only at physical layer. It receives the signal in the network before it becomes weak, regenerates the original bit pattern and puts the refreshed copy back in to the link.

Bridges:

These operate both in the physical and data link layers of LANs of same type. They divide a larger network in to smaller segments. They contain logic that allow them to keep the traffic for each segment separate and thus are repeaters that relay a frame only the side of the segment containing the intended recipient and control congestion.

Routers:

They relay packets among multiple interconnected networks (i.e. LANs of different type). They operate in the physical, data link and network layers. They contain software that enable them to determine which of the several possible paths is the best for a particular transmission.

Gateways:

They relay packets among networks that have different protocols (e.g. between a LAN and a WAN). They accept a packet formatted for one protocol and convert it to a packet formatted for another protocol before forwarding it. They operate in all seven layers of the OSI model.

26. What is ICMP?

ICMP is Internet Control Message Protocol, a network layer protocol of the TCP/IP suite used by hosts and gateways to send notification of datagram problems back to the sender. It uses the echo test / reply to test whether a destination is reachable and responding. It also handles both control and error messages.

27. What are the data units at different layers of the TCP / IP protocol suite?

The data unit created at the application layer is called a message, at the transport layer the data unit created is called either a segment or an user datagram, at the network layer the data unit created is called the datagram, at the data link layer the datagram is encapsulated in to a frame and finally transmitted as signals along the transmission media.

28. What is difference between ARP and RARP?

The address resolution protocol (ARP) is used to associate the 32 bit IP address with the 48 bit physical address, used by a host or a router to find the physical address of another host on its network by sending a ARP query packet that includes the IP address of the receiver.

The reverse address resolution protocol (RARP) allows a host to discover its Internet address when it knows only its physical address.

29. What is the minimum and maximum length of the header in the TCP segment and IP datagram?

The header should have a minimum length of 20 bytes and can have a maximum length of 60 bytes.

30. What is the range of addresses in the classes of internet addresses?

Class A	0.0.0.0	-	127.255.255.255
Class B	128.0.0.0	-	191.255.255.255
Class C	192.0.0.0	-	223.255.255.255
Class D	224.0.0.0	-	239.255.255.255
Class E	240.0.0.0	-	247.255.255.255

31. What is the difference between TFTP and FTP application layer protocols?

The Trivial File Transfer Protocol (TFTP) allows a local host to obtain files from a remote host but does not provide reliability or security. It uses the fundamental packet delivery services offered by UDP.

The File Transfer Protocol (FTP) is the standard mechanism provided by TCP / IP for copying a file from one host to another. It uses the services offer by TCP and

so is reliable and secure. It establishes two connections (virtual circuits) between the hosts, one for data transfer and another for control information.

32. What are major types of networks and explain?

- Server-based network
- Peer-to-peer network

Peer-to-peer network, computers can act as both servers sharing resources and as clients using the resources.

Server-based networks provide centralized control of network resources and rely on server computers to provide security and network administration

33. What are the important topologies for networks?

- *BUS topology:*

In this each computer is directly connected to primary network cable in a single line.

Advantages:

Inexpensive, easy to install, simple to understand, easy to extend.

- *STAR topology:*

In this all computers are connected using a central hub.

Advantages:

Can be inexpensive, easy to install and reconfigure and easy to trouble shoot physical problems.

- *RING topology:*

In this all computers are connected in loop.

Advantages:

All computers have equal access to network media, installation can be simple, and signal does not degrade as much as in other topologies because each computer regenerates it.

34. What is mesh network?

A network in which there are multiple network links between computers to provide multiple paths for data to travel.

35. What is difference between baseband and broadband transmission?

In a baseband transmission, the entire bandwidth of the cable is consumed by a single signal. In broadband transmission, signals are sent on multiple frequencies, allowing multiple signals to be sent simultaneously.

36. Explain 5-4-3 rule?

In a Ethernet network, between any two points on the network ,there can be no more than five network segments or four repeaters, and of those five segments only three of segments can be populated.

37. What MAU?

In token Ring , hub is called Multistation Access Unit(MAU).

38. What is the difference between routable and non- routable protocols?

Routable protocols can work with a router and can be used to build large

networks. Non-Routable protocols are designed to work on small, local networks and cannot be used with a router

39. Why should you care about the OSI Reference Model?

It provides a framework for discussing network operations and design.

40. What is logical link control?

One of two sublayers of the data link layer of OSI reference model, as defined by the IEEE 802 standard. This sublayer is responsible for maintaining the link between computers when they are sending data across the physical network connection.

41. What is virtual channel?

Virtual channel is normally a connection from one source to one destination, although multicast connections are also permitted. The other name for virtual channel is virtual circuit.

42. What is virtual path?

Along any transmission path from a given source to a given destination, a group of virtual circuits can be grouped together into what is called path.

43. What is packet filter?

Packet filter is a standard router equipped with some extra functionality. The extra functionality allows every incoming or outgoing packet to be inspected. Packets meeting some criterion are forwarded normally. Those that fail the test are dropped.

44. What is traffic shaping?

One of the main causes of congestion is that traffic is often bursty. If hosts could be made to transmit at a uniform rate, congestion would be less common. Another open loop method to help manage congestion is forcing the packet to be transmitted at a more predictable rate. This is called traffic shaping.

45. What is multicast routing?

Sending a message to a group is called multicasting, and its routing algorithm is called multicast routing.

46. What is region?

When hierarchical routing is used, the routers are divided into what we will call regions, with each router knowing all the details about how to route packets to destinations within its own region, but knowing nothing about the internal structure of other regions.

47. What is silly window syndrome?

It is a problem that can ruin TCP performance. This problem occurs when data are passed to the sending TCP entity in large blocks, but an interactive application on the receiving side reads 1 byte at a time.

48. What are Digrams and Trigrams?

The most common two letter combinations are called as digrams. e.g. th, in, er, re and an. The most common three letter combinations are called as trigrams. e.g. the, ing, and, and ion.

49. Expand IDEA.

IDEA stands for International Data Encryption Algorithm.

50. What is wide-mouth frog?

Wide-mouth frog is the simplest known key distribution center (KDC) authentication protocol.

51. What is Mail Gateway?

It is a system that performs a protocol translation between different electronic mail delivery protocols.

52. What is IGP (Interior Gateway Protocol)?

It is any routing protocol used within an autonomous system.

53. What is EGP (Exterior Gateway Protocol)?

It is the protocol the routers in neighboring autonomous systems use to identify the set of networks that can be reached within or via each autonomous system.

54. What is autonomous system?

It is a collection of routers under the control of a single administrative authority and that uses a common Interior Gateway Protocol.

55. What is BGP (Border Gateway Protocol)?

It is a protocol used to advertise the set of networks that can be reached with in an autonomous system. BGP enables this information to be shared with the autonomous system. This is newer than EGP (Exterior Gateway Protocol).

56. What is Gateway-to-Gateway protocol?

It is a protocol formerly used to exchange routing information between Internet core routers.

57. What is NVT (Network Virtual Terminal)?

It is a set of rules defining a very simple virtual terminal interaction. The NVT is used in the start of a Telnet session.

58. What is a Multi-homed Host?

It is a host that has a multiple network interfaces and that requires multiple IP addresses is called as a Multi-homed Host.

59. What is Kerberos?

It is an authentication service developed at the Massachusetts Institute of Technology. Kerberos uses encryption to prevent intruders from discovering passwords and gaining unauthorized access to files.

60. What is OSPF?

It is an Internet routing protocol that scales well, can route traffic along multiple paths, and uses knowledge of an Internet's topology to make accurate routing decisions.

61. What is Proxy ARP?

It is using a router to answer ARP requests. This will be done when the originating host believes that a destination is local, when in fact it lies beyond the router.

62. What is SLIP (Serial Line Interface Protocol)?

It is a very simple protocol used for transmission of IP datagrams across a serial line.

63. What is RIP (Routing Information Protocol)?

It is a simple protocol used to exchange information between the routers.

64. What is source route?

It is a sequence of IP addresses identifying the route a datagram must follow. A source route may optionally be included in an IP datagram header.

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Aptitude Questions

1. One of the following is my secret word: AIM DUE MOD OAT TIE. With the list in front of you, if I were to tell you any one of my secret word, then you would be able to tell me the number of vowels in my secret word. Which is my secret word?

Ans. TIE

2. In the following figure: A B C D E F G H I

Each of the digits 1, 2, 3, 4, 5, 6, 7, 8, and 9 is:

- a) Represented by a different letter in the figure above.
- b) Positioned in the figure above so that each of $A + B + C$, $C + D + E$, $E + F + G$, and $G + H + I$ is equal to 13.

Which digit does E represent?

Ans. E is 4

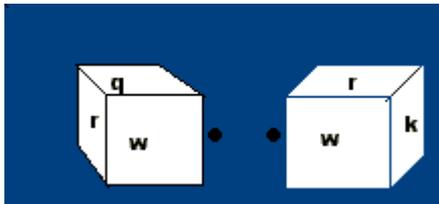
3. One of Mr. Horton, his wife, their son, and Mr. Horton's mother is a doctor and another is a lawyer.

- a) If the doctor is younger than the lawyer, then the doctor and the lawyer are not blood relatives.
- b) If the doctor is a woman, then the doctor and the lawyer are blood relatives.
- c) If the lawyer is a man, then the doctor is a man.

Whose occupation you know?

Ans. Mr. Horton: he is the doctor.

4. Here is a picture of two cubes:



- a) The two cubes are exactly alike.
 - b) The hidden faces indicated by the dots have the same alphabet on them.
- Which alphabet- q, r, w, or k is on the faces indicated by the dots?

Ans. q

5. In the following figure:

A		D
B	G	E
C		F

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Each of the seven digits from 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 is:

- a) Represented by a different letter in the figure above.
 - b) Positioned in the figure above so that $A*B*C$, $B*G*E$, and $D*E*F$ are equal.
- Which digit does G represent?

Ans. G represents the digit 2.

6. Mr. and Mrs. Aye and Mr. and Mrs. Bee competed in a chess tournament. Of the three games played:

- a) In only the first game were the two players married to each other.
- b) The men won two games and the women won one game.
- c) The Ayes won more games than the Bees.
- d) Anyone who lost a game did not play the subsequent game.

Who did not lose a game?

Ans. Mrs. Bee did not lose a game.

7. Three piles of chips--pile I consists one chip, pile II consists of chips, and pile III consists of three chips--are to be used in game played by Anita and Brinda. The game requires:

- a) That each player in turn take only one chip or all chips from just one pile.
- b) That the player who has to take the last chip loses.
- c) That Anita now have her turn.

From which pile should Anita draw in order to win?

Ans. Pile II

8. Of Abdul, Binoy, and Chandini:

- a) Each member belongs to the Tee family whose members always tell the truth or to the El family whose members always lie.
- b) Abdul says "Either I belong or Binoy belongs to a different family from the other two."

Whose family do you name of?

Ans. Binoy's family--El.

9. In a class composed of x girls and y boys what part of the class is composed of girls

- A. $\frac{y}{x+y}$
- B. $\frac{x}{x+y}$
- C. $\frac{x}{x+y}$
- D. $\frac{y}{x+y}$

Ans. C

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10. What is the maximum number of half-pint bottles of cream that can be filled with a 4-gallon can of cream (2 pt.=1 qt. and 4 qt.=1 gal)

- A.16
- B.24
- C.30
- D.64

Ans.D

11. If the operation, \wedge is defined by the equation $x \wedge y = 2x + y$, what is the value of a in $2 \wedge a = a \wedge 3$

- A.0
- B.1
- C.-1
- D.4

Ans.B

12. A coffee shop blends 2 kinds of coffee, putting in 2 parts of a 33p. a gm. grade to 1 part of a 24p. a gm. If the mixture is changed to 1 part of the 33p. a gm. to 2 parts of the less expensive grade, how much will the shop save in blending 100 gms.

- A.Rs.90
- B.Rs.1.00
- C.Rs.3.00
- D.Rs.8.00

Ans.C

13. There are 200 questions on a 3 hr examination. Among these questions are 50 mathematics problems. It is suggested that twice as much time be spent on each maths problem as for each other question. How many minutes should be spent on mathematics problems

- A.36
- B.72
- C.60
- D.100

Ans.B

14. In a group of 15, 7 have studied Latin, 8 have studied Greek, and 3 have not studied either. How many of these studied both Latin and Greek

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- A.0
- B.3
- C.4
- D.5

Ans.B

15.If $13 = 13w/(1-w)$,then $(2w)^2 =$

- A.1/4
- B.1/2
- C.1
- D.2

Ans.C

16. If a and b are positive integers and $(a-b)/3.5 = 4/7$, then

- (A) $b < a$
- (B) $b > a$
- (C) $b = a$
- (D) $b \neq a$

Ans. A

17. In june a baseball team that played 60 games had won 30% of its game played. After a phenomenal winning streak this team raised its average to 50% .How many games must the team have won in a row to attain this average?

- A. 12
- B. 20
- C. 24
- D. 30

Ans.

C

18. M men agree to purchase a gift for Rs. D. If three men drop out how much more will each have to contribute towards the purchase of the gift/

- A. $D/(M-3)$
- B. $MD/3$
- C. $M/(D-3)$
- D. $3D/(M^2-3M)$

Ans.D

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19. A company contracts to paint 3 houses. Mr. Brown can paint a house in 6 days while Mr. Black would take 8 days and Mr. Blue 12 days. After 8 days Mr. Brown goes on vacation and Mr. Black begins to work for a period of 6 days. How many days will it take Mr. Blue to complete the contract?

- A. 7
- B. 8
- C. 11
- D. 12

Ans. C

20. 2 hours after a freight train leaves Delhi a passenger train leaves the same station travelling in the same direction at an average speed of 16 km/hr. After travelling 4 hrs the passenger train overtakes the freight train. The average speed of the freight train was?

- A. 30
- B. 40
- C. 58
- D. 60

Ans. B

21. If $9x - 3y = 12$ and $3x - 5y = 7$ then $6x - 2y = ?$

- A. -5
- B. 4
- C. 2
- D. 8

Ans. D

22. There are 5 red shoes, 4 green shoes. If one draw randomly a shoe what is the probability of getting a red shoe

Ans $\frac{5C_1}{9C_1}$

23. What is the selling price of a car? If the cost of the car is Rs.60 and a profit of 10% over selling price is earned

Ans: Rs66/-

24. $\frac{1}{3}$ of girls, $\frac{1}{2}$ of boys go to canteen. What factor and total number of classmates go to canteen.

Ans: Cannot be determined.

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25. The price of a product is reduced by 30% . By what percentage should it be increased to make it 100%

Ans:42.857%

26. There is a square of side 6cm . A circle is inscribed inside the square. Find the ratio of the area of circle to square.

Ans. 11/14

27. There are two candles of equal lengths and of different thickness. The thicker one lasts of six hours. The thinner 2 hours less than the thicker one. Ramesh lights the two candles at the same time. When he went to bed he saw the thicker one is twice the length of the thinner one. How long ago did Ramesh light the two candles .

Ans: 3 hours.

28. If $M/N = 6/5$, then $3M+2N = ?$

29. If $p/q = 5/4$, then $2p+q= ?$

30. If PQRST is a parallelogram what is the ratio of triangle PQS & parallelogram PQRST .

Ans: 1:2

31. The cost of an item is Rs 12.60. If the profit is 10% over selling price what is the selling price ?

Ans: Rs 13.86/-

32. There are 6 red shoes & 4 green shoes . If two of red shoes are drawn what is the probability of getting red shoes

Ans: $6C_2/10C_2$

33. To 15 lts of water containing 20% alcohol, we add 5 lts of pure water. What is % alcohol.

Ans : 15%

34. A worker is paid Rs.20/- for a full days work. He works $1, 1/3, 2/3, 1/8, 3/4$ days in a week. What is the total amount paid for that worker ?

Ans : 57.50

35. If the value of x lies between 0 & 1 which of the following is the largest?

- (a) x
- (b) x^2
- (c) -x
- (d) $1/x$

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Ans : (d)

36. If the total distance of a journey is 120 km .If one goes by 60 kmph and comes back at 40kmph what is the average speed during the journey?

Ans: 48kmph

37. A school has 30% students from Maharashtra .Out of these 20% are Bombay students. Find the total percentage of Bombay?

Ans: 6%

38. An equilateral triangle of sides 3 inch each is given. How many equilateral triangles of side 1 inch can be formed from it?

Ans: 9

39. If $A/B = 3/5$, then $15A = ?$

Ans : 9B

40. Each side of a rectangle is increased by 100% .By what percentage does the area increase?

Ans : 300%

41. Perimeter of the back wheel = 9 feet, front wheel = 7 feet on a certain distance, the front wheel gets 10 revolutions more than the back wheel .What is the distance?

Ans : 315 feet.

42. Perimeter of front wheel =30, back wheel = 20. If front wheel revolves 240 times. How many revolutions will the back wheel take?

Ans: 360 times

43. 20% of a 6 litre solution and 60% of 4 litre solution are mixed. What percentage of the mixture of solution

Ans: 36%

44.City A's population is 68000, decreasing at a rate of 80 people per year. City B having population 42000 is increasing at a rate of 120 people per year. In how many years both the cities will have same population?

Ans: 130 years

45.Two cars are 15 kms apart. One is turning at a speed of 50kmph and the other at 40kmph . How much time will it take for the two cars to meet?

Ans: 3/2 hours

46.A person wants to buy 3 paise and 5 paise stamps costing exactly one rupee. If he buys which of the following number of stamps he won't able to buy 3 paise stamps

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Ans: 9

47. There are 12 boys and 15 girls, How many different dancing groups can be formed with 2 boys and 3 girls.

48. Which of the following fractions is less than $\frac{1}{3}$

- (a) $\frac{22}{62}$
- (b) $\frac{15}{46}$
- (c) $\frac{2}{3}$
- (d) 1

Ans: (b)

49. There are two circles, one circle is inscribed and another circle is circumscribed over a square. What is the ratio of area of inner to outer circle?

Ans: 1 : 2

50. Three types of tea the a,b,c costs Rs. 95/kg,100/kg and70/kg respectively. How many kgs of each should be blended to produce 100 kg of mixture worth Rs.90/kg, given that the quantities of band c are equal

- a)70,15,15
- b)50,25,25
- c)60,20,20
- d)40,30,30

Ans. (b)

51. in a class, except 18 all are above 50 years.15 are below 50 years of age. How many people are there

- (a) 30
- (b) 33
- (c) 36
- (d) none of these.

Ans. (d)

52. If a boat is moving in upstream with velocity of 14 km/hr and goes downstream with a velocity of 40 km/hr, then what is the speed of the stream ?

- (a)13km/hr
- (b)26km/hr
- (c)34km/hr
- (d) none of these

Ans. A

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53. Find the value of $(0.75 * 0.75 * 0.75 - 0.001) / (0.75 * 0.75 - 0.075 + 0.01)$

- (a) 0.845
- (b) 1.908
- (c) 2.312
- (d) 0.001

Ans. A

54. A can have a piece of work done in 8 days, B can work three times faster than the A, C can work five times faster than A. How many days will they take to do the work together ?

- (a) 3 days
- (b) 8/9 days
- (c) 4 days
- (d) can't say

Ans. B

55. A car travels a certain distance taking 7 hrs in forward journey, during the return journey increased speed 12km/hr takes the times 5 hrs. What is the distance travelled

- (a) 210 kms
- (b) 30 kms
- (c) 20 kms
- (d) none of these

Ans. B

56. Instead of multiplying a number by 7, the number is divided by 7. What is the percentage of error obtained ?

57. Find $(7x + 4y) / (x - 2y)$ if $x/2y = 3/2$?

- (a) 6
- (b) 8
- (c) 7
- (d) data insufficient

Ans. C

58. A man buys 12 lts of liquid which contains 20% of the liquid and the rest is water. He then mixes it with 10 lts of another mixture with 30% of liquid. What is the % of water in the new mixture?

59. If a man buys 1 lt of milk for Rs.12 and mixes it with 20% water and sells it for Rs.15, then what is the percentage of gain?

60. Pipe A can fill a tank in 30 mins and Pipe B can fill it in 28 mins. If 3/4th of the tank is filled by Pipe B alone and both are opened, how much time is required by both the pipes to fill the tank completely ?

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61. If on an item a company gives 25% discount, they earn 25% profit. If they now give 10% discount then what is the profit percentage.

- (a) 40%
- (b) 55%
- (c) 35%
- (d) 30%

Ans. D

62. A certain number of men can finish a piece of work in 10 days. If however there were 10 men less it will take 10 days more for the work to be finished. How many men were there originally?

- (a) 110 men
- (b) 130 men
- (c) 100 men
- (d) none of these

Ans. A

63. In simple interest what sum amounts of Rs. 1120/- in 4 years and Rs. 1200/- in 5 years ?

- (a) Rs. 500
- (b) Rs. 600
- (c) Rs. 800
- (d) Rs. 900

Ans. C

64. If a sum of money compound annually amounts of thrice itself in 3 years. In how many years will it become 9 times itself.

- (a) 6
- (b) 8
- (c) 10
- (d) 12

Ans A

65. Two trains move in the same direction at 50 kmph and 32 kmph respectively. A man in the slower train observes the 15 seconds elapse before the faster train completely passes by him. What is the length of faster train ?

- (a) 100m
- (b) 75m
- (c) 120m
- (d) 50m

Ans B

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66. How many meshes are there in 1 square meter of wire gauge if each mesh is 8mm long and 5mm wide ?

- (a) 2500
- (b) 25000
- (c) 250
- (d) 250000

Ans B

67. $x\%$ of y is $y\%$ of ?

- (a) x/y
- (b) $2y$
- (c) x
- (d) can't be determined

Ans. C

68. The price of sugar increases by 20%, by what % should a housewife reduce the consumption of sugar so that expenditure on sugar can be same as before ?

- (a) 15%
- (b) 16.66%
- (c) 12%
- (d) 9%

Ans B

69. A man spends half of his salary on household expenses, $\frac{1}{4}$ th for rent, $\frac{1}{5}$ th for travel expenses, the man deposits the rest in a bank. If his monthly deposits in the bank amount 50, what is his monthly salary ?

- (a) Rs.500
- (b) Rs.1500
- (c) Rs.1000
- (d) Rs. 900

Ans C

70. The population of a city increases @ 4% p.a. There is an additional annual increase of 4% of the population due to the influx of job seekers, find the % increase in population after 2 years ?

71. The ratio of the number of boys and girls in a school is 3:2 Out of these 10% the boys and 25% of girls are scholarship holders. % of students who are not scholarship holders.?

72. 15 men take 21 days of 8 hrs. each to do a piece of work. How many days of 6 hrs. each would it take for 21 women if 3 women do as much work as 2 men?

- (a) 30
- (b) 20
- (c) 19
- (d) 29

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Ans. A

73. A cylinder is 6 cms in diameter and 6 cms in height. If spheres of the same size are made from the material obtained, what is the diameter of each sphere?

- (a) 5cms
- (b) 2cms
- (c) 3cms
- (d) 4 cms

Ans C

74. A rectangular plank $(2)^{1/2}$ meters wide can be placed so that it is on either side of the diagonal of a square shown below.(Figure is not available)What is the area of the plank?

Ans : $7*(2)^{1/2}$

75. The difference b/w the compound interest payable half yearly and the simple interest on a certain sum lent out at 10% p.a for 1 year is Rs 25. What is the sum?

- (a)Rs.15000
- (b)Rs.12000
- (c)Rs.10000
- (d) none of these

Ans C

76. What is the smallest number by which 2880 must be divided in order to make it into a perfect square ?

- (a) 3
- (b) 4
- (c) 5
- (d) 6

Ans. C

77. A father is 30 years older than his son however he will be only thrice as old as the son after 5 years what is father's present age ?

- (a)40yrs
- (b)30yrs
- (c)50yrs
- (d) none of these

Ans. A

78. An article sold at a profit of 20% if both the cost price and selling price would be Rs.20/- the profit would be 10% more. What is the cost price of that article?

29. If an item costs Rs.3 in '99 and Rs.203 in '00.What is the % increase in price?

- (a)200/3%
- (b)200/6%

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- (c) 100%
- (d) none of these

Ans. A

80. 5 men or 8 women do equal amount of work in a day. a job requires 3 men and 5 women to finish the job in 10 days how many woman are required to finish the job in 14 days.

- a) 10
- b) 7
- c) 6
- d) 12

Ans 7

81. A simple interest amount of rs 5000 for six month is rs 200. what is the anual rate of interest?

- a) 10%
- b) 6%
- c) 8%
- d) 9%

Ans 8%

82. In objective test a correct **Ans** score 4 marks and on a wrong **Ans** 2 marks are ---. a student score 480 marks from 150 question. how many **Ans** were correct?

- a) 120
- b) 130
- c) 110
- d) 150

Ans 130.

83. An artical sold at amount of 50% the net sale price is rs 425 .what is the list price of the artical?

- a) 500
- b) 488
- c) 480
- d) 510

Ans 500

84. A man leaves office daily at 7pm A driver with car comes from his home to pick him from office and bring back home,One day he gets free at 5:30 and instead of waiting for driver he starts walking towards home.In the way he meets the car and returns home on car He reaches home 20 minutes earlier than usual.In how much time does the man reach home usually?

Ans. 1hr 20min

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85. A works thrice as much as B. If A takes 60 days less than B to do a work then find the number of days it would take to complete the work if both work together?

Ans. 22½days

86. How many 1's are there in the binary form of $8*1024 + 3*64 + 3$

Ans. 4

87. In a digital circuit which was to implement $(A \oplus B) + (A \oplus B)$, the designer implements $(A \oplus B) \oplus (A \oplus B)$, What is the probability of error in it ?

88. A boy has Rs 2. He wins or loses Re 1 at a time. If he wins he gets Re 1 and if he loses the game he loses Re 1. He can lose only 5 times. He is out of the game if he earns Rs 5. Find the number of ways in which this is possible?

Ans. 16

89. If there are $1024*1280$ pixels on a screen and each pixel can have around 16 million colors, Find the memory required for this?

Ans. 4MB

90. On a particular day A and B decide that they would either speak the truth or will lie. C asks A whether he is speaking truth or lying? He answers and B listens to what he said. C then asks B what A has said. B says "A says that he is a liar" What is B speaking ?

- (a) Truth
- (b) Lie
- (c) Truth when A lies
- (d) Cannot be determined

Ans. (b)

91. What is the angle between the two hands of a clock when time is 8:30

Ans. 75(approx)

92. A student is ranked 13th from right and 8th from left. How many students are there in totality ?

93. A man walks east and turns right and then from there to his left and then 45 degrees to his right. In which direction did he go

Ans. North west

94. A student gets 70% in one subject, 80% in the other. To get an overall of 75% how much should get in third subject.

95. A man shows his friend a woman sitting in a park and says that she the daughter of my grandmother's only son. What is the relation between the two

Ans. Daughter

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96. How many squares with sides $\frac{1}{2}$ inch long are needed to cover a rectangle that is 4 ft long and 6 ft wide

- (a) 24
- (b) 96
- (c) 3456
- (d) 13824
- (e) 14266

97. If $a = \frac{2}{3}b$, $b = \frac{2}{3}c$, and $c = \frac{2}{3}d$ what part of d is b

- (a) $\frac{8}{27}$
- (b) $\frac{4}{9}$
- (c) $\frac{2}{3}$
- (d) 75%
- (e) $\frac{4}{3}$

Ans. (b)

98. Successive discounts of 20% and 15% are equal to a single discount of

- (a) 30%
- (b) 32%
- (c) 34%
- (d) 35%
- (e) 36

Ans. (b)

99. The petrol tank of an automobile can hold g liters. If a liters was removed when the tank was full, what part of the full tank was removed?

- (a) $g-a$
- (b) $\frac{g}{a}$
- (c) $\frac{a}{g}$
- (d) $\frac{g-a}{a}$
- (e) $\frac{g-a}{g}$

Ans. (c)

100. If $\frac{x}{y} = 4$ and y is not '0' what % of x is $2x-y$

- (a) 150%
- (b) 175%
- (c) 200%
- (d) 250%

Ans. (b)

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INFOSYS Latest Fresher Placement Question Paper 30

1. A begger collects cigarette stubs and makes one full cigarette with every 7 stubs. Once he gets 49 stubs. How many cigarettes can he smoke totally?

Ans: 8.

2. A soldier loses his way in a thick jungle at random walks from his camp but mathematically in an interesting fashion. First he walks one mile east then half mile to north. Then $1/4$ mile to west, then $1/8$ mile to south and so on making a loop. Finally how far he is from his camp and in which direction.

Ans: In north and south directions $1/2 - 1/8 + 1/32 - 1/128 + 1/512 -$ and so on = $1/2 / ((1 - (-1/4)))$ similarly in east and west directions $1 - 1/4 + 1/16 - 1/64 + 1/256 -$ and so on = $1 / ((1 - (-1/4)))$.

Add both the **Answers**.

INFOSYS Latest Fresher Engineer Placement Sample Question Paper 30

3. How 1000000000 can be written as a product of two factors neither of them containing zeros?

Ans: 2 power 9 x 5 power 9 (check the **Answer**).

4. Conversation between two mathematicians:

First : I have three children. The product of their ages is 36. If you sum their ages, it is exactly same as my neighbour's door number on my left.

The second mathematician verifies the door number and says that the clue is not sufficient. Then the first says " OK, one more clue is that my youngest is the youngest". Immediately the second mathematician **Answers**. Can you **Answer** the question asked by the first mathematician? What are the children's ages?

Ans: 2 and 3 and 6.

5. Light glows for every 13 seconds. How many times did it between 1:57:58 and 3:20:47 AM?

Ans: $383 + 1 = 384$.

6. 500 men are arranged in an array of 10 rows and 50 columns. ALL tallest among each row are asked to fall out. And the shortest among them is A. Similarly after resuming that to their original positions that the shortest among each column are asked to fall out. And the longest among them is B. Now who is taller among A and B?

Ans: A.

7. A person spending out $1/3$ for cloths, $1/5$ of the remaining for food and $1/4$ of the

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remaining for travels. He is left with Rs 100/-. How he had in the beginning?

Ans: Rs 250/-.

8. There are six boxes containing 5, 7, 14, 16, 18, 29 balls of either red or blue in colour. Some boxes contain only red balls and others contain only blue. One sales man sold one box out of them and then he says "I have the same number of red balls left out as that of blue". Which box is the one he sold out?

Ans: Total no of balls = 89 and $(89-29)/2 = 60/2 = 30$ and also $14 + 16 = 5 + 7 + 18 = 30$.

9. A chain is broken into three pieces of equal lengths, containing 3 links each. It is taken to a blacksmith to join into a single continuous one. How many minimum number of links are to be opened to make it?

Ans: 2.

10. Grass in lawn grows equally thick and in a uniform rate. It takes 24 days for 70 cows and 60 for 30 cows. How many cows can eat away the same in 96 days?

Ans: 18 or 19.

11. There is a certain four digit number whose fourth digit is twice the first digit. Third digit is three more than second digit. Sum of the first and fourth digits twice the third number. What was that number?

Ans: 2034 and 4368.

1. value of N and! K is 100
2. N is divided by K and the integer part of the quotient is stored in I.
3. N is divided by K and the remainder is stored in K
4. I is multiplied by itself to get the new value of I
5. if the value of I and J are equal then N is printed
6. add 1 to N
7. if the value of N exceeds 999 then stop.
8. go to step 2

The result of the above logic is

- a) 124, 248, 369
 - b) 101, 204, 309,
 - c) 111, 222, 333, ...
 - d) none
- Ans.** (b)

- 2)
 1. Sony = 0

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2. jimmy = 1
3. Add jimmy to sony to get new jimmy
4. add sony to jimmy to get new jimmy.
5. if jimmy is equal to 34 then stop
6. go to step 3
What is the value of Sony when the logic terminates.
a) 15 b) 18 c) 21 d) none
Ans:d(check)

3)
get the cost of the item (C)
1. get the no of items (N)
2. multiply N by C to get total cost (TC)
3. if Tc is above 10000 then discount (d) = 5%
4. if TC
is less than 10000 but more than 5000 and C is above
85 then
D = 4.5 %
5. if Tc is less than 5000 and C > 65 and N > 50 then D = 4%
What will be the discount if 40 items were purchased
each costing Rs
58'
a) 5% b) 4.5% c) 4% d) none
Ans:d(check)

4)
the average age of a class of 45 is 20 years. the age
of the teacher
is
30 years. the the average age of the 45 people
together is
1. $j = z * 1$ /* here * means multiplication */
2. $m = j + 30$
3. $z = 20$
4. $r = m / (l + 1)$
5. $l = 45$
the above logic represents the solution of the given
problem. the
correct sequence is
a) 5-3-1-4-2 b) 5-3-1-2-4 c) 5-3-2-1-4 d) none
Ans:b(check)

5)
1. $k = 10$
2. add 1 to k to get the value of z
3. p = quotient of z divided by 10
and some statements are there...
8. Go to 2
the result of the above steps is
a) 11, 22, 33, b) 21, 32, 33, ... c) 12, 23, 24, ... d) none

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Ans! ...**(b)**

6) A long flow chat
FN=10----- k=10----- divide FN by K and

.....
the number of values that are printed are
a) 9 b) 19 c) 29 d)none

Ans (a)

7)
1. cost of iteam C= Rs 50
2. total cost TC= 0
3.number of iteams purchased =1
4.TC= TC+C
5.if the remainder of N divided by 5 is 0 then reduce
Rs. 10 from C
6.increase the value of N by 1
using the above rule, how much money should one pay
after buying 12
iteams

a)480 b) 510c)540 d) none

Ans.....**(b)**

check the **Answer**.

8)flow chat
every applicants takes 3 tests. the candidate is
selected if he/she
secures 80 % above in the aggregate and 75% and above
atleast two
testes.

all tests are evaluated to 100 marks.
C=0----- Get T1,T2,T3----- Is T174.....

.....
if a candidate scores 96, 78, 68 in the three testes
going by the
above
logic, his result will be
a! ns...(b) selected

9)flow chat
R=8 and J= 5 ----- print R-----L= R+j

.....
the out put of the above logic is
Ans (d) none

10)flow chat
N= 100 ----- D=INT(N/100) ----- K=remainder
(N/100)

..... print N
if the no like 244, 514,136 etc are to printed from

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the above logic ,
the ? should be replaced with ...
Ans.d(check).....

- 11)
1. let the value of FN be 1
 2. let the value of A be 2
 3. Let the new value of FN be FN multiplied by A and add 1 to it.
 4. Write the value of FN
 5. If the value written is more than 777 then stop
 6. -----
 7. go to step 3
- if the expected out put from the above logic is
3,10,41,206,1237,
then
the statement in the line 6 should be
(a) let the value of A be A multiplied by A (b)
add A to A
(c) add 1 to A (d) ! none

Ans......(c) add 1 to a

12) flow chat

$N=2$ ---- $R= N+1$, ----- print J---- $N=N+1$ ----.is
N9 ?
 $J=N \times$
R .
|
^
&n! bsp;
no |
the result of the above logic is
(a) 6,8,14... (b) 6,12,20,30
(c) 6,12,18,24...(d) none

Ans......(b)

- 13)
- the followig qualification are necessary for
recruitment of a
librarian
- . the candidate must
 - 1. have master degree in library science with at least 55% mark.
 - 2. have one year specialization in IT
 - 3. have at least 10 yrs experience in university
- In case the candidate
- 4. has 15 yrs experience in college ,the case may be

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referred to vice
chancellor

5. has obtained less than 55% marks but has 13 yrs
expt. in university

, the case may be to registrar

6. has PHD in library sc./documentation, the condition 1
may be waived.

Gopal Brahma has been deputy librarian of SLC
university since 1982

and

has a master degree! in library sc. with 53% . given
the above rules

and Gopal's information, Gopal should be

(a) selected (b) rejected (c) referred to V-C (d)

none

Ans.....d:none(check)

14). flow chart **Ans**:a

15

1. R=2

2. J=R*R-R

3. R=R+1

4. K=R*R-R

5. print K-J

6. let J=K

7. if R.8 then stop

8. go to 3

the result of the above logic is

(a) 4,9,16,25.... (b) 4,6,8,10.... (c) 4,4,4,4....

(d) none

Ans (b)(check)

**16 flow chart is remainder

of

N=66----D=N/2---N=D+1----- N/2=0 -----stop

^!

|

|

|no

!;

after how much iteration will the above logic

terminate

(a) 8 (b) 6 (c) 7 (d) none **Ans**.(d)

check

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17).

1. $T=1$

2. $T1=T*1000$

3. $T2=T+1$

4. $T3=T2*100$

5. $T4=T2+1$

6. $T5=T4*10$

7. $T6=T4+1$

8. $T7=T1+T3+T6+T5$

9. print T7

10. $T=T+1$

11. if $T < 8$ then 2

12. stop

which of the following value will not printed by above logic

(a)6789 (b)7890 (c)7900 (d) none

Ans (b) 7890

q18))

Ans: c is j10 hint: $k=3, j=2, \dots$

Q19)

flowchart

Ans: a)200

Q20)

flowchart

Ans: a)21

Q21)

flowchart

Ans: a)10 (confirm the question)

q22)

flowchart

Ans: c($4x+8y$)

q23)

Ans: c)4-6-5-1-3-2

q24)flowchart

Ans: b(17)

q25)a person distribute his pen among four friends in the ratio

$1/3, 1/4, 1/5, 1/6, \dots$

Ans: b(minimum he should have)

Q26)

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1. let the value of N be 10
 2. divide N by 10 to give quotient (Q) remainder(R)
 3. diff=R-Q
 4. if diff=1 then 6
 5. go to step 7
 6. display the value of N
 7. add 1 to N
 8. if N < 100 go to step 2
- the above logic will produce
(a) 11, 12, 13, 14.. (b) 12, 23, 34, (C) 21, 32, 4, 354..... (d) none

Ans: d(none)

Q27) flowchart

Ans: b(36, 45, 25)

Q28) flowchart

Ans: b(375)

Q29) a man has Rs. 128 in currency of one rupee.....

Ans: a(24)

Q30) when A is divided by B, it is reqd to round off the result to the

nearest whole no, the logic is given below. give the correct sequence

1. divide A by B giving correct sequence
 2. subtract INTEGER(A/B) from C and store the result in D
 3. if remainder (A/B) is 0 then stop
 4. print INTEGER (A/B)
 5. if D > 49, increase the value of INTEGER (A/B) by 1
- (A) 1, 3, 2, 5, 4 (B) 1, 3, 2, 4, 5 (C) 1, 2, 3, 5, 4 (D) none

Ans: a(1, 3, 2, 5, 4)

Q31) A cistern is filled by 9 hours.....

Ans: a) 90 hours

Q32)

Ans: c(42)

Q33)

flowchart

Ans: d(none)

**34

When Madan said that he was born on 31-9-83, everybody

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logical sequence of steps involved in reducing madan's statement r given below

1. if the day of birth is Y(month of birth)then wrong
2. since 1983 is not a leap year february has 28 days
3. store 31,28,31,....31 in an array y(12)
4. month of birth is not less than 1 and not greater than 12, therefore month of birth is valid

the right sequence of steps is

- a)3-1-4-2
- b)3-2-4-1
- c)3-2-1-4
- d)none

Ans:b(check)

35).

the logic to! convert a 3 digit number to a word is given, Ex 123 should be written as One Two Three

1. accept the number N
2. if $N < 100$ or $N > 999$ go to step 1
3. Split N into hundreds(H), Tens (T), & Units(U)
4. Store words zero,one,two,..... in array W(10)
5. print W(H),W(T),W(U)
6. Stop

The above logic is

- a) incomplete
- b) complete
- c) complete but inefficient
- d)none

Ans: b

36)

given a number which is more than 99 but less than 1000, the logical sequence of steps to say how many hundreds, tens & units are in the given number is given below.identify the logical order.

- 1.get the number N
- 2.write quotient and the words 'tens'
- 3.write the remainder and the words "units"
- 4.write the quotient and the word "hundred"
- 5.divide the number N by 100 and get the quotient and

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remainder

6. divide the remainder by 10 giving the quotient and remainder

(a) 1,5,6,2,3,4 (b) 1,5,4,3,2,6 (c) 1,5,4,6!, 2,3(d)

none

Ans: c

****37.**

step 1. no of toffees in hand (TIH)=2

2. no of picks (NOP) = 1

3. Multiply TIH by 2

4. Add 1 to NOP

5. If NOP is less than 4 then step 3

6. Print TIH

7. Stop

The value of TIH at the end of execution of logic is

a) 16 b) 24 c) 30 d) None

Ans: a

Q38)

flowchart

Ans: b (1,2,4,8,16,32,32,16,8,4,2,1)

Q39)

flowchart

Ans: b(2)

Q40)

Ans: a) 17

Q41)

Ans: b(6 days)

Q42)

flowchart

Ans: b(I=468, II=468)

Q43)

the logical sequence of steps to calculate the average of N nos is

given below

1. let the sum(S) of N nos be zero

2. get the value of N

3. let the value of A be N

4. add N to S

5. add 1 to A

6. if A is not = N then go to 4

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7. compute average by dividing S by N
the above logic is
(a) correct (b) incorrect (c) inadequate data (d) none

Ans: b (incorrect)

Q44)

indent! ify the correct logical order to write ur name
in reverse order

1. count the no of alphabets in ur name (L)
 2. if $L=0$ stop
 3. reduce the value of L by 1
 4. write the L th character
 5. transfer control to the step where the value of L is reduce
- (a) 1,4,3,5,2 (B) 1,4,3,2,5 (c) 1,3,4,2,5, (d) none

Ans: d // b(14325) // a(1,4,3,5,2)

**45.

six girls A,B,C,D,E & F have 10 marbles each. a & B
take 4 marbles
each
from D & E respectively. C gives 3 marbles to F who in
turn gives 2
marbles to D & 4 marbles to E. E takes back the
marbles she had given
to B
and gives them to C.

The equations r given below

1. $A=A+4$
2. $B=B+4$
3. $D=D-4$
4. $E=E-4$
5. $F=F+3$
6. $F=F-2$
7. $F=F-4$
8. $C=C-3$
9. $D=D+2$
10. $E=E+4$
11. $B=B-4$
- 1! 2. $C=C+4$

The above sequence of steps are
a) Complete b) Incomplete c) Incorrect d) none

Ans: b

46.

Subtract 3 from the number X . Multiply the result by
3, Add 3 & then

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divide this result by 3. The final result is

Ans:a

a) X-2 b)X+2 c)X+1 d) X

47.

Given a sentence which has only lower case letters and which ends with

a period (.), you r asked to count the number of vowels & consonants.

The logical sequence of steps r given below. Arrange them in correct order.

1. If character = a,e,i,o or u increase VC by 1 else increase CC by 1.

2. Print VC,CC

3. Read a character

4. If character read is . then go to print VC,CC

5. Go to read a character

6. Stop

7. Initialise VC & CC to 0

ur logical sequence of steps r

a)7,3,4,1,5,2,6 b)7,4,3,1,2,5,6 c)7,3,4,! 5,1,2,6

d)none

Ans:c

48.

1.number of units consumed(NUC) = Closing reading - Opening reading

2. if NUC is less than 100 units then 5

3. if NUC is less than 200 units then 6

4. if NUC is less than 300 units then 7

5. CHARGE=NUC

6.CHARGE = 100+(NUC-100)*2

7.CHARGE=300 +(NUC -200)*3

8. Print CHARGE

if the opening reading is 785 and the Closing reading is 865, CHARGE

is

a)80 b)60 c)-60 d)None

Ans:a // d

Q49)

Ans: c)3,7,1,2,5,6,4

Q50)

flowchart

Ans:b(prints multiplication table from 1 to 10)

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ANTONYMS

1. Disregarded

- (a) heed
- (b) hopeful
- (c) evade
- (d) dense

Ans. (a)

2. Obviate

- (a) becloud
- (b) necessitate
- (c) rationalize
- (d) execute

Ans. (b)

3. Superficial

- (a) profound
- (b) exaggerated
- (c) subjective
- (d) spirited

Ans. (a)

4. Abide

- (a) retract an offer
- (b) refuse to endure
- (c) shield from harm
- (d) exonerate

Ans. (b)

5. Acerbity

- (a) noteworthiness
- (b) hypocrisy
- (c) mildness of temperament
- (d) lack of anxiety

Ans. (c)

Directions: Each question or group of questions is based on a passage or set of conditions. For each question, select the best *Answer* choice given.

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Questions 6-9

In a certain society, there are two marriage groups, Red and Brown. No marriage is permitted within a group. On marriage, males become part of their wife's group: women remain in their own group. Children belong to the same group as their parents. Widowers and divorced males revert to the group of their birth. Marriage to more than one person at the same time and marriage to a direct descendant are forbidden.

6. A Brown female could have had
- I. a grandfather born Red
 - II. a grandmother born Red
 - III. two grandfathers born Brown

- (a) I only
- (b) II only
- (c) I and II only
- (d) II and III only
- (e) I,II and III

Ans. (c)

7. A male born into the Brown group may have

- (a) an uncle in either group
- (b) a Brown daughter
- (c) a Brown son
- (d) a son-in-law born into the Red group
- (e) a daughter-in-law in the Red group

Ans. (a)

8. Which of the following is not permitted under the rules stated?

- (a) A Brown male marrying his father's sister
- (b) A Red female marrying her mother's brother
- (c) A man born Red, who is now a widower, marrying his brother's widow
- (d) A widower marrying his wife's sister
- (e) A widow marrying her divorced daughter's ex-husband

Ans. (b)

9. If widowers and divorced males retained the group they had upon marrying, which of the following would have been permissible?(Assume no previous marriages occurred)

- (a) A woman marrying her dead sister's husband
- (b) A woman marrying her divorced daughter's ex-husband.
- (c) A widower marrying his brother's daughter
- (d) A woman marrying her mother's brother, who is a widower
- (e) A divorced male marrying his ex-wife's divorced sister

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Ans. (d)

Questions 10-13

Tom wishes to enroll in Latin AA, Sanskrit A, Armenian Literature 221, and Celtic Literature 701. Latin AA meets five days a week, either from 9 to 11 A.M or from 2 to 4 P.M. *Sanskrit A* meets either Tuesday and Thursday from 12 noon to 3 P.M., or Monday, Wednesday, and Friday from 10 A.M to 12 noon. Armenian Literature 221 meets either Monday, Wednesday, and Friday from 12:30 to 2 P.M., or Tuesday and Thursday from 10:30 A.M to 12:30 P.M Celtic Literature 701 meets by arrangement with the instructor, the only requirement being that it meet for one four-hour session or two two-hour sessions per week, between 9A.M and 4 P.M from Monday to Friday, beginning on the hour.

10. Which combination is impossible for Tom?

- (a) Latin in the morning, Sanskrit on Tuesday and Thursday, and Armenian Literature on Monday, Wednesday, Friday
- (b) Latin in the afternoon and Sanskrit and Armenian Literature on Monday, Wednesday, and Friday.
- (c) Latin in the afternoon, Sanskrit on Monday, Wednesday, and Friday, and Armenian Literature on Tuesday and Thursday
- (d) Latin in the morning and Sanskrit and Armenian Literature on Monday, Wednesday, and Friday
- (e) Latin in the afternoon, Armenian Literature on Monday, Wednesday and Friday, and Celtic Literature on Tuesday

Ans. (d)

11. Which of the following gives the greatest number of alternatives for scheduling Celtic Literature, assuming that all other courses

- (a) Latin in the afternoon and Armenian Literature Monday, Wednesday and Friday
- (b) Sanskrit on Tuesday and Thursday and Armenian Literature on Monday, Wednesday and Friday
- (c) Latin in the afternoon and Armenian Literature Tuesday and Thursday
- (d) Latin in the morning and Sanskrit on Tuesday and Thursday
- (e) Sanskrit on Monday, Wednesday, and Friday. and Armenian Literature on Tuesday and Thursday

Ans. (a)

12. If the Celtic instructor insists on holding at least one session on Friday, in which of the following can Tom enroll?

- (I) Armenian Literature on Monday, Wednesday, and Friday
- (II) Sanskrit on Monday, Wednesday, and Friday

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- (a) I only
- (b) II only
- (c) both I and II
- (d) I or II but not both
- (e) neither I nor II

Ans. (d)

13. Which of the following additional courses, meeting as indicated, can Tom take?

- (a) Maths--Monday, Wednesday, and Friday from 10A.M to 12 noon
- (b) French--Monday, Wednesday, and Friday from 11A.M to 12:30 P.M
- (c) English--Tuesday and Thursday from 2 to 4 P.M
- (d) Japanese--Tuesday and Thursday from 1 to 3 P.M
- (e) Old Norse-Icelandic--Monday only from 12 to 3 P.M

Ans. (b)

Questions 14-18

- (1) Ashland is north of East Liverpool and west of Coshocton
- (2) Bowling Green is north of Ashland and west of Fredericktown
- (3) Dover is south and east of Ashland
- (4) East Liverpool is north of Fredricktown and east of Dover
- (5) Fredricktown is north of Dover and west of Ashland
- (6) Coshocton is south of Fredricktown and west of Dover

14. Which of the towns mentioned is furthest to the northwest ?

- (a) Ashland
- (b) Bowling Green
- (c) Coshocton
- (d) East Liverpool
- (e) Fredericktown

Ans. (b)

15. Which of the following must be both north and east of Fredricktown?

- (I) Ashland
- (II) Coshocton
- (III) East Liverpool

- (a) I only
- (b) II only
- (c) III only
- (d) I and II
- (e) I and III

Ans. (e)

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16. Which of the following towns must be situated both south and west of at least one other town?

- (a) Ashland only
- (b) Ashland and Fredricktown
- (c) Dover and Fredricktown
- (d) Dover, Coshocton and Fredricktown
- (e) Dover, Coshocton and East Liverpool

Ans. (d)

17. Which of the following statements, if true, would make the information in the numbered statements more specific?

- (a) Coshocton is north of Dover
- (b) East Liverpool is north of Dover
- (c) Ashland is east of Bowling Green
- (d) Coshocton is east of Fredericktown
- (e) Bowling Green is north of Fredericktown

Ans. (a)

18. Which of the numbered statements gives information that can be deduced from one or more of the other statement?

- (a) (1)
- (b) (2)
- (c) (3)
- (d) (4)
- (e) (6)

Ans. (c)

Questions 19-22

Spelunkers International offers exploring tours in eight caves: Abbott, Benny, Caesar, Dangerfield, Ewell, Fields, Guinness, and Hope

- (1) Class 1 spelunkers may not attempt cave Ewell, Fields or Hope
- (2) Class 2 spelunkers may not attempt Hope
- (3) Class 3 spelunkers may attempt any cave
- (4) Cave Caesar may be attempted only by spelunkers who have previously explored cave Benny
- (5) Cave Fields may be attempted only by spelunkers who have previously explored cave Ewell
- (6) Only two of caves Benny, Caesar, Ewell, Fields, and Hope may be attempted by any explorer in a single tour

19. A class 2 spelunker who has previously explored cave Ewell may be restricted in choosing a tour by which rule(s)?

- (I) Rule(4)

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(II) Rule(5)
(III) Rule(6)

- (a) I only
- (b) II only
- (c) I and III only
- (d) II and III only
- (e) I, II and III

Ans. (c)

20. In how many different ways may a class 1 spelunker who has never explored any of the eightcaves before set up a tour of three caves, if she wishes to explore caves Abbott and Caesar?

- (a) 2
- (b) 3
- (c) 4
- (d) 5
- (e) 6

Ans. (b)

21. What is the maximum number of caves that a class 3 spelunker who has previously explored only cave Benny may include in a single tour?

- (a) 4
- (b) 5
- (c) 6
- (d) 7
- (e) 8

Ans. (b)

22. If $x + y = 3$ and $y/x = 2$ then $y = ?$

- (a) 0
- (b) $1/2$
- (c) 1
- (d) $3/2$
- (e) 2

Ans. (e)

23. How many squares with sides $1/2$ inch long are needed to cover a rectangle that is 4 ft long and 6 ft wide

- (a) 24
- (b) 96

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- (c) 3456
- (d) 13824
- (e) 14266

24. If $a = \frac{2}{3}b$, $b = \frac{2}{3}c$, and $c = \frac{2}{3}d$ what part of d is b ?

- (a) $\frac{8}{27}$
- (b) $\frac{4}{9}$
- (c) $\frac{2}{3}$
- (d) 75%
- (e) $\frac{4}{3}$

Ans. (b)

25. Successive discounts of 20% and 15% are equal to a single discount of

- (a) 30%
- (b) 32%
- (c) 34%
- (d) 35%
- (e) 36

Ans. (b)

26. The petrol tank of an automobile can hold g liters. If a liters was removed when the tank was full, what part of the full tank was removed?

- (a) $g-a$
- (b) $\frac{g}{a}$
- (c) $\frac{a}{g}$
- (d) $\frac{g-a}{a}$
- (e) $\frac{g-a}{g}$

Ans. (c)

27. If $\frac{x}{y} = 4$ and y is not '0' what % of x is $2x-y$?

- (a) 150%
- (b) 175%
- (c) 200%
- (d) 250%

Ans. (b)

28. If $2x-y=4$ then $6x-3y=?$

- (a) 15
- (b) 12
- (c) 18
- (d) 10

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Ans. (b)

29. If $x=y=2z$ and $xyz=256$ then what is the value of x ?

- (a) 12
- (b) 8
- (c) 16
- (d) 6

Ans. (b)

30. $(1/10)^{18} - (1/10)^{20} = ?$

- (a) $99/10^{20}$
- (b) $99/10$
- (c) 0.9
- (d) none of these

Ans. (a)

31. Pipe A can fill in 20 minutes and Pipe B in 30 mins and Pipe C can empty the same in 40 mins. If all of them work together, find the time taken to fill the tank

- (a) $17 \frac{1}{7}$ mins
- (b) 20 mins
- (c) 8 mins
- (d) none of these

Ans. (a)

32. Thirty men take 20 days to complete a job working 9 hours a day. How many hours a day should 40 men work to complete the job?

- (a) 8 hrs
- (b) $7 \frac{1}{2}$ hrs
- (c) 7 hrs
- (d) 9 hrs

Ans. (b)

33. Find the smallest number in a GP whose sum is 38 and product 1728

- (a) 12
- (b) 20
- (c) 8
- (d) none of these

Ans. (c)

For Placement

34. A boat travels 20 kms upstream in 6 hrs and 18 kms downstream in 4 hrs. Find the speed of the boat in still water and the speed of the water current?

- (a) $1/2$ kmph
- (b) $7/12$ kmph
- (c) 5 kmph
- (d) none of these

Ans. (b)

35. A goat is tied to one corner of a square plot of side 12m by a rope 7m long. Find the area it can graze?

- (a) 38.5 sq.m
- (b) 155 sq.m
- (c) 144 sq.m
- (d) 19.25 sq.m

Ans. (a)

e-INTERVIEW

GENERAL AWARENESS

1. Who is the father of computers
2. Expand HTML,DMA,FAT,LAN,WAN,FDDetc
3. Which was intel's first microprocessor
4. Convert 1024 (in decimal) to octa and hexadecimal form
5. Give the name of a processor produced by mortorola?
6. What is the full form of WindowsNT ?
7. What is the difference between 8087 and 8086

Two small paragraphs & statements each one have one question

1)

2)

3)JANEY ,FBRILE ,_____

- a)PAVILION b)BEZOR c)**MAROON** d)SEPARATE

4)camel staying across the 1000-mile desert. It grows 3000 bananas. It eats 1 banana each mile. if it has to sale these bananas. It has to cross the 1000-mile desert . it can carry 1000 bananas each time. Then how many bananas would it sale.

Ans: none

5) 82, 97, 114, 133, _____

- a)168 b)123 c)**154** d)176 e)NONE

6) 7100, 23, 11, 6, 3, _____

- a)1 b)6100 c)0 d)4 e)NONE

7) “ We- Aaron, Brian& Clyde –each have some children.

1)Aaron has atleast one girl and twice as many boys as girls.

2)Brian has at least one girl and three times as many boys as girls.

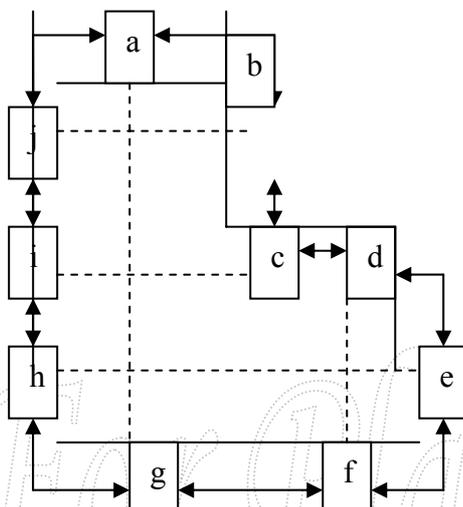
3)Clyde has at least one girl and three more boys than girls.

4)When Itell you the number of children we have altogether- a number less than 25- you will know how many children I have, but not how many children each of the other has. Altogether we have.....”

WHO IS THE SPEAKER?

Ans. Aaron

8)



e-INTERVIEW

Mrs. And Mr. Larchmont invited four married couples to a dinner party. For the party, chairs were placed around an L-shaped table as shown in the figure. Mrs. Larchmont arranged the seating so that:

- 1) Every woman sat next to her husband. (Chairs at the ends of a two-headed arrow are "next to" each other)
- 2) Every woman sat directly across from a man. (Chairs at the ends of a dashed line are "directly across from" each other)
- 3) Mrs. Larchmont sat to the right of Mr. Larchmont.
- 4) Mrs. Larchmont was the only woman who did not sit next to woman.

In which chair-a,b,c,d,e,f,g,h,i,j-did Mrs. Larchmont sit?

Ans. J

9) My house has a number.

1) If my house number is a multiple of 3 ($0*3, 1*3, 2*3, \text{etc.}$), then it is a number from 50 through 59.

2) If my house number is not a multiple of 4, then it is a number from 60 through 69.

3) If my house number is not a multiple of 6, then it is a number from 70 through 79.

What is my house number?

Ans. 76

10) Given set of Statements.

I) Some cloudy days are Cool.

II) All Rainy days are Cloudy.

III) All Cloudy days are Depressing.

IV) If we do not go for a walk it is Rainy day.

Today I do not go for a walk.

Which statement is not TRUE in the below.

a) 2day is Depressing

b) 2day is Cloudy

c) 2day is Cool

d) 2day is Rainy

e) None of the above. (may or may not)

11) I started a South Indian restaurant (Something unnecessary). One man come to the restaurant and orders Idlys. He orders another plate when he is eating the last Idly. He finished eating and give a smile to me & told that "The last Idly was the 100th Idly from five days". He orders 6 more Idlys every day. How many Idlys he ate Yesterday?

12) A Train 108mt. long moving with a speed 50kmph crosses another train 1121mt. long coming from opposite direction in 6sec. What is the speed of the 2nd Train?

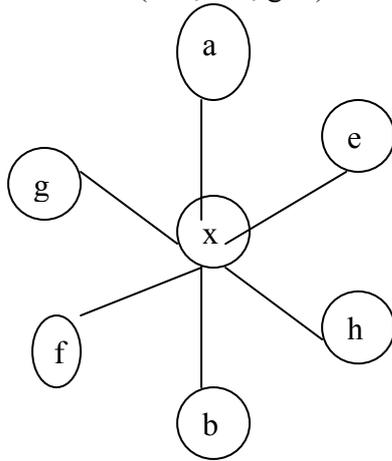
a) 48kmph b) 54kmph c) 66kmph d) 82kmph e) NONE

13) One problem regarding analysis of Graph.

For Placement

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14). The sum of numbers (axb, exf, gxh) are same.



Find the numbers.

(I didn't remember the options)

a) a=, c=, x=, b=, d=, e=, f=, g=, h=

b) x=, c=, b=, x=, d=, h=, f=, g=, e=

c) a=, c=, x=, b=, d=, e=, f=, g=, h=

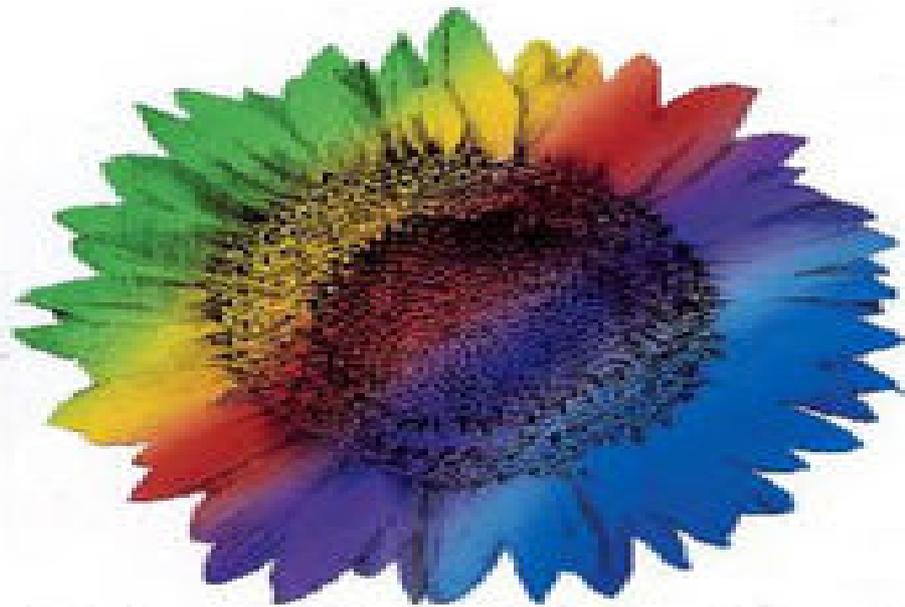
d) a=, c=, x=, b=, d=, e=, f=, g=, h=

e) None

Ans. C(Sum=40)

For Placement

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WIPRO
Applying Thought

For Placement

e-INTERVIEW

WIPRO TECHNOLOGIES

Profile

Wipro, previously known as **Western India Vegetable Products Ltd** was started by **Mr.M.H Premji**. The company manufactured vegetable oil, vegetable ghee and laundry soap. In 1966, upon the untimely demise of M.H. Premji, his son, **Mr.Azim Hasham Premji**, a 21-year-old student of engineering at Stanford University, was called upon to run the company. Under him, Wipro embarked on an ambitious phase of expansion. The business diversified into **fluid power, soaps, toiletries, lighting and baby care products**, and distribution was considerably expanded. Some of the important consumer products made by Wipro include **soaps, baby care products, bulbs, tubelights, shampoos, powder etc**. The financial strength of the consumer care division powered further diversifications, particularly in **infotech and healthcare**.

The Infotech era began in the late seventies and Wipro set up its IT business in **Bangalore** in **1980**. Wipro became the No.1 listed company in the country in just 15 years. In a reorganisation, the firm went public with **Wipro Technologies**, the global IT services subsidiary, whose gross income grew by 65 percent to reach Rs.1042 crore(\$240 million). Wipro's software business was assessed at **SEI CMM Level 5**. Wipro's technology divisions, **global R&D** and **telecom solutions** contributed 46 percent of the software revenue, and the balance was accounted for by **enterprise solutions** business. **E-commerce** contributed 15 percent of enterprise solutions revenue for the year. Sales and other incomes of the second division, **Wipro Infotech**, the Indian IT services and products business that takes care of **networking solutions, customer services, computers and peripherals**, grew by 20 percent to Rs.825 crore.

Wipro Technologies soon plans to tap the global capital body through an issue of American Depository Receipts(ADR) or Global Depository Receipts(GDR). It established its headquarters in Santa Clara, US, with Mr.Vivek Paul as the company's president and CEO.

The **pay package** is around **Rs.17,000(approx.)** for the year 2000 recruits.

Mr.Azim H. Premji is presently the **Chairman**. Mr.Premji owns about 75 percent of the Wipro stock. He also happens to be the richest Indian in the world.

For Placement

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Written Test

The Wipro test consists of 75 questions. It is a multiple choice test with **no negative marking**. The paper emphasizes on your basic 11th and 12th standard physics, chemistry, maths with about 40-45 questions on these three subjects. There are about 10-15 data sufficiency and aptitude questions and about 15-20 technical questions on your respective branch of engineering. A separate paper is held for the various branches of engineering. The PCM and aptitude based questions are the same for everyone and different engineering branches have their own set of questions. Everyone though has an option of writing a hardware or software paper.

Interview

The test is followed by a Technical and a HR interview. The technical interview is highly specialized and covers almost all subjects you have done in your curriculum. However one is required to name his/her favorite subject on which most of the interview is focused. For Computer Engineers C, Operating Systems, DBMS, Microprocessors are mostly focused upon. Electronics Engineers can be grilled on DCLD, Microprocessors and Communications. The HR interview which follows the technical interview is very general. In most cases questions regarding the company are asked.

Wipro Sample Test #1

1. An electron moving in an electromagnetic field moves in a

- (a) In a straight path
- (b) Along the same plane in the direction of its propagation
- (c) Opposite to the original direction of propagation
- (d) In a sine wave

Ans. (b)

2. The total work done on the particle is equal to the change in its kinetic energy

- (a) Always
- (b) Only if the forces acting on the body are conservative.
- (c) Only if the forces acting on the body are gravitational.
- (d) Only if the forces acting on the body are elastic.

Ans. (a)

3. The following unit measure energy:

- (a) Kilo-watt hour.
- (b) Volt*volt/sec*ohm.
- (c) Pascal*foot*foot
- (d) (Coulomb*coulomb)*farad

Ans. (a)

For Placement

4. Astronauts in stable orbits around the earth are in a state of weightlessness because

- (a) There is no gravitational force acting on them.
- (b) The satellite and the air inside it have an acceleration equal to that of gravitational acceleration there.
- (c) The gravitational force of the earth and the sun balance giving null resultant.
- (d) There is no atmosphere at the height at which the satellites move.

Ans. (b)

5. An organ pipe, open at both ends and another organ pipe closed at one end, will resonate with each other, if their lengths are in the ratio of

- (a) 1:1
- (b) 1:4
- (c) 2:1
- (d) 1:2

Ans. (c)

6. During an isothermal expansion of an ideal gas

- (a) Its internal energy increases.
- (b) Its internal energy decreases.
- (c) Its internal energy does not change.
- (d) The work done by the gas is not equal to the quantity of heat absorbed by it.

Ans. (c)

7. A parallel plate capacitor is charged and the charging battery is then disconnected. If the plates of the capacitor are moved further apart by means of insulating handles

- (a) The charge on the capacitor increases.
- (b) The voltage across the plates increases.
- (c) The capacitance increases.
- (d) The electrostatic energy stored in the capacitor decreases.

Ans. (b)

8. Two equal negative charges q are fixed at point $(0, a)$ and $(0, -a)$ on the y -axis. A positive charge Q is released from rest at the point $(2a, 0)$ on the x -axis. The charge Q will

- (a) Execute simple harmonic motion about the origin
- (b) Move to the origin and remain at rest
- (c) Move to infinity
- (d) Execute oscillatory but not simple harmonic motion

Ans. (d)

9. A square conducting loop of length L on a side carries a current I . The magnetic field at the centre of the loop is

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- (a) Independent of L
- (b) Proportional to L^2
- (c) Inversely proportional to L
- (d) Directly proportional to L

Ans. (c)

10. The focal length of a convex lens when placed in air and then in water will

- (a) Increase in water with respect to air
- (b) Increase in air with respect to water
- (c) Decrease in water with respect to air
- (d) Remain the same

Ans. (a)

11. The maximum kinetic energy of the photoelectron emitted from the surface is dependant on

- (a) The intensity of incident radiation
- (b) The potential of the collector electrode
- (c) The frequency of incident radiation
- (d) The angle of incidence of radiation of the surface

Ans. (c)

12. An electron orbiting in a circular orbit around the nucleus of the atom

- (a) Has a magnetic dipole moment
- (b) Exerts an electric force on the nucleus equal to that on it by the nucleus
- (c) Does not produce a magnetic induction at the nucleus
- (d) All of the above

Ans. (d)

13. The X-rays beam coming from an X-ray tube will be:

- (a) Monochromatic
- (b) Having all wavelengths smaller than a certain minimum wavelength
- (c) Having all wavelengths larger than a certain minimum wavelength
- (d) Having all wavelengths lying between a minimum and a maximum wavelength

Ans. (c)

14. The mass number of a nucleus is

- (a) Always less than its atomic number
- (b) Always more than its atomic number
- (c) Always equal to its atomic number
- (d) Sometimes more and sometimes equal to its atomic number

Ans. (d)

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15. Two successive elements belonging to the first transition series have the same number of electrons partially filling orbitals. They are

- (a) V and Cr
- (b) Ti and V
- (c) Mn and Cr
- (d) Fe and Co

Ans. (c)

16. When $n+l$ has the same value for two or more orbitals, the new electron enters the orbital where

- (a) n is maximum
- (b) n is minimum
- (c) l is maximum
- (d) l is minimum

Ans. (b)

17. A balloon filled with ethylene is pricked with a sharp pointed needle and quickly placed in a tank full of hydrogen at the same pressure. After a while the balloon would have

- (a) Shrunk
- (b) Enlarged
- (c) Completely collapsed
- (d) Remain unchanged in size

Ans. (b)

18. Which of the following statements is not true?

- (a) The ratio of the mean speed to the rms speed is independent of temperature
- (b) The square of the mean speed of the molecules is equal to the mean squared speed at a certain temperature
- (c) Mean kinetic energy of the gas molecules at any given temperature is independent of the mean speed
- (d) None

Ans. (b)

19. Which of the following statements represent Raoult's Law

- (a) Mole fraction of solvent = ratio of vapour pressure of the solution to vapour pressure of the solvent
- (b) Mole fraction of solute = ratio of vapour pressure of the solution to vapour pressure of the solvent
- (c) Mole fraction of solute = lowering of vapour pressure of the solution
- (d) Mole fraction of solvent = lowering of vapour pressure of the solution

Ans. (a)

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20. Elements having the same atomic number and the same atomic mass are known as

- (a) Isotopes
- (b) Isotones
- (c) Isomers
- (d) None of the above

21. Which is the most acidic amongst

- (a) Nitrophenol
- (b) O-toulene
- (c) Phenol
- (d) Cresol

22. Pure water does not conduct electricity because it is

- (a) Almost not ionised
- (b) Low boiling
- (c) Neutral
- (d) Readily decomposed

Ans. (a)

23. In a salt bridge, KCl is used because

- (a) It is an electrolyte
- (b) The transference number of K^+ and Cl^- is nearly the same
- (c) It is a good conductor of electricity
- (d) All of the above

Ans. (d)

24. A depolarizer used in the dry cell batteries is

- (a) KCl
- (b) MnO_2
- (c) KOH
- (d) None of the above

Ans. (b)

25. The hydrolysis of alkyl halides by aqueous NaOH is best termed as

- (a) Electrophylic substitution reaction
- (b) Electrophylic addition reaction
- (c) Nucleophylic addition reaction
- (d) Nucleophylic substitution reaction

Ans. (d)

26. The hydrocarbon that gives a red precipitate with ammoniacal cuprous chloride is (where ' \equiv ' means a triple bond)

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- (a) $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-CH}_3$
- (b) $\text{CH}_3\text{-C}\equiv\text{C-CH}_3$
- (c) $\text{CH}_2\text{=CH-CH=CH}_2$
- (d) $\text{CH}_3\text{-CH}_2\text{-C}\equiv\text{CH}$

Ans. (d)

27. Which of the following reagents is neither neutral nor basic

- (a) Lucas' reagent
- (b) Tollen's reagent
- (c) Bayer's reagent
- (d) Fehling's solution

Ans. (a)

28. The substance which is most easily nitrated

- (a) Toluene
- (b) Benzene
- (c) Nitrobenzene
- (d) Chlorobenzene

Ans. (a)

29. Carbylamine reaction is a test for

- (a) Primary amine
- (b) Secondary amine
- (c) Tertiary amine
- (d) Quaternary ammonium salt

Ans. (a)

30. Which of the following oxides cannot be reduced by carbon to obtain metal

- (a) ZnO
- (b) Al_2O_3
- (c) Fe_2O_3
- (d) PbO

Ans. (b)

31. Which of the following is not an oxide ore?

- (a) Cassiterite
- (b) Siderite
- (c) Pyrolusite
- (d) Bauxite

Ans. (b)

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32. Which among the following is called philosopher's wool.

- (a) Cellulose
- (b) Calamine
- (c) Stellite
- (d) Cerussite

Ans. (c)

33. Out of 10 white, 9 black and 7 red balls, in how many ways can we select one or more balls

- (a) 234
- (b) 52
- (c) 630
- (d) 879

Ans. (d)

34. A and B throw a dice. The probability that A's throw is not greater than B's is

- (a) $5/12$
- (b) $7/12$
- (c) $11/12$
- (d) $5/36$

Ans. (b)

35. Given two numbers a and b. Let A denote the single AM between these and S denote the sum of n AMs between them. Then S/A depends upon

- (a) n
- (b) n,a
- (c) n,b
- (d) n,a,b

Ans. (a)

36. If the sum of the roots of the equation $ax^2+bx+c=0$ is equal to the sum of the squares of their reciprocals, then, a/c , b/a , c/b are in

- (a) AP
- (b) GP
- (c) HP
- (d) None of the these

Ans. (c)

In the following questions \int represents the integral sign-for eg. $\int_1^2 [f(x)] dx$ means integration of the function $f(x)$ over the interval 1 to 2.

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37. Value of $\int_{-1}^2 |2-x^2| dx$, ie integration of the function $|2-x^2|$ over the interval -1 to 2.

- (a) 0
- (b) 1
- (c) 2
- (d) None of the above

Ans. (d)

38. If $\int_0^{\pi} [\log \sin x] dx = k$, then the value of $\int_0^{\pi/4} [\log(1 + \tan x)] dx$, where π stands for pi, is

- (a) $-k/4$
- (b) $k/4$
- (c) $-k/8$
- (d) $k/8$

Ans. (c)

39. If a, b, c be in GP and p, q be respectively AM between a, b and b, c then

- (a) $2/b = 1/p + 1/q$
- (b) $2/b = 1/p - 1/q$
- (c) $2 = a/p - c/q$
- (d) None of the above

Ans. (a)

40. A solution of $KMnO_4$ is reduced to MnO_2 . The normality of solution is 0.6. The molarity is

- (a) 1.8M
- (b) 0.6M
- (c) 0.1M
- (d) 0.2M

Ans. (d)

The questions 41-46 are based on the following pattern. The problems below contain a question and two statements giving certain data. You have to decide whether the data given in the statements are sufficient for answering the questions. The correct answer is

- (A) If statement (I) alone is sufficient but statement (II) alone is not sufficient.
- (B) If statement (II) alone is sufficient but statement (I) alone is not sufficient.
- (C) If both statements together are sufficient but neither of statements alone is sufficient.
- (D) If both together are not sufficient.

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41. What is John's age?

- (I) In 15 years John will be twice as old as Dias would be
- (II) Dias was born 5 years ago

Ans. (C)

42. What is the distance from city A to city C in kms?

- (I) City A is 90 kms from City B
- (II) City B is 30 kms from City C

Ans. (D)

43. Is $A=C$? A,B,C are real numbers

- (I) $A-B=B-C$
- (II) $A-2C = C-2B$

Ans. (C)

44. What is the 30th term of a given sequence ?

- (I) The first two terms of the sequence are $1, 1/2$
- (II) The common difference is $-1/2$

Ans. (A)

45. Was Avinash early, on time or late for work?

- (I) He thought his watch was 10 minutes fast
- (II) Actually his watch was 5 minutes slow

Ans. (D)

46. What is the value of A if A is an integer?

- (I) $A^4 = 1$
- (II) $A^3 + 1 = 0$

Ans. (B)

47. A person travels 12 km in the southward direction and then travels 5km to the right and then travels 15km toward the right and finally travels 5km towards the east, how far is he from his starting place?

- (a) 5.5 kms
- (b) 3 km
- (c) 13 km
- (d) 6.4 km

Ans. (b)

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48. X's father's wife's father's granddaughter uncle will be related to X as

- (a) Son
- (b) Nephew
- (c) Uncle
- (d) Grandfather

Ans. (c)

49. Find the next number in the series **1, 3, 7, 13, 21, 31**

- (a) 43
- (b) 33
- (c) 41
- (d) 45

Ans. (a)

50. If in a certain code "RANGE" is coded as 12345 and "RANDOM" is coded as 123678. Then the code for the word "MANGO" would be

- (a) 82357
- (b) 89343
- (c) 84629
- (d) 82347

Ans. (d)

51. If "PROMPT" is coded as QSPLOS, then "PLAYER" should be

- (a) QMBZFS
- (b) QWMFDW
- (c) QUREXM
- (d) URESTI

Ans. (a)

The questions 52-53 are based on the following data

6 people A,B,C,D,E and F sit around a table for dinner. Since A does not like C, he doesn't sit either opposite or beside C. B and F always like to sit opposite each other.

52. If A is beside F then who are the two neighbours of B?

- (a) D and C
- (b) E and C
- (c) D and E
- (d) Either (a) or (b)

Ans. (c)

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53. If D is adjacent to F then who is adjacent to C?

- (a) E and B
- (b) D and A
- (c) D and B
- (d) either (a) or (c)

Ans.(d)

54. Complete the sequence **A, E, I, M, Q, U, _ , _**

- (a) B, F
- (b) Y, C
- (c) G, I
- (d) K, O

Ans.(b)

55. A person travels 6km towards west, then travels 5km towards north ,then finally travels 6km towards west. Where is he with respect to his starting position?

- (a) 13km east
- (b) 13km northeast
- (c) 13km northwest
- (d) 13km west

Ans. (c)

56. If A speaks the truth 80% of the times, B speaks the truth 60% of the times.
What is the probability that they tell the truth at the same time

- (a) 0.8
- (b) 0.48
- (c) 0.6
- (d) 0.14

Ans.(b)

57. If the time quantum is too large, Round Robin scheduling degenerates to

- (a) Shortest Job First Scheduling
- (b) Multilevel Queue Scheduling
- (c) FCFS
- (d) None of the above

Ans. (c)

58. Transponders are used for which of the following purposes

- (a) Uplinking
- (b) Downlinking
- (c) Both (a) and (b)
- (d) None of the above

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Ans. (c)

59. The format specifier "%d" is used for which purpose in C

- (a) Left justifying a string
- (b) Right justifying a string
- (c) Removing a string from the console
- (d) Used for the scope specification of a char[] variable

Ans. (a)

60. Virtual functions allow you to

- (a) Create an array of type pointer-to-base-class that can hold pointers to derived classes
- (b) Create functions that have no body
- (c) Group objects of different classes so they can all be accessed by the same function code
- (d) Use the same function call to execute member functions to objects from different classes

62. A sorting algorithm which can prove to be a best time algorithm in one case and a worst time algorithm in worst case is

- (a) Quick Sort
- (b) Heap Sort
- (c) Merge Sort
- (d) Insert Sort

Ans. (a)

63. What details should never be found in the top level of a top-down design?

- (a) Details
- (b) Coding
- (c) Decisions
- (d) None of the above

Ans. (c)

64. In an absolute loading scheme, which loader function is accomplished by assembler

- (a) Reallocation
- (b) Allocation
- (c) Linking
- (d) Both (a) and (b)

Ans. (d)

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65. Banker's algorithm for resource allocation deals with

- (a) Deadlock prevention
- (b) Deadlock avoidance
- (c) Deadlock recovery
- (d) None of these

Ans. (b)

66. Thrashing can be avoided if

- (a) The pages, belonging to the working set of the programs, are in main memory
- (b) The speed of CPU is increased
- (c) The speed of I/O processor are increased
- (d) All of the above

Ans. (a)

67. Which of the following communications lines is best suited to interactive processing applications?

- (a) Narrowband channels
- (b) Simplex channels
- (c) Full-duplex channels
- (d) Mixedband channels

Ans. (b)

68. A feasibility document should contain all of the following except

- (a) Project name
- (b) Problem descriptions
- (c) Feasible alternative
- (d) Data flow diagrams

Ans. (d)

69. What is the main function of a data link content monitor?

- (a) To detect problems in protocols
- (b) To determine the type of transmission used in a data link
- (c) To determine the type of switching used in a data link
- (d) To determine the flow of data

Ans. (a)

70. Which of the following is a broadband communications channel?

- (a) Coaxial cable
- (b) Fiber optic cable
- (c) Microwave circuits
- (d) All of the above

Ans. (d)

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71. Which of the following memories has the shortest access time?

- (a) Cache memory
- (b) Magnetic bubble memory
- (c) Magnetic core memory
- (d) RAM

Ans. (a)

72. A shift register can be used for

- (a) Parallel to serial conversion
- (b) Serial to parallel conversion
- (c) Digital delay line
- (d) All the above

Ans. (d)

73. In which of the following page replacement policies, Balady's anomaly occurs?

- (a) FIFO
- (b) LRU
- (c) LFU
- (d) NRU

ns. (a)

74. Subschema can be used to

- (a) Create very different, personalised views of the same data
- (b) Present information in different formats
- (c) Hide sensitive information by omitting fields from the sub-schema's description
- (d) All of the above

Ans. (d)

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Wipro Sample Test #2

1. When a bicycle is in motion, the force of friction exerted by the ground on the two wheels is such that it acts

- (a) In the backward direction on the front wheel and in the forward direction on the rear wheel.
- (b) In the forward direction on the front wheel and in the backward direction on the rear wheel.
- (c) In the backward direction on both the front and rear wheels.
- (d) In the backward direction on both the front and rear wheels.

Ans. (d)

2. A certain radioactive element A, has a half life = t seconds. In $(t/2)$ seconds the fraction of the initial quantity of the element so far decayed is nearly

- (a) 29%
- (b) 15%
- (c) 10%
- (d) 45%

Ans. (a)

3. Which of the following plots would be a straight line ?

- (a) Logarithm of decay rate against logarithm of time
- (b) Logarithm of decay rate against logarithm of number of decaying nuclei
- (c) Decay rate against time
- (d) Number of decaying nuclei against time

Ans. (b)

4. A radioactive element x has an atomic number of 100. It decays directly into an element y which decays directly into element z. In both processes a charged particle is emitted. Which of the following statements would be true?

- (a) y has an atomic number of 102
- (b) y has an atomic number of 101
- (c) z has an atomic number of 100
- (d) z has an atomic number of 101

Ans. (b)

5. If the sum of the roots of the equation $ax^2 + bx + c = 0$ is equal to the sum of the squares of their reciprocals then a/c , b/a , c/b are in

- (a) AP
- (b) GP
- (c) HP
- (d) None of these

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Ans. (c)

6. A man speaks the truth 3 out of 4 times. He throws a die and reports it to be a 6. What is the probability of it being a 6?

- (a) $3/8$
- (b) $5/8$
- (c) $3/4$
- (d) None of the above

Ans. (a)

7. If $\cos^2 A + \cos^2 B + \cos^2 C = 1$ then ABC is a

- (a) Right angle triangle
- (b) Equilateral triangle
- (c) All the angles are acute
- (d) None of these

Ans. (a)

8. Image of point (3,8) in the line $x + 3y = 7$ is

- (a) (-1,-4)
- (b) (-1,4)
- (c) (2,-4)
- (d) (-2,-4)

Ans. (a)

9. The mass number of a nucleus is

- (a) Always less than its atomic number
- (b) Always more than its atomic number
- (c) Sometimes more than and sometimes equal to its atomic number
- (d) None of the above

Ans. (c)

10. The maximum KE of the photoelectron emitted from a surface is dependent on

- (a) The intensity of incident radiation
- (b) The potential of the collector electrode
- (c) The frequency of incident radiation
- (d) The angle of incidence of radiation of the surface

Ans. (c)

11. Which of the following is not an essential condition for interference

- (a) The two interfering waves must be propagated in almost the same direction or the two interfering waves must intersect at a very small angle
- (b) The waves must have the same time period and wavelength

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- (c) Amplitude of the two waves should be the same
- (d) The interfering beams of light must originate from the same source

Ans. (c)

12. When X-Ray photons collide with electrons

- (a) They slow down
- (b) Their mass increases
- (c) Their wave length increases
- (d) Their energy decreases

Ans. (c)

13. An electron emits energy

- (a) Because its in orbit
- (b) When it jumps from one energy level to another
- (c) Electrons are attracted towards the nucleus
- (d) The electrostatic force is insufficient to hold the electrons in orbits

Ans. (b)

14. How many bonds are present in CO₂ molecule?

- (a) 1
- (b) 2
- (c) 0
- (d) 4

Ans. (d)

15. In a balanced chemical equation

- (a) Atoms are conserved
- (b) Molecules are conserved
- (c) Moles are conserved
- (d) Reactant and product molecules are preserved

Ans. (a)

16. How many grams of NaOH will react with 0.2 equivalent of HCl?

- (a) 0.59
- (b) 0.285
- (c) 1.18
- (d) none of these

Ans. (a)

17. Which of the following is least acidic

- (a) Ortho-cresol
- (b) Para-cresol

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- (c) Phenol
- (d) Meta-cresol

Ans. (b)

18. In Reimer-Tiemann's reaction, the reaction intermediate is

- (a) Carbene
- (b) Dichloro carbene
- (c) Carbonion
- (d) Carbonium ion

Ans. (b)

19. Which of the following is most acidic?

- (a) C_2H_5OH
- (b) $CH_3CHOHCH_3$
- (c) Ethanol
- (d) CH_3OH

Ans. (b)

20. A catalyst

- (a) always slows down the reaction
- (b) always starts a reaction that would not have occurred at all otherwise
- (c) causes changes in the rate of the reaction
- (d) changes the quantities of the products formed

Ans. (c)

21. The rate of the first order reaction depends on the

- (a) Concentration of the reactant
- (b) Concentration of the product
- (c) Time
- (d) Temperature

Ans. (d)

22. The most abundant element in the universe is

- (a) Hydrogen
- (b) Helium
- (c) Oxygen
- (d) Silicon

Ans. (a)

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23. Integrate $3x + 5 / (x^3 - x^2 - x + 1)$

- (a) $\frac{1}{2} \log \left| \frac{(x+1)}{(x-1)} \right| - \frac{4}{(x-1)}$
- (b) $\log |2 + \tan x|$
- (c) $-(1 + \log x)/x$
- (d) $2 \log |(\tan x)/(\tan x + 2)|$

Ans. A

24. If $y = \cos^{-1}(\cos x + 4\sin x)/(17)^{1/2}$, then dy/dx is

- (a) 0
- (b) 1
- (c) -1
- (d) none of these

Ans. (b)

25. If the sum of n terms of two series of A.P are in the ratio $5n+4:9n+6$. find the ratio of their 13th terms

- (a) 129/231
- (b) 1/2
- (c) 23/15
- (d) None of the above

Ans. (a)

26. If the letters of the word "rachit" are arranged in all possible ways and these words are written out as in a dictionary, what is the rank of the word "rachit".

- (a) 485
- (b) 480
- (c) 478
- (d) 481

Ans. (d)

27. Ravi's salary was reduced by 25%. Percentage increase to be effected to bring the salary to the original level is

- (a) 20%
- (b) 25%
- (c) $33 \frac{1}{3}\%$
- (d) 30%

Ans. (c)

28. A and B can finish a piece of work in 20 days .B and C in 30 days and C and A in 40 days. In how many days will A alone finish the job

- (a) 48
- (b) $34 \frac{2}{7}$

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- (c) 44
- (d) 45

Ans. (a)

29. How long will a train 100m long travelling at 72kmph take to overtake another train 200m long travelling at 54kmph

- (a) 70sec
- (b) 1min
- (c) 1 min 15 sec
- (d) 55 sec

Ans. (b)

30. What is the product of the irrational roots of the equation $(2x-1)(2x-3)(2x-5)(2x-7)=9$?

- (a) $3/2$
- (b) 4
- (c) 3
- (d) $3/4$

Ans. (a)

31. Which of the following parameters is the same for molecules of all gases at a given temperature?

- (a) Mass
- (b) Momentum
- (c) Speed
- (d) Kinetic energy

Ans. (d)

32. A solid is completely immersed in liquid. The force exerted by the liquid on the solid will

- (a) Increase if it is pushed deeper inside the liquid
- (b) Change if its orientation is changed
- (c) Decrease if it is taken partially out of the liquid
- (d) None of the above

Ans. (c)

33. Select the correct statements

- (a) A simple harmonic motion is necessarily periodic
- (b) An oscillatory motion is necessarily periodic
- (c) A periodic motion is necessarily oscillatory
- (d) All of the above

Ans. (a)

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34. An electron is injected into a region of uniform magnetic flux density with the components of velocity parallel to and normal to the flux. What is the path of the electron?

- (a) Helix
- (b) Parabola
- (c) Circle
- (d) Rectangle

Ans. (a)

35. A constant voltage is applied between the 2 ends of a uniform metallic wire. Some heat is developed in it. The heat developed is doubled if

- (a) both the length and radius of the wire are halved.
- (b) both the length and radius of the wire are doubled
- (c) the radius of the wire is doubled
- (d) the length of the wire is doubled

Ans. (b)

36. If Young's double slit experiment is performed in water

- (a) the fringe width will decrease
- (b) the fringe width will increase
- (c) the fringe width remains unchanged
- (d) there will be no fringe

Ans. (a)

37. The shape of a spot of light produced when bright sunshine passes perpendicular through a hole of very small size is

- (a) Square, because the hole is a square
- (b) Round, because it is an image of the sun
- (c) Round with a small penumbra around it
- (d) Square with a small penumbra

Ans. (b)

38) *Select the alternative that logically follows from the two given statements.*

- Some forms are books
- All books are made of paper

- (a) Some forms are made of paper
- (b) Some forms are not made of paper
- (c) No forms are made of paper
- (d) None of the above

Ans. (a)

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39.

- All toffees are chocolates
- Some toffees are not good for health

- (a) Some chocolates are not good for health
(b) Some toffees are good for health
(c) No toffees are good for health
(d) Both (a) and (b)

Ans. (a)

The questions 40-46 are based on the following pattern. The problems below contain a question and two statements giving certain data. You have to decide whether the data given in the statements are sufficient for answering the questions. The correct Answer is

- (A) If statement (I) alone is sufficient but statement (II) alone is not sufficient.
(B) If statement (II) alone is sufficient but statement (I) alone is not sufficient.
(C) If both statements together are sufficient but neither of statements alone is sufficient.
(D) If both together are not sufficient.
(E) If statements (I) and (II) are not sufficient

40. What is the volume of a cubical box in cubic centimetres?

- (I) One face of the box has an area of 49 sq.cms.
(II) The longest diagonal of the box is 20 cms.

Ans. D

41. Is z positive?

- (I) $y+z$ is positive
(II) $y-z$ is positive

Ans. E

42. Is $xy > 0$? x, y are real numbers?

- (I) $8x = 6y$
(II) $x = y + 4$

Ans. B

43. If a ground is rectangular, what is its width?

- (I) The ratio of its length to its breadth is 7:2
(II) Perimeter of the playground is 396 mts.

Ans. C

44. If the present age of my father is 39 yrs and my present age is x yrs, what is x ?

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- (I) Next year my mother will be four times as old as i would be.
(II) My brother is 2 years older than I and my father is 4 years older than my mother.

Ans. C

45. How many brothers and sisters are there in the family of seven children?

- (I) Each boy in the family has as many sisters as brothers
(II) Each of the girl in the family has twice as many brothers as sisters

Ans. D

46. x is not equal to 0, is $x + y = 0$?

- (I) x is the reciprocal of y
(II) x is not equal to 1

Ans. A

Following questions are based on letter's analogy. First pair of letters should have the same relationship as the second pair of letters or vice versa.

47. ? : BGLQ :: YDIN : VAFK

- (a) EKNS
(b) DKMT
(c) DLMS
(d) EJOT

Ans. (d)

48. NLO : RPS :: ? : ZX A

- (a) VUW
(b) VTR
(c) VTW
(d) TRP

Ans. (c)

49. If "segment" is coded as rffndou, then "ritual" is coded as

- (a) shutbm
(b) qjutbk
(c) qhutbk
(d) qhubtk

Ans. (c)

50. If "football" is "cricket" , "cricket" is "basketball" , "basketball" is "volleyball", "volleyball" is "khokho" and "khokho" is cricket, which is not a ball game?

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- (a) cricket
- (b) football
- (c) khokho
- (d) basketball

Ans. (a)

51. Which of the following is a recursive set of production

- (a) $S \rightarrow a|A, A \rightarrow S$
- (b) $S \rightarrow a|A, A \rightarrow b$
- (c) $S \rightarrow aA, A \rightarrow S$
- (d) None of these

Ans. (c)

For Placement

Q1. Two bodies changed from p_1v_1 to p_2v_2 state in two ways. The heat supplied is ΔQ and work done is ΔW . Then what is constant in these two processes

- (a) Δq
- (b) Δw
- (c) $\Delta q + \Delta w$
- (d) $\Delta q - \Delta w$

Ans. (d)

Q2. _____ have same atomic number and same mass number are

- (a) Isotopes
- (b) Isotones
- (c) Isomers
- (d) Isobars

Ans. (c)

Q3. When a free electron is placed in a plane of electro magnetic then it moves in

- (a) in the direction of the electric field
- (b) in the direction of magnetic field
- (c) of propagation of wave
- (d) of the plane containing magnetic field and propagation direction.

Q4. Name the phenomena in which one proton is jumped from one isomer to another isomer to create two different elements

- (a) functional isomerism
- (b) stereo isomerism
- (c) tautomerism
- (d) pentamerism

Ans. (c)

Q5. In the below compounds which one has 40% C, 6.7% H and 53.3% O what is its empirical formula

- (a) CHO
- (b) CH₂
- (c) C₂H₂O₂
- (d) C₂H₃O₂

Ans: (b)

Q6. X rays are coming from X ray tube, the wavelength is _____ a certain wavelength/s

- (a) below
- (b) above
- (c) inbetween

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(d) out of

Ans. (c)

Q7. In a triode valve in order to increase the saturation current what has to be done

- (a) increase plate voltage
- (b) reduce distance between grid and plate
- (c) increase cathode potential
- (d) reduce grid potential

Ans. (d)

Q8. Seven different toys are distributed among 3 children how many different ways are possible?

- (a) 7C_3
- (b) 7P_3
- (c) 3^7
- (d) 7^3

Ans. (c)

Q9. A, B **Ans** C are three speakers. They have to speak randomly along with another 5 speakers in a function. A has to speak before B and B has to speak before C. What is the probability.

Ans. 1/6

Q10. If $dy = (\sec x + y \tan x) dx$, Then the curve is

- (a) $x = y \cos x$
- (b) $x = y \sin x$
- (c) $x = y \tan x$
- (d) $x = y \sec x$

Ans. (a)

Q11. Two series are 16,21,26.... and 17,21,25.....What is the sum of first hundred common numbers

- (a) 101100
- (b) 110100
- (c) 101110
- (d) 110101

Ans. (a)

Q12. There are two sections in a question paper each contain five questions. A students has to answer 6 questions. Maximum no. of questions that can be answered from any section is 4. How many ways he can attempt the paper?

- (a) 50
- (b) 100
- (c) 120
- (d) 200

Ans. (d)

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Q13. a and b are two numbers selected randomly from 1,2,3.... 25 what is the probability of a and b are not equal.

- (a) 1/25
- (b) 24/25
- (c) 13/25
- (d) 2/25

Ans. (b)

Q14. The sum of the series $1 + 1(1+1/n) + 3(1+1/n)^2 + \dots$ is equal to?

Ans. n^2

Q15. Two circles of different radii intersects each other what is the maximum no of intersections

- (a) 0
- (b) 1
- (c) 2
- (d) 3

Ans. (c)

Q16. If $x = \sin^{-1}(t)$, $y = \log(1-t^2)$, find d^2y/dx^2 when $t=1/2$

- (a) 1
- (b) 0
- (c) -8/3
- (d) -2/3

Ans. (c)

Q17. If x approaches infinity , then $(\int e^x dx) / (\int e^2 x dx)$ is ?

- (a) 1
- (b) 0
- (c) -1
- (d) 2

Ans. (a)

Q18. If $f(x)=1-\cos(1-\cos x)/x^4$ is continuous at $f(0)$ then what is x

- (a) 1
- (b) 0
- (c) 1/4
- (d) -1/4

Ans. (c)

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Q19. For the word SURITI, if you arrange the letters in dictionary order then what is its rank?

- (a) 234
- (b) 235
- (c) 236
- (d) 237

Ans. (c)

Q20. Period of $\sin((2t + 3) / 6 \pi)$

- (a) 6π
- (b) $6\pi^2$
- (c) 3π

Ans. (b)

Q21 - Q23. Four questions given on the below data
X, Y and Z are senior engineers. A, B, C, D are junior engineers. Company wants to select 4 engineers. Two will be senior and two will be juniors. The company wants these engineers to work in the most productive way so they respect each person's likes/dislikes.

- Y is not friends with A
- Z is not friends with C
- B is not friends with A

1. If B is selected then who will be the remaining 4 members ?
2. If C is selected, Z and ___ cannot be selected?
3. D is always selected if ___ is selected?

Q24. A speaks truth 70% of the times, B speaks truth 80% of the times. What is the probability that both are contradicting each other is ?

Q25. $\int \frac{(2x-3)}{(x^2+x+1)^2} dx$ is ?

Q26. Ram starts from A walking 2 km North and turns right and walks 4 km and turns right again and walks 4 km and turns right again and walks 4 km and meets Radha at B walking in the opposite direction to Ram .

- a) Which direction does Ram walk after the first turn?
- b) Distance between A and B

Q27. If the equation $x^2 - 3x + a = 0$ has the roots (0,1) then value of a is ?

Q28. A and B's temperature are 10°C and 20°C having same surface , then their ratio of rate of emissions is ?

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Q29. An atomic particle exists and has a particular decay rate . It is in a train . When the train moves, a person observes for whether the decay rate

- (a) increases
- (b) decreases
- (c) depend on the directions of movement of train

Q30. Which of the following exchanges positive ions

- (a). Cl^-
- (b) NH_2^-
- (c) CH_2

Ans. (b)

Q31. After execution of CMP, a instruction in Intel 8085 microprocessor

- (a) ZF is set and CY is reset.
- (b) ZF is set CY is unchanged
- (c) ZF is reset, CY is set
- (d) ZF is reset , CY is unchanged .

Ans. ZF is set and CY is reset

Q32. The best tool for editing a graphic image is ?

Q33. Network scheme defines

- a.) one to one
- b.) many to many
- c.) one to ,many ?

Q34. A person wants to measures the length of a rod. First he measures with standing ideally then he maeasures by moving parrel to the rod

- (a) the length will decrease in second case
- (b) length will be same
- (c) length will increase in the second case.

Q35. One U-230 nucleus is placed in a train moving by velocity emitting alpha rays . When the train is at rest the distance between nucleus and alpha particle is x . One passenger is observing the particle . When the train is moving what is the distance between particle and nucleus ?

- (a) x
- (b) $x + vt$
- (c) $x - vt$

Q36. What is the resulting solution when benzene and toluene are mixed ?

Q37. If the word FADENCOMT equals 345687921 then

1. What is FEAT

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2. Find representation of 2998

Q38. Given 10 alphabets out of which 5 are to be chosen. How many words can be made with atleast one repetition.

Q39. Arrange by acidic values : phenol, nitrotolouene and o-cresol?

Q40. Find sum of $3 + 5/(1+2^2) + 7/(1 + 2^2 + 3^2) + \dots$

Ans. $3n/(1 + n)$

The following are few sample questions that maybe asked in the software paper. We haven't been able to give the values in certain problems ; only the type of questions have been mentioned.

Q What sorting algos have their best and worst case times equal ?

Ans. $O(n \log n)$ for mergesort and heap sort

Q. What page replacement algo . has minimum number of page faults ?

Ans. Optimality algorithm

Q. What is the use of virtual base class in c++

Ans. Multiple lines between derived classes.

Q. Find the eccentricity of a given node in a directed graph

Q. Convert the infix to postfix for $A-(B+C)*(D/E)$

Ans. $ABC+DE/*-$

Q. What is swapping

Q. Assignment operator targets to

Ans. l-value

Q. A byte addressable computer has memory capacity of 2^m Kbytes and can perform 2^n operations an instruction involving three operands and one operator needs maximum of ---bits

Ans. $3m + n$

Q. In round robin scheduling, if time quantum is too large then it degenerates to

Ans. FCFS

Q. What is network schema?

Q. Packet Burst is _____

Q. Picard's method uses _____?

Ans. Successive Differentiation.

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The following are few sample questions that maybe asked in the hardware paper. We haven't been able to give the values in certain problems ; only the type of questions have been mentioned.

- Q. Concentration and resistivity is given and conductivity is asked for ?
- Q. R , resistance and C , capacitance is given, find the frequency and Q factor of the crystal ?
- Q. Critical frequency and angle θ is given ; the max useable frequency is to be calculated
- Q. Questions on parabolic reflector antenna's and half wave dipole antenna's design
- Q. Ramp signal is generated from integrator. Whether it is a low or high pass filter.?
- Q. Calculate FM bandwidth given max modulation frequency F_m , max freq deviation, δf and 8 pairs allowable side band component ?

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LATEST QUESTION

Mind Here in our Institute within 30 minutes 45 questions were to be answered.

There was no **negative marking**.

Question Pattern

[1] Jumble sentences are given ,order the sentences to make a meaningful paragraph

[2] Sentences are given , order the sentences to make conclusion that follows from the options given(Say 5 sentences are given out of which 2 are causes and rest is result , like fallacy in logic) .

[3] Analogies.

[4] Opposite meaning.

[5] Point out the error in a given sentence.

[6] C (Follow ‘Test your C skills ‘).

[7] Data Structure.

[8] Operating System.

[9] Network.

[10]Puzzles(1-2),Critical reasoning(1-2).

We can not remember all the questions exactly as time was very short .Here are some of the questions (Not in order).

1.A topic on Gandhiji’s Salt Satyagrah Movement

Four sentences were given and you have to arrange them to make a paragraph.

Ans. CABD (Check it out).

2.What can’t be changed by the user program (Four choices were there).

Ans. Memory Map (Check it out).

3.In which layer ROUTING is performed ?

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Ans. Network Layer

4. What is the output of the following code snippet

```
main()
{
printf(5+"Fascimile");
}
```

Ans. mile

5. What is the output

```
Intcount=10,sum=0,*temp;

Temp=&count;

Sum=? &count;( It was actually given temp=? &count; which is
probably wrong)

Printf("sum=%d count= %d temp=%d ",sum,count,*temp);
```

Ans. C (most expected answer ,check it)

6. Which one has no L-Value

[1] a[i] [2] i [3] 2 [4] *(a+i)

Ans. [3]

7. Which is false for binary tree?

- [i] Any node should have two children.
- [ii] At fourth level the number of node should be less than 16.

8. Which is true for binary search ?

- [i] Traversal scheme
- [iii] Greedy algorithm
- [iv] Divide and conquer algorithm

Ans. [iv]

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9. What is the protocol used for getting the physical address by supplying IP address of a node?

[i] ARP [ii] RARP [iii] BOOTP [iv] DHCP

Ans. [i]

10. If DELHI is coded as CCIDD then how BOMBAY will be coded?

11. Opposite meaning of SPUR.

12. Opposite of HARBINGER .

Ans. Follower

13. Opposite meaning of PROTRUSION.

14. Opposite meaning of RESTIVENESS.

Ans. Docility.

15. Find the odd one in a given analogy

Ans. Mundane.

16 . Find the analogy : SURPRISE : EXCLAMATION

Ans. Dismay:groan.

17) Find the analogy : Plateau : Taxonomy.

18) Question from congestion control topic:

Ans: source quench.

19) Question from kernel mode:

Ans: Disable Interrupts.

20) which one is a page replacement algorithm.

[i]fifo [iii]Least recently used. [iv]All of above.

21) Using two numbers And interchanging + and * there was a question.

Ans:(iii)(some expression=22).



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22) For each hour a watch is going slow by 30 seconds. Now time is 8 a.m. What will be the actual time at 8 p.m.

Ans: ii) 7:54.

23) Question regarding while loop.

Ans: (iii).

24) Alphabetical order L, M, ... (can't remember)

Ans: F.

25) One puzzle: (I can't exactly remember this question giving brief idea of this question) there were four guys A, B, C, D. the older and younger relation is given. You have to find the age of A.

Ans: 7 years (check it out).

28) Nine people six floor. Conditions are given. (This was a very long paragraph). People named like I, J, K, L, M, N, O, P, Q. **Ans:** i) J.

30) A problem regarding age of father and son (very easy problem you can solve it).

31) Point out error in the following sentence: I got the book in the office and slipped it out.

[i] I got the book. [ii] in the. [iii] office and . [iv] slipped it out.

Ans: [iv].

32) Point out error: (about a flower's garden)

Ans: (I can't remember the options). answer will be "among on another".

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TIPS: Try to mug up the answers .check once more only the questions in the hall which we have pointed out by writing “check it out” with the answers.

But the other answers are correct fully. Don't waste your time on long paragraphs. There was no negative marking. Try to solve all the departmental question.

1. An electron moving in an electromagnetic field moves in a

- (a) In a straight path
- (b) Along the same plane in the direction of its propagation
- (c) Opposite to the original direction of propagation
- (d) In a sine wave

Ans. (b)

2. The total work done on the particle is equal to the change in its kinetic energy

- (a) Always
- (b) Only if the forces acting on the body are conservative.
- (c) Only if the forces acting on the body are gravitational.
- (d) Only if the forces acting on the body are elastic.

Ans. (a)

3. The following unit measure energy:

- (a) Kilo-watt hour.
- (b) Volt*volt/sec*ohm.
- (c) Pascal*foot*foot
- (d) (Coulomb*coulomb)*farad

Ans. (a)

4. Astronauts in stable orbits around the earth are in a state of weightlessness because

- (a) There is no gravitational force acting on them.
- (b) The satellite and the air inside it have an acceleration equal to that of gravitational acceleration there.
- (c) The gravitational force of the earth and the sun balance giving null resultant.
- (d) There is no atmosphere at the height at which the satellites move.

Ans. (b)

5. An organ pipe, open at both ends and another organ pipe closed at one end, will resonate with each other, if their lengths are in the ratio of

- (a) 1:1
- (b) 1:4
- (c) 2:1
- (d) 1:2

Ans. (c)

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6. During an isothermal expansion of an ideal gas

- (a) Its internal energy increases.
- (b) Its internal energy decreases.
- (c) Its internal energy does not change.
- (d) The work done by the gas is not equal to the quantity of heat absorbed by it.

Ans. (c)

7. A parallel plate capacitor is charged and the charging battery is then disconnected. If the plates of the capacitor are moved further apart by means of insulating handles

- (a) The charge on the capacitor increases.
- (b) The voltage across the plates increases.
- (c) The capacitance increases.
- (d) The electrostatic energy stored in the capacitor decreases.

Ans. (b)

8. Two equal negative charges q are fixed at point $(0, a)$ and $(0, -a)$ on the y -axis. A positive charge Q is released from rest at the point $(2a, 0)$ on the x -axis. The charge Q will

- (a) Execute simple harmonic motion about the origin
- (b) Move to the origin and remain at rest
- (c) Move to infinity
- (d) Execute oscillatory but not simple harmonic motion

Ans. (d)

9. A square conducting loop of length L on a side carries a current I . The magnetic field at the centre of the loop is

- (a) Independent of L
- (b) Proportional to L^2
- (c) Inversely proportional to L
- (d) Directly proportional to L

Ans. (c)

10. The focal length of a convex lens when placed in air and then in water will

- (a) Increase in water with respect to air
- (b) Increase in air with respect to water
- (c) Decrease in water with respect to air
- (d) Remain the same

Ans. (a)

11. The maximum kinetic energy of the photoelectron emitted from the surface is dependant on

- (a) The intensity of incident radiation
- (b) The potential of the collector electrode

- (c) The frequency of incident radiation
- (d) The angle of incidence of radiation of the surface

Ans. (c)

12. An electron orbiting in a circular orbit around the nucleus of the atom

- (a) Has a magnetic dipole moment
- (b) Exerts an electric force on the nucleus equal to that on it by the nucleus
- (c) Does not produce a magnetic induction at the nucleus
- (d) All of the above

Ans. (d)

13. The X-rays beam coming from an X-ray tube will be:

- (a) Monochromatic
- (b) Having all wavelengths smaller than a certain minimum wavelength
- (c) Having all wavelengths larger than a certain minimum wavelength
- (d) Having all wavelengths lying between a minimum and a maximum wavelength

Ans. (c)

14. The mass number of a nucleus is

- (a) Always less than its atomic number
- (b) Always more than its atomic number
- (c) Always equal to its atomic number
- (d) Sometimes more and sometimes equal to its atomic number

Ans. (d)

15. Two successive elements belonging to the first transition series have the same number of electrons partially filling orbitals. They are

- (a) V and Cr
- (b) Ti and V
- (c) Mn and Cr
- (d) Fe and Co

Ans. (c)

16. When $n+l$ has the same value for two or more orbitals, the new electron enters the orbital where

- (a) n is maximum
- (b) n is minimum
- (c) l is maximum
- (d) l is minimum

Ans. (b)

17. A balloon filled with ethylene is pricked with a sharp pointed needle and quickly placed in a tank full of hydrogen at the same pressure. After a while the balloon would have

- (a) Shrunk
- (b) Enlarged
- (c) Completely collapsed
- (d) Remain unchanged in size

Ans. (b)

18. Which of the following statements is not true?

- (a) The ratio of the mean speed to the rms speed is independent of temperature
- (b) The square of the mean speed of the molecules is equal to the mean squared speed at a certain temperature
- (c) Mean kinetic energy of the gas molecules at any given temperature is independent of the mean speed
- (d) None

Ans. (b)

19. Which of the following statements represent Raoult's Law

- (a) Mole fraction of solvent = ratio of vapour pressure of the solution to vapour pressure of the solvent
- (b) Mole fraction of solute = ratio of vapour pressure of the solution to vapour pressure of the solvent
- (c) Mole fraction of solute = lowering of vapour pressure of the solution
- (d) Mole fraction of solvent = lowering of vapour pressure of the solution

Ans. (a)

20. Elements having the same atomic number and the same atomic mass are known as

- (a) Isotopes
- (b) Isotones
- (c) Isomers
- (d) None of the above

21. Which is the most acidic amongst

- (a) Nitrophenol
- (b) O-toulene
- (c) Phenol
- (d) Cresol

22. Pure water does not conduct electricity because it is

- (a) Almost not ionised
- (b) Low boiling
- (c) Neutral
- (d) Readily decomposed

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Ans. (a)

23. In a salt bridge, KCl is used because

- (a) It is an electrolyte
- (b) The transference number of K^+ and Cl^- is nearly the same
- (c) It is a good conductor of electricity
- (d) All of the above

Ans. (d)

24. A depolarizer used in the dry cell batteries is

- (a) KCl
- (b) MnO_2
- (c) KOH
- (d) None of the above

Ans. (b)

25. The hydrolysis of alkyl halides by aqueous NaOH is best termed as

- (a) Electrophilic substitution reaction
- (b) Electrophilic addition reaction
- (c) Nucleophilic addition reaction
- (d) Nucleophilic substitution reaction

Ans. (d)

26. The hydrocarbon that gives a red precipitate with ammoniacal cuprous chloride is (where $^{\circ}$ means a triple bond)

- (a) $CH_3-CH_2-CH_2-CH_3$
- (b) $CH_3-C^{\circ}C-CH_3$
- (c) $CH_2=CH-CH=CH_2$
- (d) $CH_3-CH_2-C^{\circ}CH$

Ans. (d)

27. Which of the following reagents is neither neutral nor basic

- (a) Lucas' reagent
- (b) Tollen's reagent
- (c) Bayer's reagent
- (d) Fehling's solution

Ans. (a)

28. The substance which is most easily nitrated

- (a) Toluene
- (b) Benzene
- (c) Nitrobenzene
- (d) Chlorobenzene

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Ans. (a)

29. Carbylamine reaction is a test for

- (a) Primary amine
- (b) Secondary amine
- (c) Tertiary amine
- (d) Quarternary ammonium salt

Ans. (a)

30. Which of the following oxides cannot be reduced by carbon to obtain metal

- (a) ZnO
- (b) Al₂O₃
- (c) Fe₂O₃
- (d) PbO

Ans. (b)

31. Which of the following is not an oxide ore?

- (a) Cassiterite
- (b) Siderite
- (c) Pyrolusite
- (d) Bauxite

Ans. (b)

32. Which among the following is called philosopher's wool

- (a) Cellulose
- (b) Calamine
- (c) Stellite
- (d) Cerussite

Ans. (c)

33. Out of 10 white, 9 black and 7 red balls, in how many ways can we select one or more balls

- (a) 234
- (b) 52
- (c) 630
- (d) 879

Ans. (d)

34. A and B throw a dice. The probability that A's throw is not greater than B's is

- (a) 5/12
- (b) 7/12
- (c) 11/12
- (d) 5/36

Ans. (b)

35. Given two numbers a and b. Let A denote the single AM between these and S denote the sum of n AMs between them. Then S/A depends upon

- (a) n
- (b) n,a
- (c) n,b
- (d) n,a,b

Ans. (a)

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36. If the sum of the roots of the equation $ax^2+bx+c=0$ is equal to the sum of the squares of their reciprocals, then, $a/c, b/a, c/b$ are in

- (a) AP (b) GP (c) HP (d) None of the these

Ans. (c)

In the following questions \int represents the integral sign-for eg. $\int_1^2 [f(x)] dx$ means integration of the function $f(x)$ over the interval 1 to 2.

37. Value of $\int_{-1}^2 [2-x^2] dx$, ie integration of the function $|2-x^2|$ over the interval -1 to 2.

- (a) 0 (b) 1 (c) 2 (d) None of the above

Ans. (d)

38. If $\int_0^{\pi/4} [\log \sin x] dx = k$, then the value of $\int_0^{\pi/4} [\log(1 + \tan x)] dx$, where P stands for π , is

- (a) $-k/4$ (b) $k/4$ (c) $-k/8$ (d) $k/8$

Ans. (c)

39. If a, b, c be in GP and p, q be respectively AM between a, b and b, c then

- (a) $2/b = 1/p + 1/q$ (b) $2/b = 1/p - 1/q$ (c) $2 = a/p - c/q$ (d) None of the above

Ans. (a)

40. A solution of $KMnO_4$ is reduced to MnO_2 . The normality of solution is 0.6. The molarity is

- (a) 1.8M (b) 0.6M (c) 0.1M (d) 0.2M

Ans. (d)

The questions 41-46 are based on the following pattern. The problems below contain a question and two statements giving certain data. You have to decide whether the data given in the statements are sufficient for Answering the questions. The correct Answer is

- (A) If statement (I) alone is sufficient but statement (II) alone is not sufficient.
 (B) If statement (II) alone is sufficient but statement (I) alone is not sufficient.
 (C) If both statements together are sufficient but neither of statements alone is sufficient.
 (D) If both together are not sufficient.

e-INTERVIEW

41. What is John's age?

(I) In 15 years John will be twice as old as Dias would be (II) Dias was born 5 years ago

Ans. (C)

42. What is the distance from city A to city C in kms?

(I) City A is 90 kms from City B (II) City B is 30 kms from City C

Ans. (D)

43. Is $A=C$? A,B,C are real numbers

(I) $A-B=B-C$ (II) $A-2C = C-2B$ **Ans.** (C)

44. What is the 30th term of a given sequence ?

(I) The first two terms of the sequence are 1, $1/2$ (II) The common difference is - $1/2$

Ans. (A)

45. Was Avinash early, on time or late for work?

(I) He thought his watch was 10 minutes fast (II) Actually his watch was 5 minutes slow

Ans. (D)

46. What is the value of A if A is an integer?

(I) $A^4 = 1$ (II) $A^3 + 1 = 0$

Ans. (B)

47. A person travels 12 km in the southward direction and then travels 5km to the right and then travels 15km toward the right and finally travels 5km towards the east, how far is he from his starting place?

(a) 5.5 kms (b) 3 km (c) 13 km (d) 6.4 km

Ans. (b)

48. X's father's wife's father's granddaughter uncle will be related to X as

(a) Son (b) Nephew (c) Uncle (d) Grandfather

Ans. (c)

49. Find the next number in the series **1, 3, 7, 13, 21, 31**

(a) 43 (b) 33 (c) 41 (d) 45

For Placement

Ans. (a)

50. If in a certain code "RANGE" is coded as 12345 and "RANDOM" is coded as 123678. Then the code for the word "MANGO" would be

- (a) 82357 (b) 89343 (c) 84629 (d) 82347

Ans. (d)

51. If "PROMPT" is coded as QSPLOS ,then "PLAYER" should be

- (a) QMBZFS (b) QWMFDW (c) QUREXM (d) URESTI

Ans. (a)

52. If A is beside F then who is are the two neighbours of B?

- (a) D and C (b) E and C (c) D and E (d) Either (a) or (b)

Ans. (c)

53. If D is adjacent to F then who is adjacent to C?

- (a) E and B (b) D and A (c) D and B (d) either (a) or (c)

Ans.(d)

54. Complete the sequence **A, E, I, M, Q, U, _ , _**

- (a) B, F (b) Y, C (c) G, I (d) K, O

Ans.(b)

55. A person travels 6km towards west, then travels 5km towards north ,then finally travels 6km towards west. Where is he with respect to his starting position?

- (a) 13km east (b) 13km northeast (c) 13km northwest (d) 13km west

Ans. (c)

56. If A speaks the truth 80% of the times, B speaks the truth 60% of the times. What is the probability that they tell the truth at the same time

- (a) 0.8 (b) 0.48 (c) 0.6 (d) 0.14

Ans.(b)

57. If the time quantum is too large, Round Robin scheduling degenerates to

- (a) Shortest Job First Scheduling (b) Multilevel Queue Scheduling (c) FCFS (d) None of the above

Ans. (c)

e-INTERVIEW

58. Transducers are used for which of the following purposes

- (a) Uplinking
- (b) Downlinking
- (c) Both (a) and (b)
- (d) None of the above

Ans. (c)

59. The format specifier "%d" is used for which purpose in C

- (a) Left justifying a string
- (b) Right justifying a string
- (c) Removing a string from the console
- (d) Used for the scope specification of a char[] variable

Ans. (a)

60. Virtual functions allow you to

- (a) Create an array of type pointer-to-base-class that can hold pointers to derived classes
- (b) Create functions that have no body
- (c) Group objects of different classes so they can all be accessed by the same function code
- (d) Use the same function call to execute member functions to objects from different classes

62. A sorting algorithm which can prove to be a best time algorithm in one case and a worst time algorithm in worst case is

- (a) Quick Sort
- (b) Heap Sort
- (c) Merge Sort
- (d) Insert Sort

Ans. (a)

63. What details should never be found in the top level of a top-down design?

- (a) Details
- (b) Coding
- (c) Decisions
- (d) None of the above

Ans. (c)

64. In an absolute loading scheme, which loader function is accomplished by assembler

- (a) Reallocation
- (b) Allocation

For Placement

e-INTERVIEW

- (c) Linking
- (d) Both (a) and (b)

Ans. (d)

65. Banker's algorithm for resource allocation deals with

- (a) Deadlock prevention
- (b) Deadlock avoidance
- (c) Deadlock recovery
- (d) None of these

Ans. (b)

66. Thrashing can be avoided if

- (a) The pages, belonging to the working set of the programs, are in main memory
- (b) The speed of CPU is increased
- (c) The speed of I/O processor are increased
- (d) All of the above

Ans. (a)

67. Which of the following communications lines is best suited to interactive processing applications?

- (a) Narrowband channels
- (b) Simplex channels
- (c) Full-duplex channels
- (d) Mixedband channels

Ans. (b)

68. A feasibility document should contain all of the following except

- (a) Project name
- (b) Problem descriptions
- (c) Feasible alternative
- (d) Data flow diagrams

Ans. (d)

69. What is the main function of a data link content monitor?

- (a) To detect problems in protocols
- (b) To determine the type of transmission used in a data link
- (c) To determine the type of switching used in a data link
- (d) To determine the flow of data

Ans. (a)

For Placement

e-INTERVIEW

70. Which of the following is a broadband communications channel?

- (a) Coaxial cable
- (b) Fiber optic cable
- (c) Microwave circuits
- (d) All of the above

Ans. (d)

71. Which of the following memories has the shortest access time?

- (a) Cache memory
- (b) Magnetic bubble memory
- (c) Magnetic core memory
- (d) RAM

Ans. (a)

72. A shift register can be used for

- (a) Parallel to serial conversion
- (b) Serial to parallel conversion
- (c) Digital delay line
- (d) All the above

Ans. (d)

73. In which of the following page replacement policies, Balady's anomaly occurs?

- (a) FIFO
- (b) LRU
- (c) LFU
- (d) NRU

Ans. (a)

74. Subschema can be used to

- (a) Create very different, personalised views of the same data
- (b) Present information in different formats
- (c) Hide sensitive information by omitting fields from the sub-schema's description
- (d) All of the above

Ans. (d)

For Placement

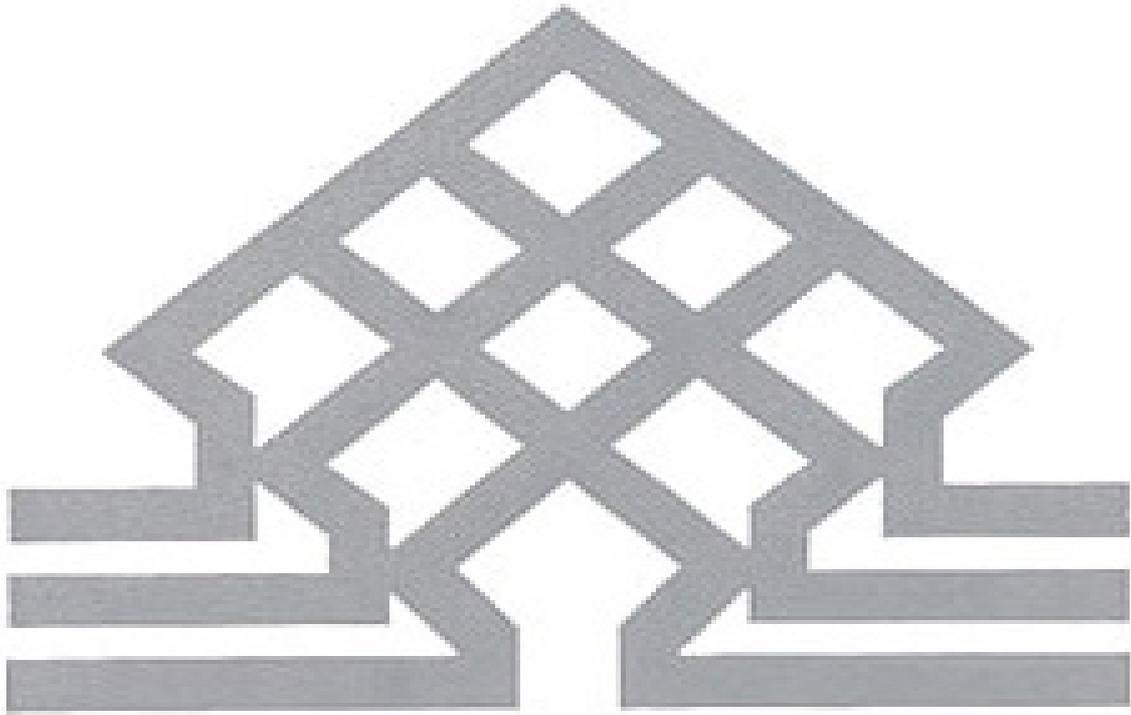
e-INTERVIEW

Technical Questions

1. Add 79H and 86H and tell the contents of flags
2. Scr is used for _____ (ac, dc , both)
3. Push pull amplifier is used to remove which harmonics (even , odd , both)
4. PAM is demodulated using ____ (low pass filter , high pass filter)
5. 16k memory is needed. How many chips with 12 address buses and 4 data buses are needed.
6. AM wave is detected using _____ detector
7. Which flip flop is used for shift registers
8. Program counter does what __ (stores a memory address, address of the present instruction)
9. In a bistable multivibrator communication capacitor is used for _____ (speed up response , ac coupling)
10. Totem pole is what?
11. Time constant for an integrator and differentiator should be (small , high etc.)
12. TV waves are __ (sky waves , space waves etc.)
13. Which configuration has highest i/p imp. (ce , cb , cc)
14. Parabolic antenna with 2degree angle. What is its directivity.
15. Given 10 mhz pe modulation and we got a 100 mhz band. How many channels can be there.

For Placement

e-INTERVIEW



Satyam

For Placement

e-INTERVIEW

Satyam

Profile

Satyam, a **SEI-CMM Level 5 company**, offers a range of expertise in the areas of Information Technology: Software Development Services, Systems Integration, ERP Solutions, Product Development, Internet access & hosting services, Electronic Commerce and Consulting. **Satyam has nearly 6,000 IT professionals**, who operate out of its **state-of-the-art software development centers located in India, the USA, Japan, Singapore and the UK**. These Centers work as an extended enterprise (IT partner) for over 150 Fortune 500 and multinational clients worldwide

Satyam, a multifaceted, totally integrated IT solutions provider is engaged in application development and maintenance, systems integration, datamarts, conversion and migration, Euro currency and engineering services (CAD/CAM/CAE).

It specializes in customized IT solutions for industries in the areas of **Manufacturing, Financial services, Insurance, Transtation, Telecom, Healthcare and Power**. The **company also offers Network and network-enabled services in India**. It provides Internet access & hosting services, Intranet, e-mail, EDI, store & forward, and online information services.

Achievements: A by-product of Satyam's pursuit of excellence

Since inception, Satyam has always been at the forefront in Software Quality. Given the importance of Quality in enhancing our competencies and delivering business value to customers, our delivery units have been appraised for their process maturity under the various globally accepted quality models and standards. We are one of the founding members of the eSourcing Capability Model (eSCM) Consortium in partnership with Carnegie Mellon University.

Our milestones include

- Satyam simulated a first-of-its-kind, cross-border country outage and business continuity operation in Singapore
- One of the first companies to have been globally certified to ISO 27001, ISO 20000 and ISO 9001 standards
- First company in the US, Australia, Singapore, Shanghai, Kuala Lumpur and India to have achieved the latest Information security standard, ISO 27001.
- Being the first company to get ISO 9001-2000 certified
- Being one of the first 10 companies in the world to get certified for CMM Level 5
- Being one among the first five companies to get certified for BS7799 [first IT company]

For Placement

- Having mature processes for Business Continuity & Information Security
- Pursuing the Six Sigma methodology for achieving high levels of maturity

First-of-its-kind, cross-border country outage recovery

In what is believed to be a first-of-its-kind, cross-border country outage recovery – Satyam simulated a nationwide outage in India, and revived business operations from its Global Business Continuity and Disaster Recovery Center in Singapore. The exercise showcased Satyam’s ability to ensure seamless business continuity for its customers, as well as its disaster recovery capabilities. It also highlighted the complex processes involved in an event of such magnitude.

Global Certifications

Satyam has achieved global certification against ISO 27001 (Information Security Management), ISO 20000 (IT Service Management for Infrastructure Management System and Network & Systems) and ISO 9001 standards in the certification audit conducted by BVQI, UK.

QUALIFY, Satyam's Quality Management System integrates the requirements of all these standards and enhances the transparency and eliminates explicit references to any of these models during implementation. This ensures proliferation of industry best practices across the organization. Satyam with a global presence in 53 countries across 6 continents requires a uniform system for delivering value to the customers. Integrated approach towards these standards provides a holistic approach and ease of implementation, thereby enhancing the customer’s confidence in Satyam’s Quality Management & Information Security Management systems.

ISO 27001

Satyam became the first IT Company in Singapore, Shanghai and Kuala Lumpur to achieve the latest information security standard, ISO 27001.

The audit for ISO 27001 / BS 7799-2:2005 was conducted in the Satyam offices at Singapore, Shanghai and Kuala Lumpur from April 24 - 28, 2006 by Trevor Douce, Lead Auditor from BVQI, UK. In a significant and path breaking move, Satyam has also obtained the certification of its global Data Center, Cleveland and global Disaster Recovery Center at Singapore.

The global Disaster Recovery Center is, in effect, a Secondary Command and Control Center for the Satyam global network, and is rightly positioned to service the global offshoring model of Satyam. The concept design, implementation and certification of such a facility gives Satyam a head-start in its operational readiness, and builds tremendous resilience into its networks. This is clearly an industry best practice demonstrating thought leadership and delivery excellence of Satyam over the competition.

ISO 20000

Satyam’s internal IT service Management division has obtained ISO 20000 certification, the latest standard for implementation of IT Service Management. Originally certified for BS 15000 for its Infrastructure Management Services and

internal IT Service Management operations in Chennai, this is an extension of scope to Satyam's all-India locations as well as an upgrade from the BS 15000 standards.

ISO 20000 is the new standard for IT Service Management after BS 15000 standard, which brings alignment of structures among other changes and provides a common understanding of the management of IT services worldwide. Satyam is one of the first few IT Services organizations to be certified to ISO 20000.

The audit was conducted between February 20 - 22, 2006 by Trevor Douce, Lead Auditor and Mr. Martin Hegarty from BVQI at the Bangalore, Pune and Hyderabad locations. Auditors found that commitment to implementing the ITSM standards, open communication and positive orientation towards improvements to be some of the best practices. The Audit started with the BS15000 framework but the Auditors after seeing the robust systems in place decided to upgrade the certification to the newly formed ISO20000.

AS9100/ EN9100 certification

The Integrated Engineering Solutions Practice at Satyam has been certified to AS9100/EN9100 standards. Satyam now joins the select list of few companies who have achieved this certification. AS9100 is a standard for the Aerospace domain recognized in America while EN9100 is a standard recognized by the European countries. These standards ensure quality and safety in the "high risk" aerospace industry.

The audit was conducted between February 20 - 23, 2006 by Trevor Douce, Lead Auditor from BVQI,UK at Bangalore. According to the auditor, "Satyam has always proved to be a leader in the field of Software Engineering and Quality. The move to AS9100/EN9100 certification is a major challenge to any company but Satyam rose to the challenge in the usual manner demonstrating excellent commitment and compliance to the requirements of the standards and dedication to the to the aerospace industry".

CMMI

At Satyam, our strategy has been to follow the world benchmarks in Quality and also to set new benchmarks by implementing the latest models & certifications.

In this context, Satyam has implemented the Capability Maturity Model Integrated (CMMI model) developed by the Software Engineering Institute (SEI), Carnegie Mellon University, USA for improving the software processes in the organization to achieve Maturity Level 5.

All business units within Satyam that qualify for a CMMI assessment have been assessed at maturity level 5. In all, 10 independent assessments were conducted to cover the entire organization under the CMMI initiative.

The assessment was led by Raghav Nandyal of SITARA Technologies Pvt. Ltd., an India-based assessment firm, as a transition partner of the Software Engineering Institute.

Satyam as an organization had consciously adopted a staggered approach for the CMMI assessments for the following reasons:



- to provide focused attention to the assessments and to ensure the rigor of process implementation
- to identify unit specific and / or domain specific process gaps
- to proliferate the strengths identified during each assessment across the organization
- to address the process improvement opportunities arising out of each assessment at the organization level so as to ensure uniform institutionalization and enrich Satyam's QMS, QUALIFY
- to ensure enhanced coverage of projects and associates across the organization thereby eliminating sampling errors
- to get in a large cross section of the organization into this initiative, thereby addressing soft issues such as belongingness and involvement in organization-wide activities

BS7799

February 2002: Satyam became one of the first companies in India to undergo certification as per BS - 7799 from the Ministry of Information, Govt. of India for Information Security Management System for all Indian locations.

February 2005: All 25 Indian centers of Satyam recertified for compliance to BS7799 - 2002 by BVQI, London.

Security-Continuity vision for 2005

Satyam -the secure and resilient partner.

The vision of Satyam is astutely addressed through mature ISMS and BCMS policies and effective security and continuity governance, which have ensured that the Satyam ISMS & BCMS have become key differentiators for business to the customers.

IMC Bajaj National Quality Trophy for 2001

Satyam won the prestigious IMC Bajaj National Quality Trophy for 2001, one of the highest Business Excellence awards in India. This award instituted in 1997, by the Indian Merchants Chamber, recognizes Indian Companies for their Business Excellence and Achievement. Similar to the renowned 'Malcolm Baldrige National Quality Award' for US Companies, the award promotes understanding of the requirements for Business Excellence and sharing of information on successful performance strategies.

First ISO 9001:2000 Certified Organization in the World

Satyam became the first organization in the world assessed by BVQI and found to be in accordance with the requirements of the new ISO 9001:2000 International Standards, under the Tick IT scheme.

SEI CMM® Level 5 Assessment

Satyam is one of the first 10 companies in the world to be assessed at an organization-wide SEI CMM® Level 5. Satyam achieved this most sought after Quality standard in the world – the Level 5 of the Capability Maturity Model® of the Software Engineering Institute (SEI) instituted by the Carnegie Mellon University - in the first attempt.

CMM® is registered in the U.S. Patent and Trademark Office by Carnegie Mellon University

Milestones: 1987 - 1992

Satyam's growth has been an eventful and highly charged journey toward excellence, a journey marked by pioneering achievements and global awards. Satyam has made significant contributions to the industry in India and overseas. Some of our important milestones are listed below.

May 1992	Initial Public Offering oversubscribed by a factor of 17.
January 1992	Installation of 64 kbps satellite link, which paves the way for online access to global clients.
August 1991	Recognized as a Public Limited Company.
June 1991	Deere & Co., Satyam's first Fortune 500 Client, initiates an offshore software project.
June 1987	Satyam incorporated as a private limited company.

Milestones: 1993 - 1998

Satyam's growth has been an eventful and highly charged journey toward excellence, a journey marked by pioneering achievements and global awards. Satyam has made significant contributions to the industry in India and overseas. Some of our important milestones are listed below.

December 14, 1998	Announcement of Satyam GE Joint Venture.
November 22, 1998	Launch of Satyam Infoway's ISP Service.
September 1997	Satyam Spark Solutions launches SearchPad, an intelligent search agent for the Internet.
May 1997	First Indian IT Company to get ITAA Certification for Year 2000 Solutions.
September 1996	Formal inauguration of Satyam Technology Center outside Hyderabad city.
April 1996	Satyam Spark Solutions set up.
April 1996	Satyam Enterprise Solutions comes into being.
December 1995	Satyam Infoway incorporated.
November 1995	Satyam Renaissance founded.
July 1995	Rights Issue offered.

July 1993

Joint Venture with Dun & Bradstreet.

Milestones: 1999 - 2004

Satyam's growth has been an eventful and highly charged journey toward excellence, a journey marked by pioneering achievements and global awards. Satyam has made significant contributions to the industry in India and overseas. Some of our important milestones are listed below.

February 9, 2004	Satyam opens new development center in Mississauga, Canada
January 30, 2004	Satyam Computers plAns to set up base in Kolkata
December 23, 2003	Satyam awarded IBM Lotus Award in Knowledge & Content Management Solutions category in the 10th Annual IBM Lotus Awards
November 13, 2003	The Chairman of Satyam, Mr. B Ramalinga Raju given the closing bell honor at the New York Stock Exchange
May 13, 2003	Satyam's first customer summit a big success
April 28, 2003	Satyam and Microsoft sign MOU to provide world-class IT outsourcing services to Asia-Pacific region
April 28, 2003	Indian Software Giant Satyam Computer Services Launches Global Solutions Centre in Malaysia
April 04, 2003	Satyam partners Hummingbird to set up South Asia's first Hummingbird's ETL/BI Competency Center
March 17, 2003	Satyam signs new multi-year service agreements with TRW Automotive and Northrop Grumman
February 27, 2003	Satyam announces business continuity center in Singapore, the first of its kind outside India
December 30, 2002	Satyam stated as " Top choice for SAP support" by Giga Research group
November 19, 2002	Satyam ranked 3rd in top 10 US revenue growth for software maintenance & support provider by Gartner Inc.
November 14, 2002	Microsoft Chairman and Chief Software Architect, Bill Gates visits Satyam Technology Center
October 28, 2002	Satyam Computer Services and PeopleSoft India form Strategic Alliance
October 17, 2002	AP Chief Minister inaugurates Nipuna's BPO facility at Hyderabad
October 17, 2002	Satyam Welcomes Prime Minister of Malaysia at its hi-tech campus
October 11, 2002	B. Ramalinga Raju, wins Corporate Citizen of the Year Award

October 11, 2002	Satyam to Provide Extended Support Services to Inktomi Content Networking Customers
October 09, 2002	Satyam's Support To World Bank Intranet Wins World-Wide Recognition
October 08, 2002	Satyam Computer Services Announces Support For Microsoft Solution for UNIX Migration
October 04, 2002	SOFTBANK ASIA INFRASTRUCTURE FUND and VentureTech to invest \$20 Million in Sify
September 27, 2002	Satyam wins Golden Peacock Award for Excellence in Corporate Governance
September 25, 2002	Satyam and Commerce One Establish Strategic Partnership
September 05, 2002	Satyam's IT Offshore Service Delivery Program Cited as 'Industry Best Practice' by Aberdeen Group Report
September 04, 2002	Satyam and ETI Establish Strategic Alliance to Provide Data Integration Services to Fortune 500 Customers
August 30, 2002	Satyam campus at Hyderabad welcomes Intel CEO Craig Barrett
August 26, 2002	Satyam and Iona enter into strategic partnership
August 08, 2002	Satyam Signs Agreement with Saint-Gobain Abrasives
May 31, 2002	Healthaxis and Satyam Team to Deliver Web-enabled Benefits Administration System for Washington State Health Care Authority
March 28, 2002	Satyam nominated for eOscar 2002 in the Best B2B solutions category
March 22, 2002	Satyam is first company to implement Oracle CRM Applications in Thailand
March 20, 2002	Satyam gets certified under BS 7799 International Information Security Standards
February 27, 2002	Satyam to partner Rational Software in Large Systems Integration and Test Bureau
February 20, 2002	Satyam and Hummingbird Announce Global Strategic Alliance
January 29, 2002	Indian Software Leader Satyam Launches Operation in China.
December 13, 2001	Satyam wins the IMC Ramkrishna Bajaj National Quality Award Trophy.
November 22, 2001	Satyam announces IT Services Partnership with CSC
November 20, 2001	Satyam and Carnegie Mellon launch world's first IT-enabled Services Quality Model
November 1, 2001	Satyam opens Offsite Development Center in Sydney.



INTERVIEW

October 30, 2001	Satyam Europe wins software contract from Reuters.
October 29, 2001	Satyam Allies Itself with New Services Company Focused on XML-based Communities for Healthcare: MedBiquitous Services.
October 5, 2001	Satyam launches State-of-Art Solutions to Enhance Mobile Connectivity using the Microsoft Windows-Powered Pocket PC 2002.
October 3, 2001	Satyam declared a finalist in Microsoft MEC Awards 2001 for innovative business solutions.
May 15, 2001	Satyam listed on New York Stock Exchange.
April 20, 2001	Satyam bags Frost & Sullivan Award for Competitive Strategy in ASP.
April 18, 2001	Satyam and Microsoft unveil .NET Solution Frameworks for Asia-Pacific customers.
April 16, 2001	Satyam sets up Asia-Pac Headquarters at Singapore.
April 3, 2001	Satyam's Middle East Solutions Center inaugurated at Dubai Internet City.
March 29, 2001	Satyam and Ford sign MoU for Software Services.
March 22, 2001	Review 200 Survey rates Satyam one of the 10 Most Well-Regarded Companies in India.
March 22, 2001	Satyam becomes first ISO 9001:2000 Company in the world as certified by BVQI.
February 12, 2001	Satyam Europe Launches Enterprise Application Integration (EAI) Initiative.
January 20, 2001	Satyam, i2 Technologies announce partnership.
January 20, 2001	Satyam and CCMB partner for global foray into Bioinformatics.
December 22, 2000	Satyam Chairman Ramalinga Raju named "IT Man of the Year" by Dataquest.
December 20, 2000	Satyam TRW JV awarded \$ 200 m contract from TRW.
November 22, 2000	Satyam, Ariba forge alliance.
November 22, 2000	Satyam Quality head wins Qimpro award.
August 19, 2000	Satyam receives National HRD Award from Government of India.
July 1, 2000	SatyamWorld, Satyam's Organization-wide Intranet, bags CIO Magazine's World's Best 50/50 Intranet Sites award.
July 1, 2000	Satyam establishes dedicated Offshore Development Center for the Emirates Group.
June 8, 2000	Satyam, TRW form strategic alliance to service the Automobile Sector.

June 7, 2000	Satyam, Microsoft join hands to speed Web/E-Commerce Applications.
June 5, 2000	Satyam and Exterprise, USA, form global alliance to speed deployment of software solutions for Net Market Makers.
May 15, 2000	Satyam forms Joint Venture with Computer Associates to enable SMEs.
May 8, 2000	Satyam becomes the first organization in the world to launch Customer-Oriented Global Organization training.
March 29 ,2000	Satyam Subsidiary VisionCompass, Inc. globally launches VisionCompass software.
March 24, 2000	Satyam Chairman B. Ramalinga Raju invited to share the dais with US President William Jefferson Clinton at a CII Function at HiTec City, Hyderabad.
February 10, 2000	Satyam-GE receives ISO 9001 Certification within one year of operations.
February 2, 2000	Satyam declared one of '100 Most Pioneering Technology Companies' by World Economic Forum, Davos.
January 2000	Satyam's Joint Venture with Venture Engineering Services Ltd. goes on stream.
November 20, 1999	Satyam Infoway crosses the one-hundred thousandth customer mark for ISP services.
October 19, 1999	Satyam Infoway becomes the first Indian Internet company to be listed on NASDAQ.
September 17, 1999	Satyam Chairman B. Ramalinga Raju receives Ernst & Young Entrepreneurship (Services) Award.
August 1999	Satyam Spark Solutions Ltd., Satyam Enterprise Solutions Ltd. and Satyam Renaissance Ltd. formally merged with Satyam Computer Services Ltd.
June 11, 1999	Satyam launches Dr. Millennium, the most comprehensive solution for Y2K problems.
March 19, 1999	Satyam assessed at SEI CMM [®] Level 5.

Milestones: 2005 - Till date

Satyam's growth has been an eventful and highly charged journey toward excellence, a journey marked by pioneering achievements and global awards. Satyam has made significant contributions to the industry in India and overseas. Some of our important milestones are listed below.

July 21, 2005	Satyam acquired 100% stake in Singapore based Knowledge Dynamics, a leading Data Warehousing and Business Intelligence solutions provider
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April 21, 2005

Satyam acquired 75% stake in London based Citisoft Plc, a highly specialized business and systems consulting firm, focused exclusively on the Investment Management industry. The balance 25% stake will be acquired partly in April 2007 and the balance in April 2008

Written

Test

The Satyam paper provided here is a two year old paper. The pattern could have changed by now. We will try to get the latest papers as soon as possible. The paper is primarily divided into 2 sections:

Section #1

This section tests a candidate's **logical** and **analytical ability** along with the **vocabulary**. The questions asked in this section are based on the **CAT pattern**. For the *quantitative part*, it is advisable to solve **speed** and **distance**, **pipes** and **cisterns** and **time** and **work problems** from **R.S. Aggarwal's Mathematics for MBA** or any other management entrance coaching material.

Other references: Barron's **GMAT** preparation guide.

Section#2

This is the **technical section**. Along with the candidate's grasp on the subject, the section also tests the **general awareness** of the candidate in his/her **technical field**. You may also be asked to write **basic programs** like finding the **factorial** of a number, **squares** of n natural numbers, etc.

Interview

The interview consists of two stages: **Technical and HR**. In the technical interview candidates can be asked questions on:

1. Operating Systems
2. Data Structures.
3. C.
4. DBMS

(for computer students)

1. Microprocessors architecture of 8085.
2. Digital Circuits and Logic Design.
3. Basic Electronics.
4. Communications (questions pertaining to AM, FM, etc.)
5. Computer Networks.

(for electronics students)

PAPER 1--GENERAL APTITUDE

Directions:Each question given below consists of a word, followed by four words or phrases. Choose the lettered word or phrase that is most nearly *opposite* in meaning to the word in the question.

ANTONYMS

1. Disregarded

- (a) heed
- (b) hopeful
- (c) evade
- (d) dense

Ans. (a)

2. Obviate

- (a) becloud
- (b) necessitate
- (c) rationalize
- (d) execute

Ans. (b)

3. Superficial

- (a) profound
- (b) exaggerated
- (c) subjective
- (d) spirited

Ans. (a)

4. Abide

- (a) retract an offer
- (b) refuse to endure
- (c) shield from harm
- (d) exonerate

Ans. (b)

5. Acerbity

- (a) noteworthiness
- (b) hypocrisy
- (c) mildness of temperament
- (d) lack of anxiety

Ans. (c)



INTERVIEW

Directions: Each question or group of questions is based on a passage or set of conditions. For each question, select the best *Answer* choice given.

Questions 6-9

In a certain society, there are two marriage groups, Red and Brown. No marriage is permitted within a group. On marriage, males become part of their wife's group; women remain in their own group. Children belong to the same group as their parents. Widowers and divorced males revert to the group of their birth. Marriage to more than one person at the same time and marriage to a direct descendant are forbidden.

6. A Brown female could have had

- I. a grandfather born Red
- II. a grandmother born Red
- III. two grandfathers born Brown

- (a) I only
- (b) II only
- (c) I and II only
- (d) II and III only
- (e) I,II and III

Ans. (c)

7. A male born into the Brown group may have

- (a) an uncle in either group
- (b) a Brown daughter
- (c) a Brown son
- (d) a son-in-law born into the Red group
- (e) a daughter-in-law in the Red group

Ans. (a)

8. Which of the following is not permitted under the rules stated?

- (a) A Brown male marrying his father's sister
- (b) A Red female marrying her mother's brother
- (c) A man born Red, who is now a widower, marrying his brother's widow
- (d) A widower marrying his wife's sister
- (e) A widow marrying her divorced daughter's ex-husband

Ans. (b)

9. If widowers and divorced males retained the group they had upon marrying, which of the following would have been permissible?(Assume no previous marriages occurred)

- (a) A woman marrying her dead sister's husband
- (b) A woman marrying her divorced daughter's ex-husband.
- (c) A widower marrying his brother's daughter

- (d) A woman marrying her mother's brother, who is a widower
- (e) A divorced male marrying his ex-wife's divorced sister

Ans. (d)

Questions 10-13

Tom wishes to enroll in Latin AA, SAanskrit A, Armenian Literature 221, and Celtic Literature 701. Latin AA meets five days a week, either from 9 to 11 A.M or from 2 to 4 P.M. SAanskrit A meets either Tuesday and Thursday from 12 noon to 3 P.M., or Monday, Wednesday, and Friday from 10 A.M to 12 noon. Armenian Literature 221 meets either Monday, Wednesday, and Friday from 12:30 to 2 P.M., or Tuesday and Thursday, from 10:30 A.M to 12:30 P.M. Celtic Literature 701 meets by arrangement with the instructor, the only requirement being that it meet for one four-hour session or two two-hour sessions per week, between 9 A.M and 4 P.M from Monday to Friday, beginning on the hour.

10. Which combination is impossible for Tom?

- (a) Latin in the morning, SAanskrit on Tuesday and Thursday, and Armenian Literature on Monday, Wednesday, Friday
- (b) Latin in the afternoon and SAanskrit and Armenian Literature on Monday, Wednesday, and Friday.
- (c) Latin in the afternoon, SAanskrit on Monday, Wednesday, and Friday, and Armenian Literature on Tuesday and Thursday
- (d) Latin in the morning and SAanskrit and Armenian Literature on Monday, Wednesday, and Friday
- (e) Latin in the afternoon, Armenian Literature on Monday, Wednesday and Friday, and Celtic Literature on Tuesday

Ans. (d)

11. Which of the following gives the greatest number of alternatives for scheduling Celtic Literature, assuming that all other courses

- (a) Latin in the afternoon and Armenian Literature Monday, Wednesday and Friday
- (b) SAanskrit on Tuesday and Thursday and Armenian Literature on Monday, Wednesday and Friday
- (c) Latin in the afternoon and Armenian Literature Tuesday and Thursday
- (d) Latin in the morning and SAanskrit on Tuesday and Thursday
- (e) SAanskrit on Monday, Wednesday, and Friday. and Armenian Literature on Tuesday and Thursday

Ans. (a)

12. If the Celtic instructor insists on holding at least one session on Friday, in which of the following can Tom enroll?

- (I) Armenian Literature on Monday, Wednesday, and Friday
- (II) SAanskrit on Monday, Wednesday, and Friday

- (a) I only
- (b) II only

e-INTERVIEW

- (c) both I and II
- (d) I or II but not both
- (e) neither I nor II

Ans. (d)

13. Which of the following additional courses, meeting as indicated, can Tom take?

- (a) Maths--Monday, Wednesday, and Friday from 10A.M to 12 noon
- (b) French--Monday, Wednesday, and Friday from 11A.M to 12:30 P.M
- (c) English--Tuesday and Thursday from 2 to 4 P.M
- (d) Japenese--Tuesday and Thursday from 1 to 3 P.M
- (e) Old Norse-Icelandic--Monday only from 12 to 3 P.M

Ans. (b)

Questions 14-18

- (1) Ashland is north of East Liverpool and west of Coshocton
- (2) Bowling Green is north of Ashland and west of Fredericktown
- (3) Dover is south and east of Ashland
- (4) East Liverpool is north of Fredricktown and east of Dover
- (5) Fredricktown is north of Dover and west of Ashland
- (6) Coshocton is south of Fredricktown and west of Dover

14. Which of the towns mentioned is furthest to the northwest ?

- (a) Ashland
- (b) Bowling Green
- (c) Coshocton
- (d) East Liverpool
- (e) Fredericktown

Ans. (b)

15. Which of the following must be both north and east of Fredricktown?

- (I) Ashland
- (II) Coshocton
- (III) East Liverpool

- (a) I only
- (b) II only
- (c) III only
- (d) I and II
- (e) I and III

Ans. (e)

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16. Which of the following towns must be situated both south and west of at least one other town?

- (a) Ashland only
- (b) Ashland and Fredricktown
- (c) Dover and Fredricktown
- (d) Dover, Coshocton and Fredricktown
- (e) Dover, Coshocton and East Liverpool

Ans. (d)

17. Which of the following statements, if true, would make the information in the numbered statements more specific?

- (a) Coshocton is north of Dover
- (b) East Liverpool is north of Dover
- (c) Ashland is east of Bowling Green
- (d) Coshocton is east of Fredericktown
- (e) Bowling Green is north of Fredericktown

Ans. (a)

18. Which of the numbered statements gives information that can be deduced from one or more of the other statement?

- (a) (1)
- (b) (2)
- (c) (3)
- (d) (4)
- (e) (6)

Ans. (c)

Questions 19-22

Spelunkers International offers exploring tours in eight caves: Abbott, Benny, Caesar, Dangerfield, Ewell, Fields, Guinness, and Hope

- (1) Class 1 spelunkers may not attempt cave Ewell, Fields or Hope
- (2) Class 2 spelunkers may not attempt Hope
- (3) Class 3 spelunkers may attempt any cave
- (4) Cave Caesar may be attempted only by spelunkers who have previously explored cave Benny
- (5) Cave Fields may be attempted only by spelunkers who have previously explored cave Ewell
- (6) Only two of caves Benny, Caesar, Ewell, Fields, and Hope may be attempted by any explorer in a single tour

19. A class 2 spelunker who has previously explored cave Ewell may be restricted in choosing a tour by which rule(s)?

- (I) Rule(4)
- (II) Rule(5)
- (III) Rule(6)

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- (a) I only
- (b) II only
- (c) I and III only
- (d) II and III only
- (e) I, II and III

Ans. (c)

20. In how many different ways may a class 1 spelunker who has never explored any of the eightcaves before set up a tour of three caves, if she wishes to explore caves Abbott and Caesar?

- (a) 2
- (b) 3
- (c) 4
- (d) 5
- (e) 6

Ans. (b)

21. What is the maximum number of caves that a class 3 spelunker who has previously explored only cave Benny may include.in a single tour?

- (a) 4
- (b) 5
- (c) 6
- (d) 7
- (e) 8

Ans. (b)

22. If $x + y = 3$ and $y/x = 2$ then $y = ?$

- (a) 0
- (b) $1/2$
- (c) 1
- (d) $3/2$
- (e) 2

Ans. (e)

23. How many squares with sides $1/2$ inch long are needed to cover a rectangle that is 4 ft long and 6 ft wide

- (a) 24
- (b) 96
- (c) 3456
- (d) 13824
- (e) 14266

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24. If $a=2/3b$, $b=2/3c$, and $c=2/3d$ what part of d is b ?

- (a) $8/27$
- (b) $4/9$
- (c) $2/3$
- (d) 75%
- (e) $4/3$

Ans. (b)

25. Successive discounts of 20% and 15% are equal to a single discount of

- (a) 30%
- (b) 32%
- (c) 34%
- (d) 35%
- (e) 36

Ans. (b)

26. The petrol tank of an automobile can hold g liters. If a liters was removed when the tank was full, what part of the full tank was removed?

- (a) $g-a$
- (b) g/a
- (c) a/g
- (d) $(g-a)/a$
- (e) $(g-a)/g$

Ans. (c)

27. If $x/y=4$ and y is not '0' what % of x is $2x-y$

- (a) 150%
- (b) 175%
- (c) 200%
- (d) 250%

Ans. (b)

28. If $2x-y=4$ then $6x-3y=?$

- (a) 15
- (b) 12
- (c) 18
- (d) 10

Ans. (b)

29. If $x=y=2z$ and $xyz=256$ then what is the value of x ?

- (a) 12
- (b) 8
- (c) 16
- (d) 6

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Ans. (b)

30. $(1/10)^{18} - (1/10)^{20} = ?$

- (a) $99/10^{20}$
- (b) $99/10$
- (c) 0.9
- (d) none of these

Ans. (a)

31. Pipe A can fill in 20 minutes and Pipe B in 30 mins and Pipe C can empty the same in 40 mins. If all of them work together, find the time taken to fill the tank

- (a) $17 \frac{1}{7}$ mins
- (b) 20 mins
- (c) 8 mins
- (d) none of these

Ans. (a)

32. Thirty men take 20 days to complete a job working 9 hours a day. How many hours a day should 40 men work to complete the job?

- (a) 8 hrs
- (b) $7 \frac{1}{2}$ hrs
- (c) 7 hrs
- (d) 9 hrs

Ans. (b)

33. Find the smallest number in a GP whose sum is 38 and product 1728

- (a) 12
- (b) 20
- (c) 8
- (d) none of these

Ans. (c)

34. A boat travels 20 kms upstream in 6 hrs and 18 kms downstream in 4 hrs. Find the speed of the boat in still water and the speed of the water current?

- (a) $\frac{1}{2}$ kmph
- (b) $\frac{7}{12}$ kmph
- (c) 5 kmph
- (d) none of these

Ans. (b)

For Placement

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35. A goat is tied to one corner of a square plot of side 12m by a rope 7m long. Find the area it can graze?

- (a) 38.5 sq.m
- (b) 155 sq.m
- (c) 144 sq.m
- (d) 19.25 sq.m

Ans. (a)

SOME QUESTIONS WHEREIN TWO STATEMENTS ARE GIVEN ARE ALSO THERE WHERE YOU HAVE TO TELL WHICH STATEMENT IS CORRECT
SOME QUESTIONS ALSO APPEARED FROM THE BARRON'S GMAT GUIDE.
PAGE NO. 439 PASSAGE AND QUESTIONS 1 TO 9
PAGE NO. 440-441
PAGE 442 PASSAGE 2
ALSO REFER TO BARRON'S GRE BOOK FOR ADDITIONAL ANALYTICAL QUESTIONS.

PAPER 2--GENERAL AWARENESS

1. Who is the father of computers
2. Expand HTML,DMA,FAT,LAN,WAN,FDDetc
3. Which was intel's first microprocessor
4. Convert 1024 (in decimal) to octa and hexadecimal form
5. First microprocessor was
 - (a) 8085
 - (b) 8088
 - (c) 8086
 - (d) 80487
6. Give the name of a processor produced by mortorola?
7. What is the full form of WindowsNT ?
8. What is the difference between 8087 and 8086

BESIDES THIS QUESTIONS WERE ALSO BASED ON IBM PC CLONES,
BASIC QUESTIONS ON GUI
SIMPLE PROGRAMS LIKE FINDING FACTORIALS, LARGEST OF THREE NUMBERS ETC HAVE ALSO BEEN ASKED IN THE PAST.

30 questions of LAT (LOGICAL APTITUDE TEST) in 45 minutes.....
followed by GD & interview.....

mind u GD is the ELIMINATION ROUND

here in this college they have short listed 41 after written test....

25 after GD.... So be careful in GD you can be eliminated in GD....

Some of the topics of GD are....

- 1) ROLE OF WOMEN IN INDIAN ARMED FORCES
- 2) IS INDIA READY FOR IT OUTSOURCING
- 3) POLITICAL SITUATION IN INDIA FAVOURING IT
- 4) CHINA IS A THREAT TO INDIA IN IT.
- 5) ROLE OF ELECTRONICS MEDIA IN INDIA....

For Placement

e-INTERVIEW

INSTRUCTIONS

1. Please write your Name, College, HT no., Degree, Branch and question booklet no. on the Answer sheet.
2. The duration of the test is 60 min.
3. The question paper contains 50 questions and all questions are multiple choice.
4. Every correct Answer carries 2 marks.
5. For every wrong Answer $\frac{1}{4}$ mark are deducted.
6. Avoid guessing.
7. Do not write anything on the question paper. you will not be considered for selection if you do so.
8. Put a 'X' mark on the Answer of your choice on the Answer sheet.
9. If you wish to change your Answer put three horizontal lines on the choice you have already marked .
10. Use of any calculating device is prohibited.

1.

- 1.values of n and k is 100.
- 2.n is divided by k and the integer part of the quotient is stored in i.
- 3.n is divided by k and the remainder is stored in j.
- 4.i is multiplied by itself to get the new value of i.
- 5.if the values of I and j are equal then n is printed.
- 6.add 1 to n.
- 7.if the value of n exceeds 999 then stop.
- 8.go to step 2

the result of the above logic is

- a. 124,248,369,.... B. 101,204,309,....
c. 111,222,333,... d. none

Ans.B

2.

1. sony=0
2. jimmy =1
3. add jimmy to sony to get new sony
4. add sony to jimmy to get new jimmy
5. if jimmy is equal to 34 then stop
- 6 go to step 3

What will be the value of sony when the logic terminates

- a. 15 b. 18 c. 21 d. none

Ans. Sony=21

3.

- . get cost of the item (c)
 - 1.get number of items (n)
 - 2.multiply n by c to get total cost (tc)
 - 3if tc is above 10000 then discount (d)=5%
 - 4.if tc is less then 10000 but more than 5000 and c is above 85 then d=4.5%
 - 5.if tc is less than 5000 and c \geq 65 and n \geq 50then d=4%
- what will be the discount if 40 items were purchased each costing Rs. 58
- a. 5% b. 4.5% c. 4% d. none

Ans:none

For Placement

@-INTERVIEW

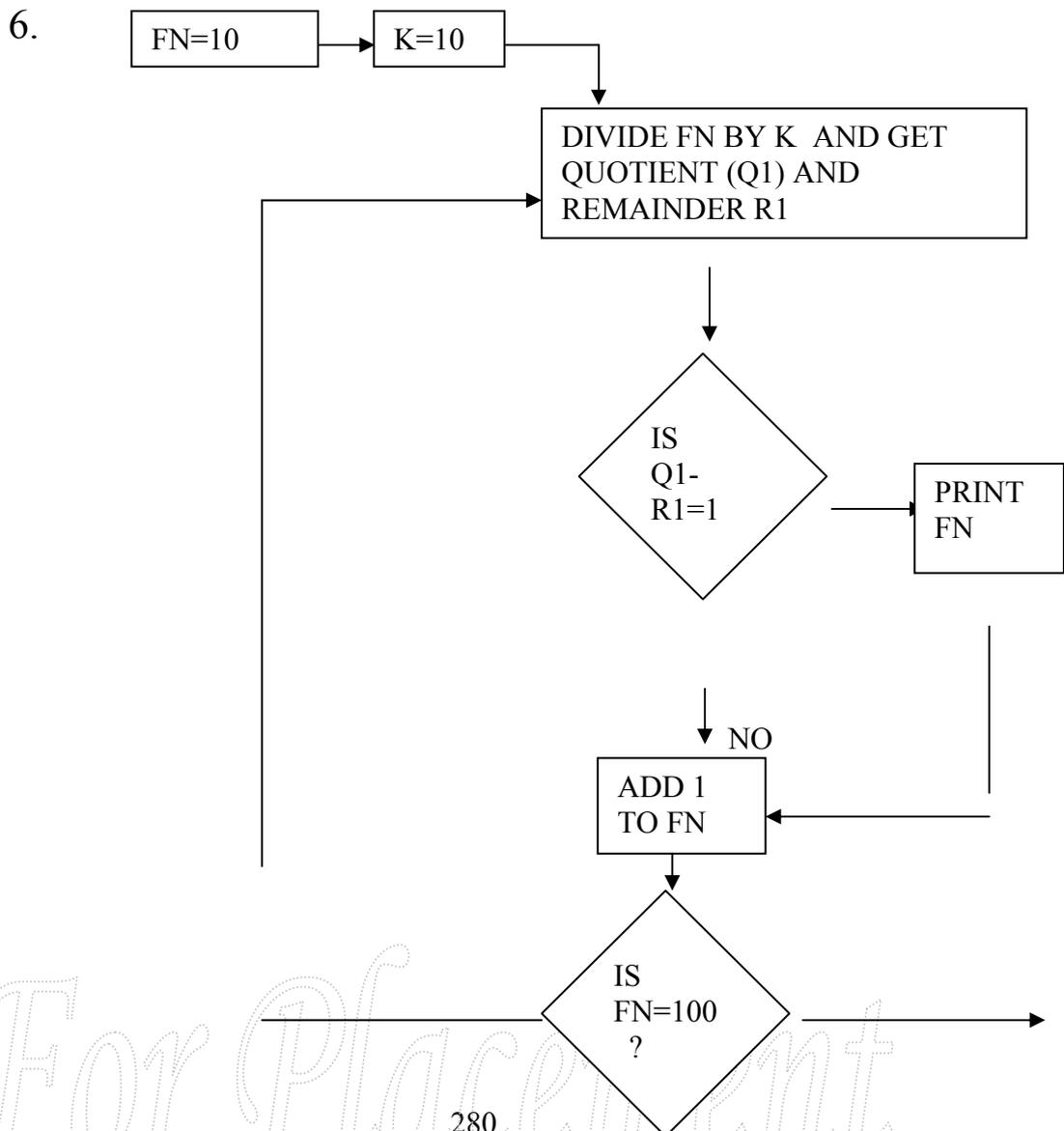
5

1. $k=0$
2. add 1 to k to get the value of z
3. $p=$ quotient of z divided by 10
4. $m=$ remainder of z divided by 10
5. if $m=p-1$ then print z
6. add 1 to k
7. if the value crosses 99 then stop
8. goto 2

the result of the above steps is

- (a) 11,22,33,..... (b) **10, 21,32,43,.....**
(c)12,23,34,..... (d) none

Ans: 10,21,32,43



THE NUMBER of values that are printed are
 a. 9 b. 19 c. 29 d. none

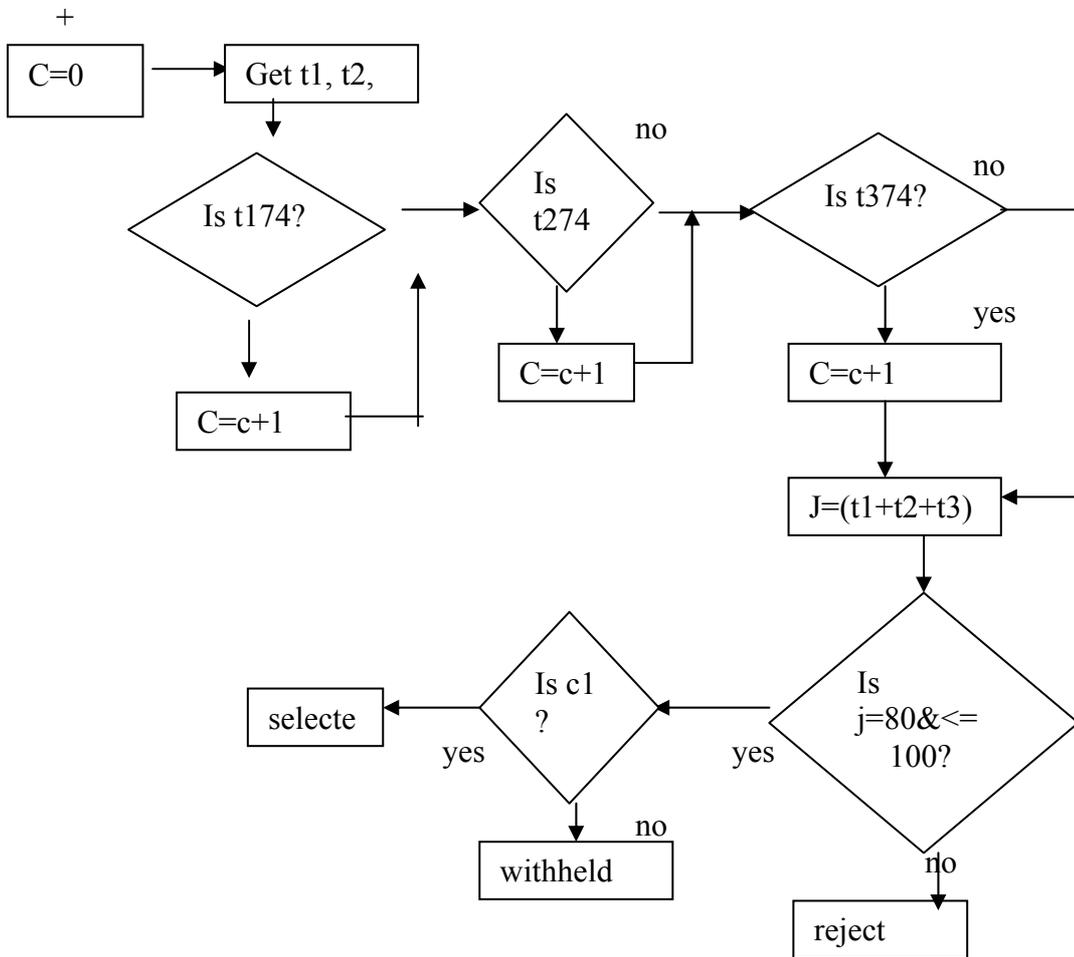
Ans a

1. cost of item C=RS 50
2. total cost (TC)=0
3. number of items purchased N =1
4. $TC=TC+C$
5. If the remainder of N divided by 5 is 0 then reduce Rs 10 from C
6. Increase the value of N by 1.

Using the above rule , how much money should one pay after buying 12 items

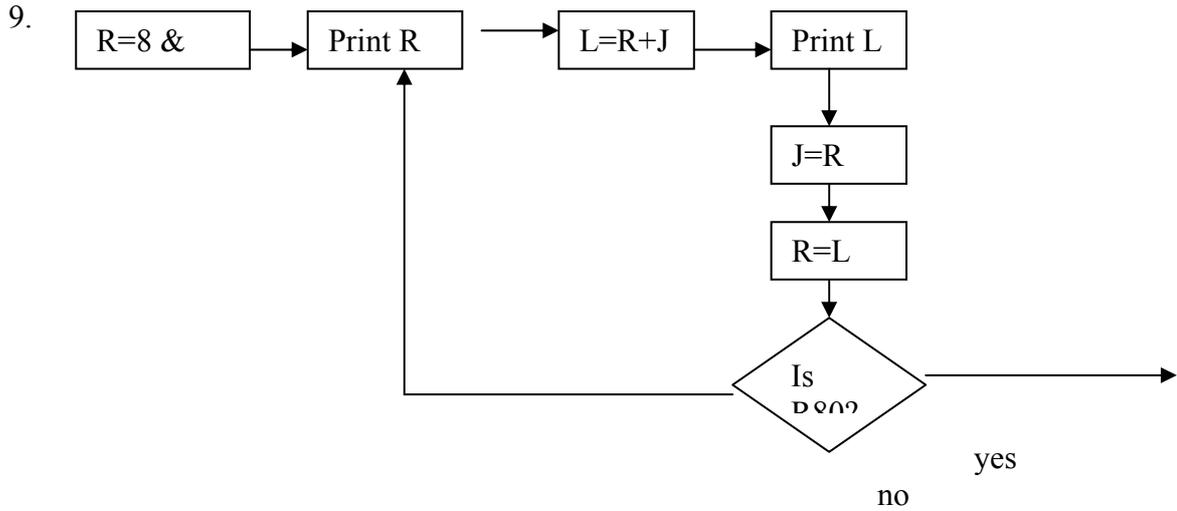
a. 480 b. 510 c. 540 d. **none**

8. every applicant takes three test .candidate is selected if he/she secures 80% above in the aggregate and 75% and above in at least two test . all test are evaluated to 100 marks



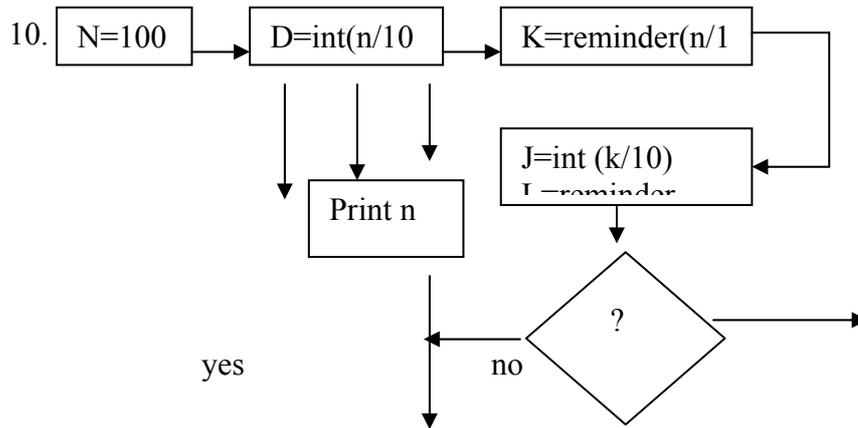
if the candidate scores 96,78,&68 in the three test going by the above logic, his result will be

a. rejected b. **selected** c. withheld d. none



the output of the above logic is

- a. 8, 13, 21, 32, 47, 63 b. 8, 13, 21, 34, 55, 89, c. 8, 13, 34, 55 d. **none**



if the numbers like 244, 514, 136, etc are to be printed from the above logic the ? should be replaced with

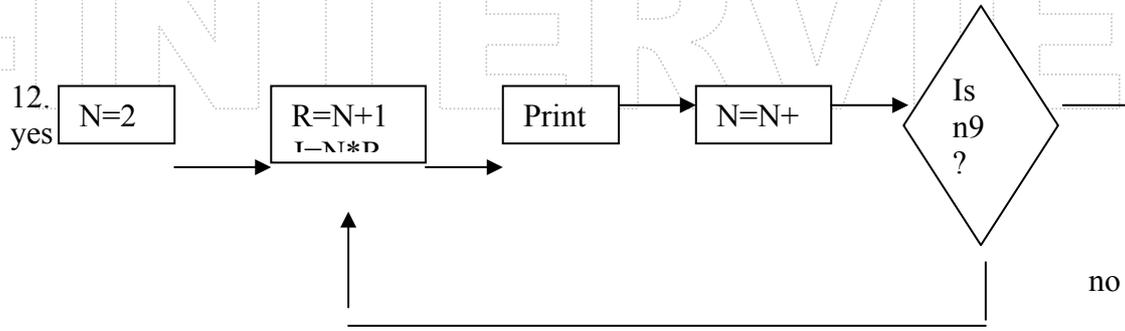
- a. $j+1$ or $j=1/2$ b. $j+1=d$ c. $j+1+d=10$ d. **none**

11.

1. let $fn=1$
2. let $a=2$
3. let fn be fn multiplied by a and add 1 to it
4. write the value of fn
5. if the value written is more than 777 then stop
6. -----
7. go to 3

if the expected output from the above logic is 3, 10, 41, 206, 1237, then the statement in the line 6 should be

- a. let $a=a*a$ b. $a=a+a$ c. $a=a+1$ d. **none**



the result of the above logic is

- a. 6,8,14, b. 6 , 12, 20 , 30, c. 6, 12, 18, 24, d.none

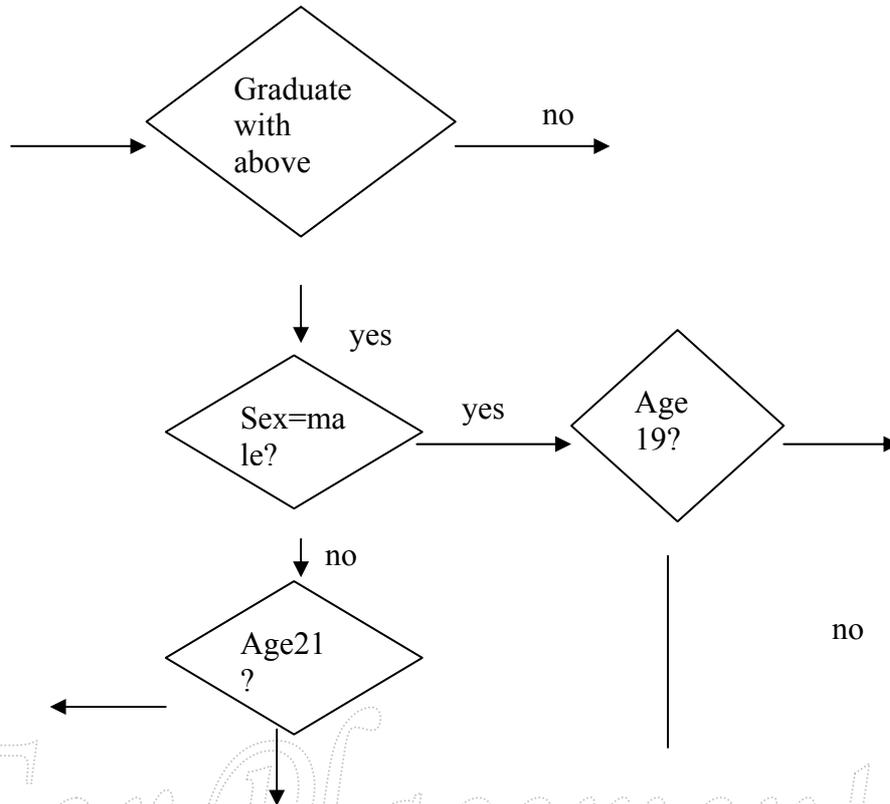
13. the following qualifications are necessary for the recruitment of the librarian. The candidate must

1. have masters degree in library science with atleast 55% marks
2. have one year specialization in information technology
3. have atleast 10 yrs experience in university
in case the candidate has
4. 15 yrs experience in college ,the case may be referred to vice chancellor
5. has obtained less then 55% but has 13 yrs experience in university, the case may be referred to registrar.
6. Has Ph.D in library science/Documentation the condition (1) may be waived.

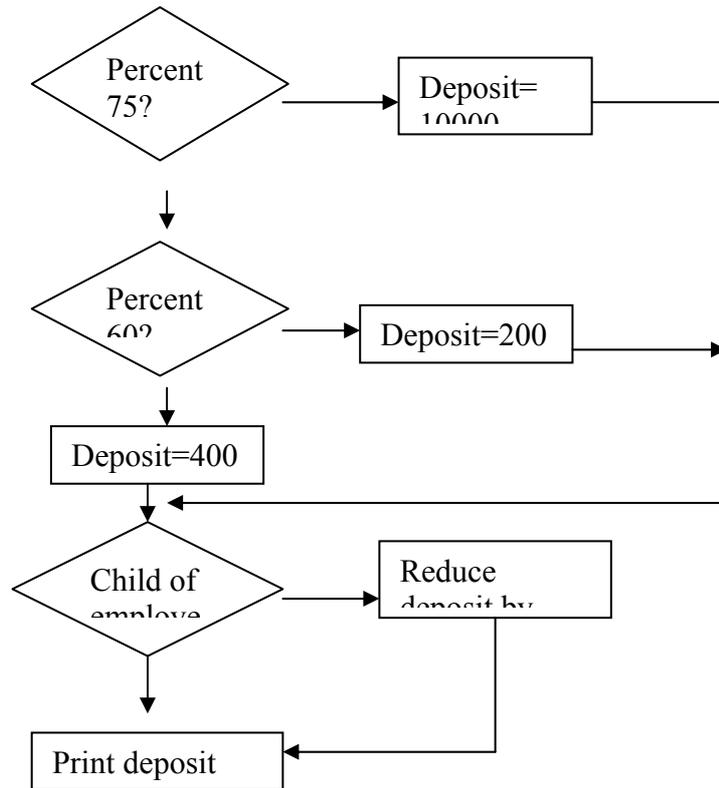
Gopal Brahma has been Deputy Librarian of SLC University since 1982 and has a masters degree in library science with 53% marks. Given the above rules the gopals information, gopal should be

- a. selected b. rejected c. referred to VC d. none

14. the following rules are applied for the appointment in a company



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Sruti's father Vijay works in a company. She secured 72% marks in her 12th class and holds post graduate qualification in Information systems. She was born on 15th march 1975. Given this data, the deposit to be paid by her to get employment in the company is

- a. 10000 b. 20000 c. in adequate data d. none

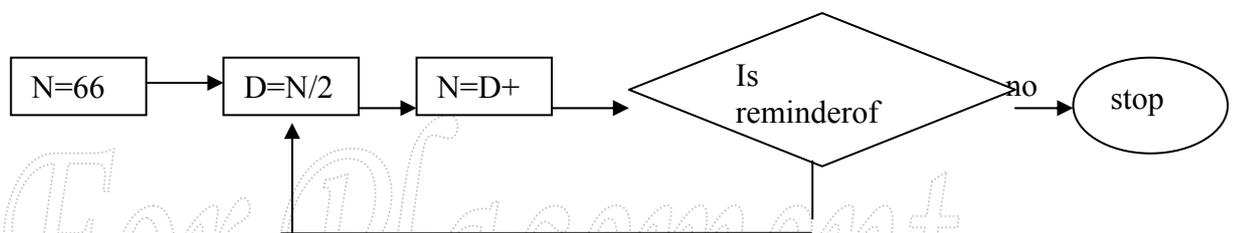
15.

1. $r = 2$
2. $j = R * R - R$
3. $R = R + 1$
4. $K = R * R - R$
5. Print K-J
6. Let $J = K$
7. If $R \geq 8$ then stop
8. Goto 3

The result of the above logic is

- a. 4, 9, 16, 25, b. **4, 6, 8, 10** c. 4,4,4,,4 d. none

16.



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after how much iterations will the above logic terminate?

- a. 8 b. 6 c. 7 d. none (b)

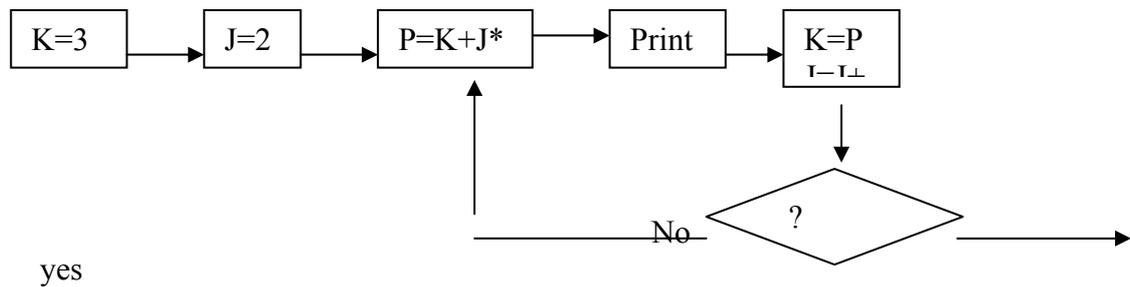
17.

1. $t=1$
2. $T1=T*1000$
3. $T2=T+1$
4. $T3=T2*100$
5. $T4=T2+1$
6. $T5=T4*10$
7. $T6=T4+1$
8. $T7=T1+T3+T5+T6$
9. PRINT T7
10. $T=T+1$
11. IF $T < 8$ THEN 2
12. STOP

Which of the following values is not printed by the above logic

- a. 6789 b. 7890 c. 7900 d. none

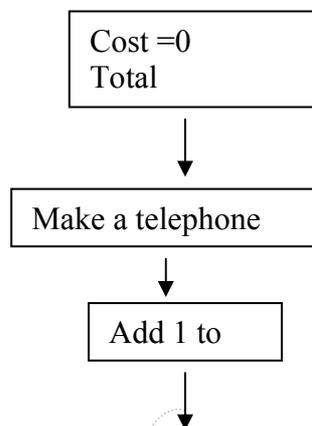
18.



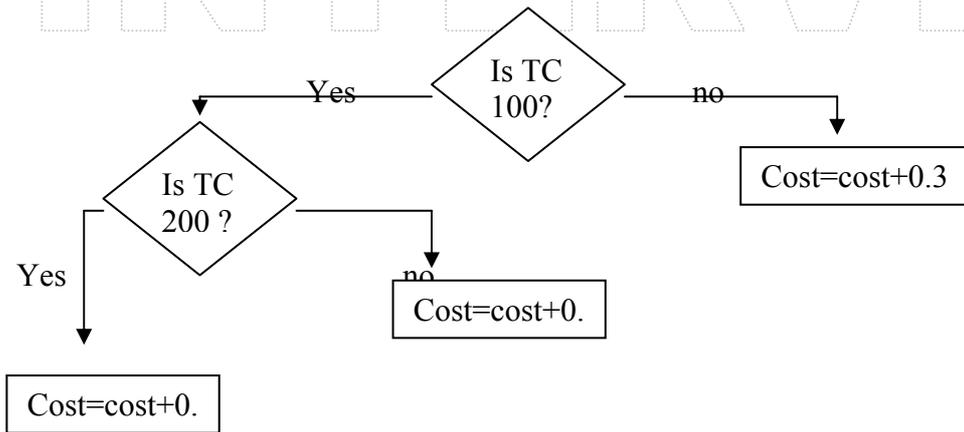
The decision to be checked if 7, 15, 27, 43, 63 were to be printed is

- a. is J^8 b. is $J=8$ c. is $J!0$ d. none

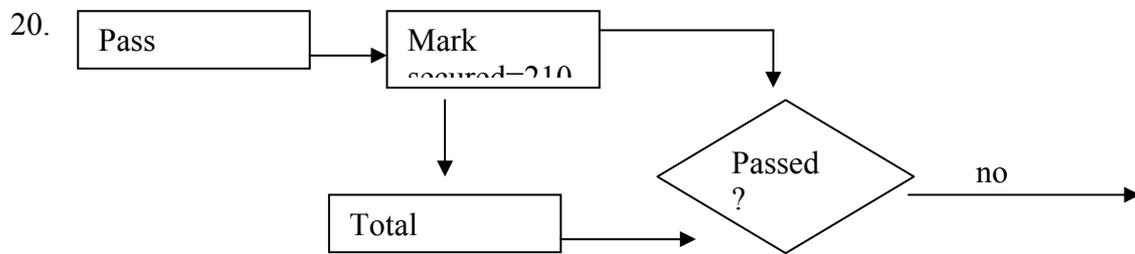
19.



For Placement

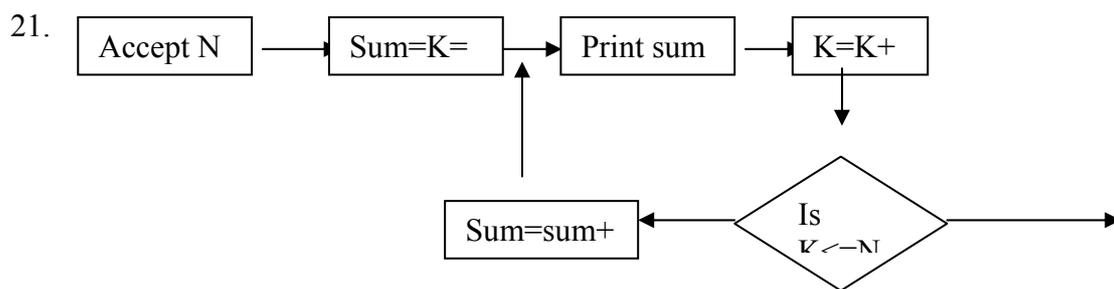


How many calls can one make for Rs 50 using above logic
 a. 200 b. 175 c. **180** d. none

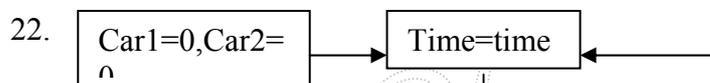


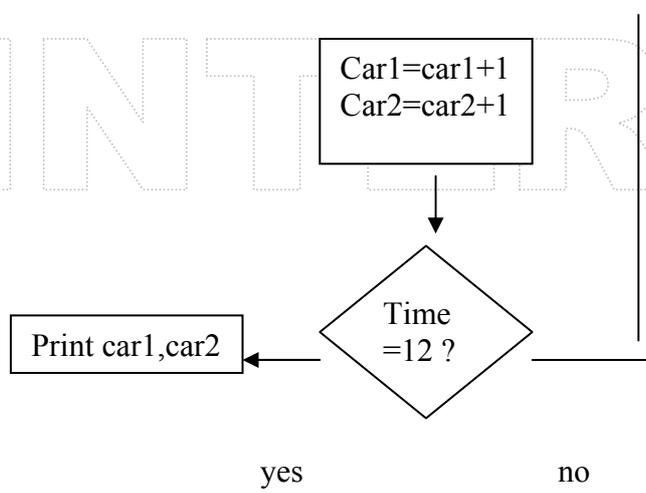
If the path taken is no by securing how many marks can the yes path be taken?

a. 21 b. 29 c. 40 d. none



For what value of N will the above logic produce the result 1, 3, 6, 10, 15
 a. 10 b. 4 c. **5** d. none





which equation represents the above logic

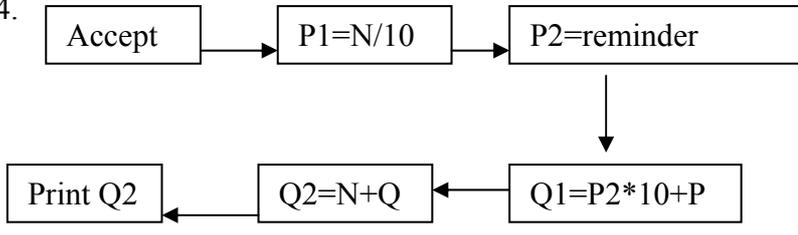
- a. $4x+4y$ b. $8x+4y$ c. $4x+8y$ d. none

23. identify the correct sequence

1. M stands for multiplication
2. S stands for subtraction
3. A stands for addition
4. B stands for brackets
5. D stands for division
6. O stands for of

- a. 4-5-6-1-2-3 b. 4-6-5-1-2-3 c. d. none

24.



For what value of N will the logic print 88

- a. 18 b. 17 c. 42 d. none
 a. 5 b. 10 c. 7 d. none

25. a person distributes the pens among four friends in the ratio 1/3:1/4:1/5:1/6

1. LCM of 3, 4, 5, and 6 is 60
2. Ratio is 20:15:12:10
3. The sum is 57

The above logic gives

- a. maximum number of pens the person should have b. minimum he should have
 c. the highest number of pens given d. none

26.

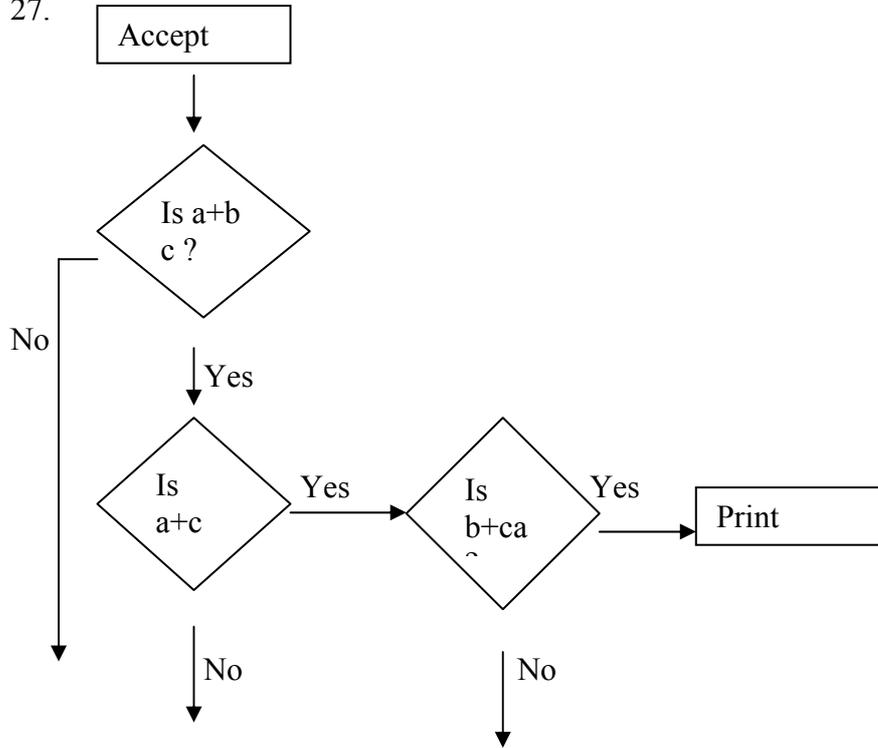
1. let the value of N be 10
2. divide N by 10 to give quotient (q) & remainder®
3. diff=r-q
4. if diff=1 then 6

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5. go to 7
 6. display the value of n
 7. add 1 to n
 8. if n is less than 100 then go to step 2
- the above logic will produce

- a. 11,12, 13, 14 b. **12, 23, 34** c. 21, 32, 43, 54,
d. none

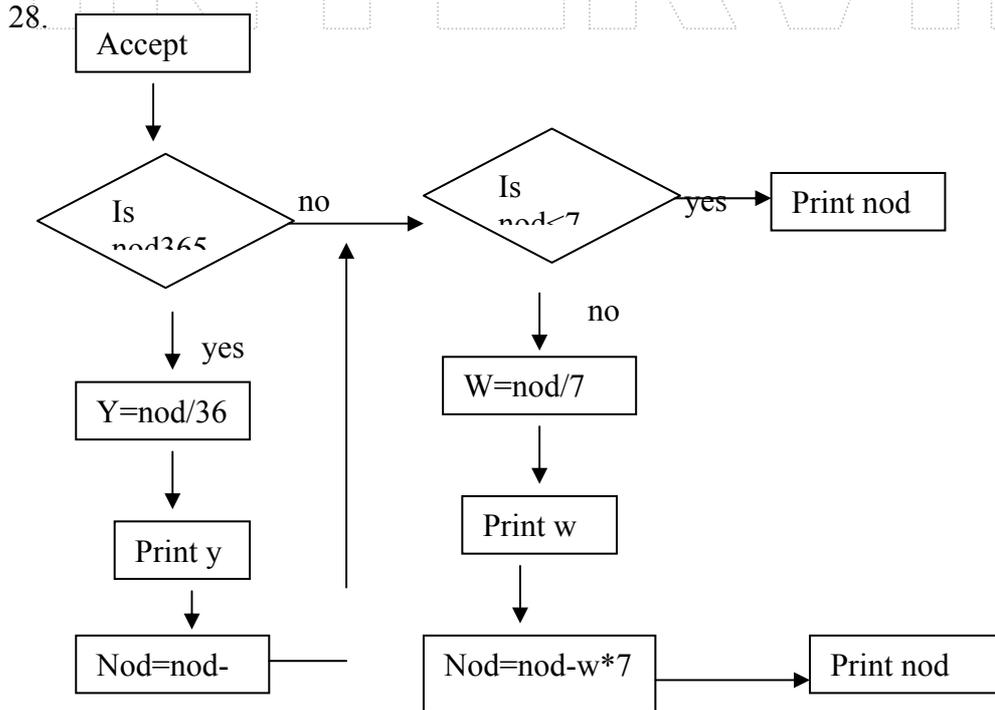
27.



For what value of a,b,c, we will get the output as perfect

- a. 12, 30, 4 b. **36, 45, 25** c. 20,80, 15 d. none

For Placement



For what value of nod will the above logic print 1, 1, 3

- a. 383 b. **375** c. 368 d. none

29. A man has Rs 128 in currency of one , five, ten rupee denominations. If he has the equal no. of denominations ,the total number of notes he will have is

- a. **24** b. 36 c. 16 d. none

30. When a is divided by b, it is required to round off the result to nearest integer, the logic is given below give the correct sequence

1. divide a by b giving c
2. subtract int (a/b) from c and store the result in d.
3. if remainder (a/b) is =0 then stop
4. print int(a/b)
5. if d.49 increase the value of integer(a/b) by 1.

- a. **1, 3, 2, 5, 4** b. 1, 3, 2, 4, 5 c. 1, 2, 3, 5, 4 d. none

31. A cistern is filled in 9 hrs and it takes 10 hrs when there is leak in the bottom. If the cistern is full. in what time will it become empty

- a. **90 hrs** b. 94hrs c. 92 hrs d. none

32. The cost of printing a book is Rs 500. every additional copy that is printed reduces the copy by Rs 5 if more than 40 copies are printed the cost further falls by Rs 12 .the book is to be sold at Rs 285. The logic is given below

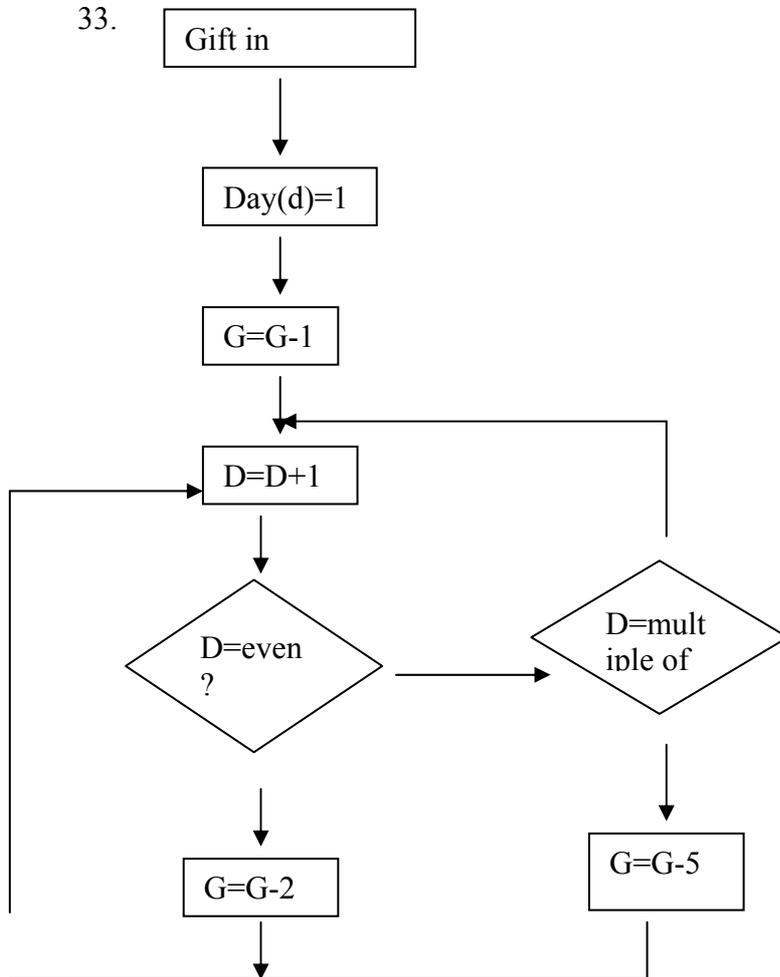
```

cost price=500
number of books =1
do the following while cp>285
  if nb<40
    subtract 5 from cp
  other wise
    subtract 12 from cp
  end of if
  add 1 to nb
end of do
print economical
    
```

if the above logic is implemented after how many copies will the word economical be printed

- a. 50 b. 48 c. **42** d. none

33.



If a distributes gifts using the above rules, starting Sunday as day1 , when will he be left with no gifts

- a. Tuesday, 10th day b. Wednesday, 11th day c. Saturday, 14th
 day d. none

e-INTERVIEW

4. The average age of a class of 45 is 20 years. the age of the teacher is 30 years. The average age of the 46 people is together is.

1. $j = z \times l$
2. $m = j + 30$
3. $z = 20$
4. $r = m / (l + 1)$
5. $l = 45$

the average logic represents the solution for the given problem. The correct sequence is

- a. 5-3-1-4-2 b. **5-3-1-2-4** c. 5-3-2-1-4 d.

none

34. When madan said that he was born on 31-9-83, everybody loughed. The logical sequence of steps involved in reducing madan's statements are given below

1. if the day of birth is greater than y (month of birth) then wrong
2. since 1983 is not a leap year February has 28 days
3. store 31,28,31,.....,31 in an array y (12)
4. month of birth is not less than 1 and not greater than 12, therefore month of birth is vailid

the right sequence of steps is

- a.3-1-4-2 b. **3-2-4-1** c. 3-2-1-4 d.

none

35. The logic to convert a 3 digit number to words is given, ex 123 should be written as one two three

1. accept the number n
2. if $n < 100$ or $n > 999$ go to step 1
3. split n into hundreds (h), tens(t), and units(u)
4. store words zero,one,two,... in arrayw(10)
5. print w (h),w(t),w(u)
6. stop

the above logic is

- a. incomplete b. complete c. complete but inefficient d. none

36. Given a no. which is more than 99 but less than 1000, the logical sequence of steps to say how many hundreds, tens and units are there in the given no. is given below. identify the logical order.

1. get the no. n
2. write the quotient and the words "tens".
3. write the remainder and the words "units".
4. write the quotient and the words "hundreds".
5. divide the no. n by 100 and get the quotient and the remainder.
6. divide the remainder by 10 giving the quotient and remainder.

- a. 1,5,6,2,3,4 b. 1,5,4,3,2,6 c. 1,5,4,6,2,3
d. none

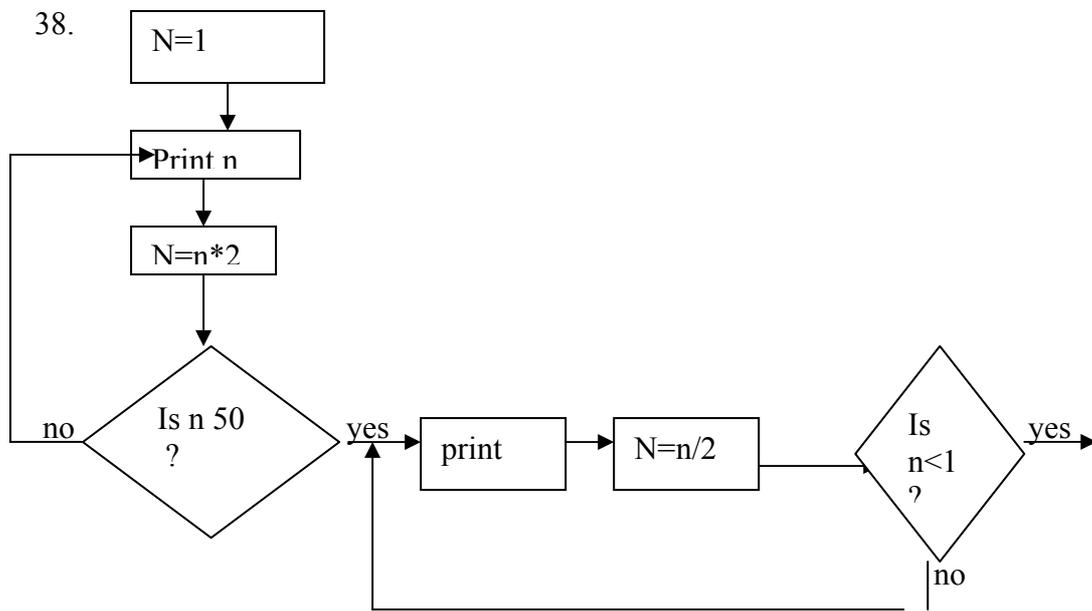
For Placement

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37. step 1. no. of toffees in hand(tih)=2
 2.no. of picks(nop)=1
 3.multiply tih by 2
 4.add 1 to nop.
 5.if nop is less than 4 then step 3
 6.print tih
 7.stop

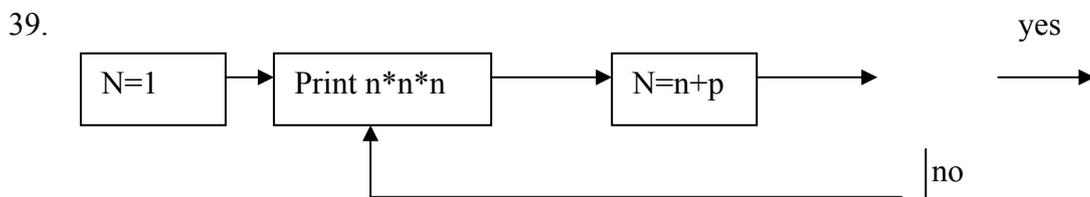
the value of tih at the end of execution of logic is

- a. 16 b.24 c.30 d. none



The output from the above is

- a. 1,2,4,8,16,8,4,2,1, b. 1,2,4,8,16,32,32,16,8,4,2,1, c.
 1,2,4,8,16,32,64,32,16,8,4,2,1-- d.none



If the values printed are 1,27,125,343 and 729, the value of p is

- a.1 b. 2 -- c3 d.none

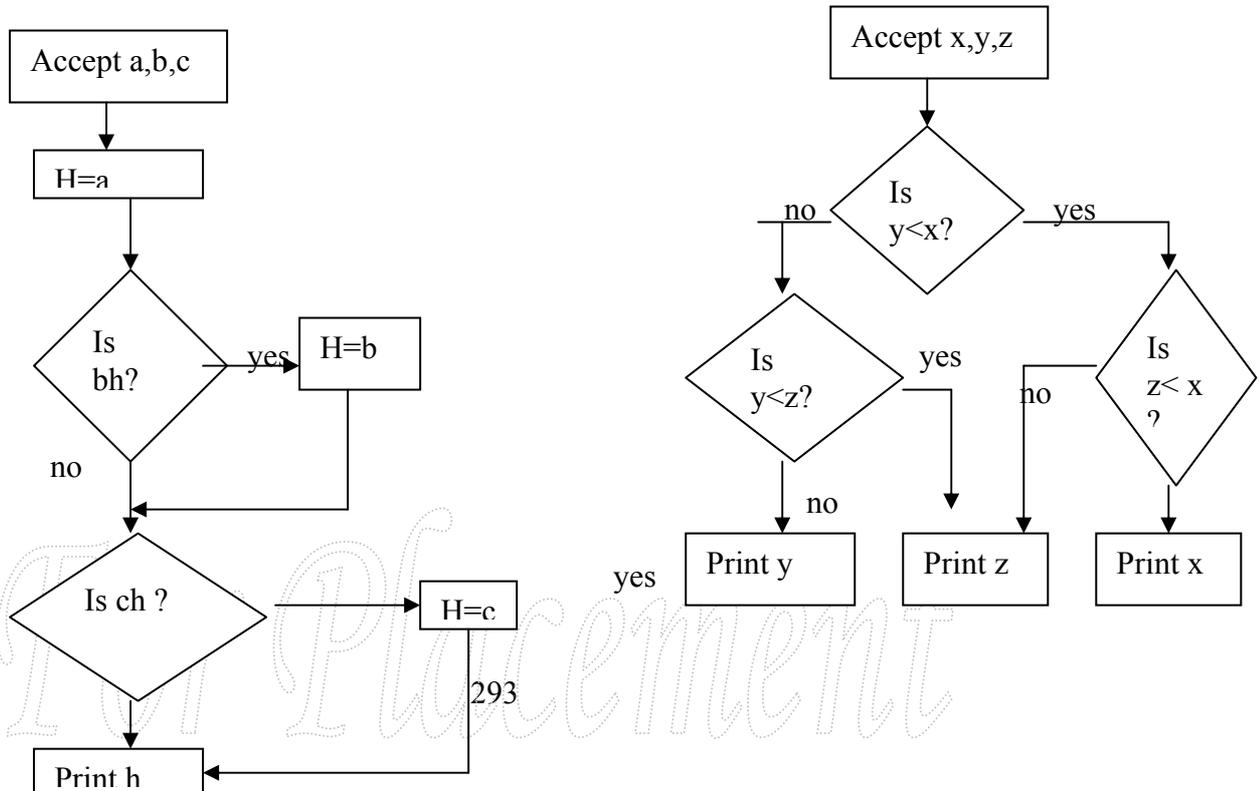
e-INTERVIEW

- 40.
1. accept a,b, c,d.
 2. if $a < 100$ or $a > 999$ then 1.
 3. if $b < 100$ or $b > 999$ then 1
 4. if $c < 10$ or $a > 99$ then 1
 5. if $d < 100$ or $d > 999$ then 1
 6. $a1 = \text{remainder}(a/100)$; $a2 = \text{remainder}(a/100)$
 7. $b1 = \text{remainder}(b/100)$
 8. $c1 = \text{remainder}(c/100)$; $c2 = \text{remainder}(c/10)$
 9. $d1 = \text{remainder}(d/100)$; $d2 = \text{remainder}(d/10)$
 10. $x = a2 + b1 + c2 + d2$
 11. print x
 12. stop

if $a=321, b=26, c=798, d=512$ then the value of x as printed is
 a. 17 b.20 c.16 d.none--

41. rajesh can do a piece of work in 15 days. If he is joined by nitin who is 50% more efficient, in what time will both finish the work .
 a.10days b. 6days -- c.18days d.none

42.



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- If the values passed to the se two flow charts are 123,468,76, the outputs are
a. l=468, ll=76 b. l=468, ll=468, c. l=76, ll=76 d. none
43. the logical sequence of steps to calculate the average of n no. is given below.

1. let the sum (s) of n no.s be zero
2. get the value of n
3. let the value of a be n
4. add n to s
5. add 1 to a
6. if a is not equal to n then goto 4
7. compute average by dividing s by n

the above logic is
a. correct b. incorrect c. inadequate data d. none

44. identify the correct logical order to write your name in reverse order

1. count the no. of alphabets in your name (l).
 2. if l become zero then stop .
 3. reduce the value of l by 1
 4. write the lth character.
 5. transfer control to the step where the value of l is reduced .
- a. 1,4,3,5,2 b. 1,4,3,2,5-- c. **1,3,4,2,5** d. none

45. six girls a,b,c,d,e& f have 10 marbles each. a & b take 4 marbles each from d & e respectively. c gives 3 marbles to f who in turn gives 2 marbles to d & 4 marbles to e. e takes back the marbles she had given to b & gives them to c .
the eq. Are given below

- | | | | | |
|-----------|-----------|----------|----------|-----------|
| 1. a=a+4 | 2. b=b+4 | 3. d=d-4 | 4. e=e-4 | 5. f=f+3 |
| 6. f=f-2 | 7. f=f-4 | 8. c=c-3 | 9. d=d+2 | 10. e=e+4 |
| 11. b=b-4 | 12. c=c+4 | | | |

the above sequence of steps are
a. complete b. **incomplete** c. incorrect d. none

46. subtract 3 from the no. x . multiply the result by 3, add 3 & then divide this result by 3. the final result is

- a. x-2-- b. x+2 c. x+1 d. x

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47. Given a sentence which has only lower case letters & which ends a period(.), you are asked to count the no.s of vowels & consonants. the logical sequence of steps is given below. arrange them in correct order .

1. if character=a,e,i,o or u increase VC by 1 else increase CC by 1.
2. print VC,CC
3. read a character
4. if character read is “ ” . then goto print VC,CC.
5. goto read a character .
6. stop
7. initialize VC,CC to 0

your logical sequence of steps is

- a. 7,3,4,1,5,2,6 b. 7,4,3,1,2,5,6 c. 7,3,4,5,1,2,6 d. none

48. 1. no. of units consumed(nuc)=closing reading-opening reading
2. if nuc <100 units then 5
3. if nuc <200 units then 6
4. if nuc <300 units then 7
5. charge =nuc
6. charge =100+(nuc-100)*2
7. charge=300+(nuc-200)*3
8. print charge

if the opening reading is 785 & the closing reading is 865 , charge is

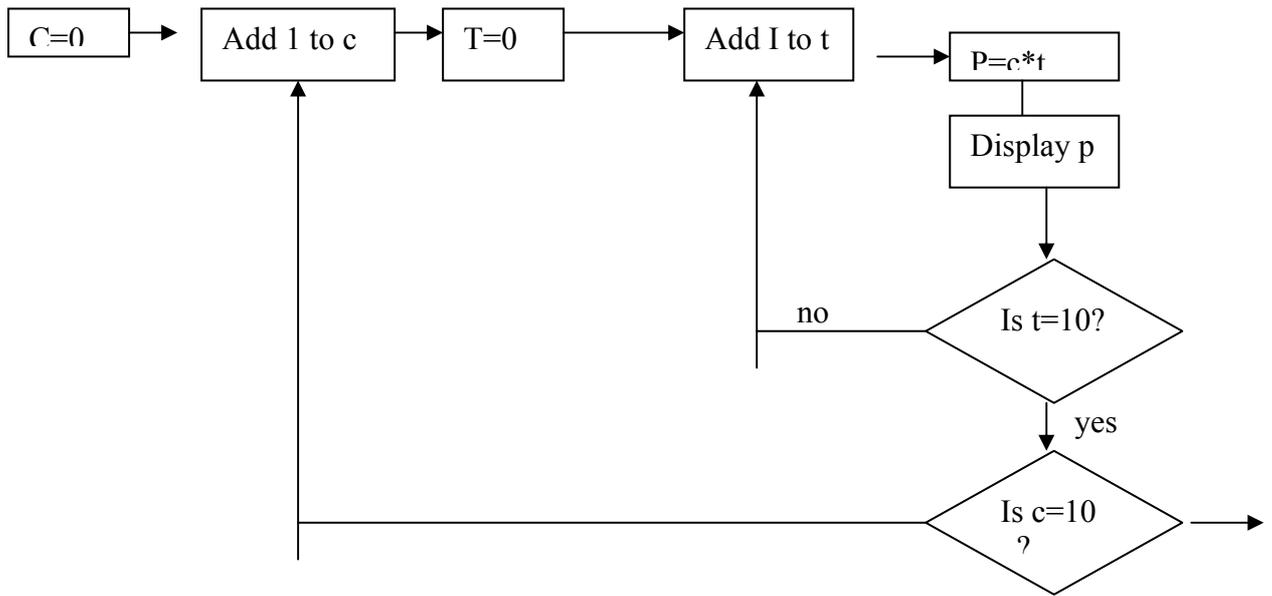
- a. 80 -- b. 60 c. -60 d. none

49. Employee retires at the age of 58. the management has the dob of each employee ids dd/mm/yyyy for . the logic to know the names and the retirement year of each of 500 employees is given below. identify the logical order.

1. Get name & dob of an employee
2. Extract the year of birth from the dob.
3. No. of employees (noe) is 500
4. Write name & retirement year
5. Add 58 to year of birth
6. Reduce noe by 1
7. Do while no. of employees is not equal to 0

- a. 3,7,2,1,5,6,4, b. 3,7,1,2,5,4,6, c. 3,7,1,2,5,6,4 d. none

50. what is the purpose of the following flowchart



- a. compute product of two no.s 100 times
- b. print multiplication table from 1 to 10.--
- c. multiply two no.s 10-times.
- d. none

This is the paper related to db satyam Madras.

1. If i = 5 what is the output of `printf("%d %d %d", ++i ,i ,i++)`;
 a) 5,6,7 b) 6,6,7 c) 7,6,5 (Ans) d) 6,5,5
 2. For the following code how many times the printf func. is executed,
 Code is :

```
int i,j;
for (i = 0; i =8 && y 2; (false)
f) a + b; (false)            g) a = b;(true) h) c+4 ; (true)
```
 26. Answer the following in true or false (2 marks)
 a) `int ctr ;` is a valid variable declaration(true) b) `scanf` is a keyword(true) c) `stdout` is a standard I/P (false) d) register variables can be used as loop index for faster access(false) e) `a = (ab)` is valid statement(true) f) `x = ab ? x:y` is a valid statement(true)
 g) given `x=1,y=4,z=2 , a=9` and `b=3`, evaluate `x = x*y/z +a/b` ; the value of `x = 5` (Ans: true)
 h) `volatile` is a keyword (false)
- Give one line Answers for the following questions:
27. `int count = 11;` (4 marks)
`while (--count+1)`
`printf("count down is %d \n",count);`
 how many times the printf statement is executed? **Ans : 11.**

29) How does an existing data type in c ?

Ans: typedef using define

30) What is the output generated for the following code. [1 m]

```
#define square(a) (a*a)
printf("%d",square(4+5));
```

31. In the following enumeration declaration determine the value of each member.

```
enum compass {north =2 south ,east=1,west
```

Ans: North = 2, south=3, east =1, west =2.

32. for the following declaration

```
union x{
char ch;
int i;
float j
}u-var;
```

what is the value of sizeof(u-var)

Ans:4.

33. How many bytes of memory will the following arrays need ?

(a) char s[80] **Ans:** 80.

(b) char s[80][10] **Ans:** 800.

(c) int d[10] **Ans:** 20.

(d) float d[10][5] **Ans:** 200.

34. For the following statement find the values generated for p and q ?

```
int p=0,q=1;
```

```
p=q++;
```

```
p=++q;
```

```
p=q--;
```

```
p=--q;
```

The value of p equal to 1 and the value of q equal to 1.

35. Write an appropriate declaration for the following situations.

(a) x: function returning pointer to array[] of pointer to function returning char.

(b) Declare a function func that accepts two integer arguments and returning a pointer to a long integer.

Ans: long int *func(int int)

36. int size ,*int_ptr,table[20];

```
char ch,*char_ptr;
```

```
double d,grid;
```

Find out the value for the following statements.

a)size=sizeof(int) = 2.

b)size=sizeof(ch) = 1.

c)size=sizeof(size)= 2.

d)size=sizeof(table) =40.

e)size=sizeof(grid) = 160.

f)size=sizeof(char_ptr)= 4.

37. Give the name of the standard library function for the following

a)string length **Ans:** strlen.

b)string compare **Ans:** strcmp.

c)string copy **Ans:** strcpy.

d)string concatenation **Ans:** strcat.

38. Suppose i and j are both integer type variables, and j has been assigned

a value of 5. Then find the value of i for the following expressions.

a) $i=2*j-2*j/5$. **Ans:** 8.

b) $i=j/2$ **Ans:** 2.

c) $i=2*j/2$ **Ans:** 4.

d) $i=(2*j)/2$ **Ans:** 5.

39. What is the o/p generated by the following program ?

```
main()
{
int n=10;
int func(int);
printf("%d",func(n));
}
int func(int n)
{
if(n0)
return(n+func(n-2));
```

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About Us

HCL Enterprise is a leading Global Technology and IT enterprise that comprises two companies listed in India - HCL Technologies & HCL Infosystems. The 3-decade-old enterprise, founded in 1976, is one of India's original IT garage start-ups. Its range of offerings span Product Engineering, Technology and Application Services, BPO, Infrastructure Services, IT Hardware, Systems Integration, and distribution of ICT products. The HCL team comprises approximately 42,000 professionals of diverse nationalities, who operate from 16 countries including 300 points of presence in India. HCL has global partnerships with several leading Fortune 1000 firms, including leading IT and Technology firms. For more information, please visit www.hcl.in

HCL Technologies is one of India's leading global IT Services companies, providing software-led IT solutions, remote infrastructure management services and BPO. Having made a foray into the global IT landscape in 1999 after its IPO, HCL Technologies focuses on Transformational Outsourcing, working with clients in areas that impact and re-define the core of their business. The company leverages an extensive global offshore infrastructure and its global network of offices in 16 countries to deliver solutions across select verticals including Financial Services, Retail & Consumer, Life Sciences Aerospace, Automotive, Semiconductors, Telecom and MPE (Media Publishing & Entertainment). For the quarter ending 31st December 2006, HCL Technologies, along with its subsidiaries had revenue (TTM) of US \$ 1.155 billion (Rs. 5220 crore) and employed 38,317 professionals.

HCL Technologies - Leadership Team

VINEET NAYAR

President

RANJIT NARASIMHAN

Senior Corporate Vice President, BPO Division

Work at HCL

At HCL, we treat people as people, not 'human resources'. Our five fold path to enlightenment provides you with space to grow, time to think, tools to use. It gives you whatever you need to succeed – be it a virtual assistant or talent transformation sabbaticals; inner peace or fast track growth; expert guidance or democratic empowerment. The result? Over 32000 highly motivated individuals working for 493 satisfied customers around the globe. IT works better this way.

HCL recognizes human resources as the backbone of its long-term success and has consciously focused on increasing the value-add per employee. Its unique approach has made it an employer of choice both in India and abroad. Utmost importance is attached to attract the best talent into the organization, continuously train, improve the

skill set of these professionals, and help them perform in the most challenging assignments, and finally retain our biggest asset-our people.

HCL boasts of its people and recognizes every mind as an engineering powerhouse. It offers a unique experience to people through technology and process innovation. It breeds leaders to work for leaders.

HCL Technologies - Recognitions

HCL's first blackbook on RIM

Nasscom President, Kiran Karnik releases HCL's first blackbook on Remote Infrastructure Management

NASSCOM declares HCL ISD as a "pioneer" and "leading light" in RIM

In the latest issue of its Industry Newsletter 'NASSCOM Newslines' NASSCOM has declared HCL ISD as the "**pioneer in Remote Infrastructure Management**" and the "**Leading light in this segment**" having established its "**pre-eminence within the arena**"

Global Services 2006 Awards

2006 Global Services 100 - a joint initiative of CMP and CyberMedia, has rated HCL #1 in the "Best Performing IT Service Providers" category for 2006.

IAOP

International Association of Outsourcing Professionals (IAOP) has named HCL Technologies (# Rank 11) in the list of world's top outsourcing providers.

SAP

SAP awarded HCL as 'Distinguished Partner 2006' for its profound impact on SAP's business in Singapore.

The quality of our work is evidenced by the awards and accolades that we have received. A sampling follows.

2002: Best Tech Paper in ESRI India User Conference

HCL Technologies was awarded the Best Technical Paper at the 5th ESRI India User Conference held in New Delhi on January 22 and 23, 2002. The paper discussed the GIS solution in road and bridge asset management system offered by HCLT to VicRoads, an Australian State Government authority.

2001: Dataquest Award for Top IT Group in India

The HCL Group received the award for the Top IT Group in India at the Dataquest awards ceremony held on January 25, 2002 in New Delhi. HCL won this prestigious award for the second consecutive year.

1998: Outstanding Vendor Award

HCL Technologies America was awarded the Outstanding Vendor award for 1998 by Unisys Corporation. Unisys quoted that HCL Technologies America's "we-are-here-to-find-a-solution attitude" was a key factor in this recognition.

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1997: Best Software Development Award

HCL Technologies, in a joint effort with Anderson Consulting (now Accenture), was awarded the 1997 Best Software Development Award by the government of Singapore.

1995: IT Man of the Year

Shiv Nadar, Chairman and CEO of HCL Technologies was named “IT Man of The Year” by *Dataquest* in 1995. Cited for his vision and leadership in technology, Mr. Nadar took a chance on the growth of the information technology industry. He established HCL In 1976, which has become the leader in the IT industry in India.

1994: QUEST Award

HCL America was awarded the 1994 Quality and Excellence of Systems and Technology (QUEST) Award by *Datamation*. This award is given to companies for the most effective use of outside service providers and to those partnering vendors who help apply technology.

Apptitude paper for HCL Technologies

1. $a=2, b=3, c=6$

Find the value of $c/(a+b)-(a+b)/c$

Ans. 11/30

2. What does the hexa number E78 in radix 7.

(a) 12455

(b) 14153

(c) 14256

(d) 13541

(e) 131112

Ans. (d)

3. 10 : 4 seconds :: ? : 6 minutes

Ans. 900

4. Q is not equal to zero and $k = (Q \times n - s)/2$. What is n?

(a) $(2 \times k + s)/Q$

(b) $(2 \times s \times k)/Q$

(c) $(2 \times k - s)/Q$

(d) $(2 \times k + s \times Q)/Q$

(e) $(k + s)/Q$

5. From the following statements determining the order of ranking

M has double the amount as D

Y has 3 rupees more than half the amount of D

Ans. Data insufficient

Questions 6 - 10 are to be answered on the following data

A causes B or C, but not both, F occurs only if B occurs, D occurs if B or C occurs, E occurs only if C occurs, J occurs only if E or F occurs, D causes G, H or both, H occurs if E occurs, G occurs if F occurs

6. If A occurs which of the following must occur

I. F and G

II. E and H

III. D

(a) I only

(b) II only

(c) III only

(d) I, II, & III

(e) I & II (or) II & III but not both

Ans. (e)

7. If B occurs which must occur

(a) D

(b) D and G

(c) G and H

(d) F and G

(e) J

Ans. (a)

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8. If J occurs which must have occurred

- (a) E
- (b) either B or C
- (c) both E & F
- (d) B
- (e) both B & C

Ans. (b)

9. Which may occur as a result of cause not mentioned

- I. D
- II. A
- III. F
- (a) I only
- (b) II only
- (c) I & II
- (d) II & III
- (e) I, II & III

Ans. (c)

10. E occurs which one cannot occur

- (a) A
- (b) F
- (c) D
- (d) C
- (e) J

Ans. (b)

11) A 5 litre jug contains 4 litres of a salt water solution that is 15 percent salt. If 1.5 litres of the solution spills out of the jug, and the jug is then filled to capacity with water, approximately what percent of the resulting solution in the jug is salt?

(A)7.5% (B)9.5% (C) 10.5% (D)12% (E)15%

12) Working independently, Tina can do a certain job in 12 hours. Working independently, Ann can do the same job in 9 hours. If Tina works independently at the job for 8 hours and then Ann works independently, how many hours will it take Ann to complete the remainder of the job?

(A)2/3 (B)3/4 (C)1 (D)2 (E)3

Answer : E)3

13) In a murder case there are four suspects P, Q, R, S. Each of them makes a statement. They are p: "I had gone to the theatre with S at the time of the murder". q: "I was playing cards with P at the time of the murder". r: "Q didn't commit the murder". s: "R is not the murderer".

Assuming the only one of the above statements is false and that one of them is the murderer, who is the murderer?

- a) P
- b) Q
- c) R
- d) Can't be concluded
- e) S

Ans: E

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14) Mohan earned twice as much as Deep. Yogesh earned rs.3/- more than half as much as deep. If the amounts earned by Mohan,Deep,Yogesh are M,D,Y respectively, Which of the following is the correct ordering of these amounts?

- a) M
< D < Y
- b) M
< Y < D
- c) D
< M < Y
- d) It can't be determined from the information given
- e) D
< Y < M

15) Statistics indicate that men drivers are involved in more accidents than women drivers. Hence it may be concluded that

- a) sufficiently information is not there to conclude anything
- b) Men are actually better drivers but drive more frequently
- c) Women Certainly drive more cautiously than Men
- d) Men chauvinists are wrong about women's abilities.
- e) Statistics sometimes present a wrong picture of things

16) Given that A,B,C,D,E each represent one of the digits between 1 and 9 and that the following multiplication holds:

$$\begin{array}{r} A B C D E \\ \times 4 \\ \hline E D C B A \\ \hline \end{array}$$

what digit does E represent ?

- a) 4
- b) 6
- c) 8
- d) 7

Ans: c

17) HCL prototyping machine can make 10 copies every 4 seconds. At this rate, How many copies can the machine make in 6 min.?

- a) 900
- b) 600
- c) 360
- d) 240
- e) 150

Ans: a

18) if $a=2, b=4, c=5$ then

$$a+b c$$

$$\frac{a+b}{c} =$$

$$c a+b$$

- a) 1
- b) 11/30
- c) 0
- d) -11/30

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e) -1

Ans: b

19) $10^2(10^8+10^8) =$

 10^4

a) $2(10)^4$

b) $2(10)^6$

c) 10^8

d) $2(10)^8$

e) 10^{10}

Ans: b

20) Worker W produces n units in 5 hours. Workers V and W, workers independently but at the same time, produce n units in 2 hours. how long would it take V alone to produce n units?

a) 1 hr 26 min

b) 1 hr 53 min

c) 2 hr 30 min

d) 3 hr 30 min

e) 3 hr 20 min

Ans: e

Six knights - P, Q, R, S, T and U - assemble for a long journey in Two travelling parties. For security, each travelling party Consists of at least two knights. The two parties travel by separate routes, northern and southern. After one month, the routes of the northern and southern groups converge for a brief time and at that point the knights can, if they wish, rearrange their travelling parties before continuing, again in two parties along separate northern and southern routes. Throughout the entire trip, the composition of traveling parties must be in accord with the following conditions

P and R are deadly enemies and, although they may meet briefly, can never travel together.

p must travel in the same party with s

Q can't travel by the southern route

U can't change routes

21) If one of the two parties of knights consists of P and U and two other knights and travels by the southern route, the other members of this party besides P and U must be

a) Q and S

b) Q and T

c) R and S

d) R and T

e) S and T

Ans: e

22) If each of the two parties of knights consists of exactly three members, which of the following is not a possible travelling party and route?

a) P, S, U by the northern route

b) P, S, T by the northern route

c) P, S, T by the southern route

d) P, S, U by the southern route

e) Q, R, T by the southern route

Ans: b

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23) If one of the two parties of knights consists of U and two other knights and travels by the northern route, the other members of this party besides U must be

- a) P and S
- b) P and T
- c) Q and R
- d) Q and T
- e) R and T

Ans: c

24) If each of the two parties of knights consists of exactly three members of different parties, and R travels by the northern route, then T must travel by the

- a) southern route with P and S
- b) southern route with Q and R
- c) southern route with R and U
- d) northern route with Q and R
- e) northern route with R and U

Ans: a

25) If, when the two parties of knights encounter one another after a month, exactly one knight changes from one travelling party to the other travelling party, that knight must be

- a) P
- b) Q
- c) R
- d) S
- e) T

Ans: e

26) A gambler bets on the team of seven players ABCDEFG whose winning a-4 to 1 against b-4 to 1 against c-4 to 1 against d-4 to 1 against e-5 to 1 against f-6 to 1 against g. how should he bet on g to set 20% profit.

27) If a person buy radio worth Rs 2468 and pay 7% sales .how much price of radio should reduce to pay only Rs 2468.

28) what is vasu salary if salary of vasu is more than rajan salary working in same company

i) vasu salary is 100 more than rajan salary.

ii) rajan found 2000 allowances which is 50 less than vasu.

(iii) basic salary of rajan is 1000.

(i) only i is required

(ii) i & ii is required

(iii) i & iii is required

(iv) i & ii & iii is required

(v) none of these

29) if in 100 miles race 8 person is running winner take 9.8sec and fifth man takes 10.4 sec the time of 8 man is in AP if in 4*100 meters relay of inside is 1,4,5,8 position then win by.

a).3 sec b).1 sec c).7 sec d).5 sec e)none

30) how many sons X have

qwe based on relation

i)

ii)

iii)

Ans(data i,ii,iii is insufficient)

More Questions on aptitude.

Instructions ALL NUMBER USED ARE REAL NUMBERS FOLLOWING EACH QUESTIONS ARE FIVE POSSIBLE ANSWERS LABELED A).B).C).D)&E).TICK THE BEST CHOICE.

1. How many of the integers between 25 and 45 are even ?

(A)21 (B)20 (C)11 (D)10 (E)9

Answer:d)10

2. If taxi fares were Rs 1.00 for the first 1/5 mile and Rs 0.20 for each 1/5 miles thereafter. The taxi fare for a 3-mile ride was

(A)Rs 1.56 (B)Rs 2.40 (C)RS 3.00 (D)Rs 3.80 (E)Rs 4.20

Answer :d)Rs 3.80

3. A computer routine was developed to generate two numbers (x,y) the first being a random number between 0 and 100 inclusive, and the second being less than or equal to the square root of the first. Each of the following pair satisfies the routine EXCEPT

(A) (99.10) (B) (85.9) (C) (50.7) (D) (1.1) (E) (1.0)

Answer : A) (99.10)

4. A warehouse had a square floor with area 10,000 sq.meters.

A rectangular addition was built along one entire side of the warehouse that increased the floor by one-half as much as the original floor. How many meters did the addition extend beyond the original buildings ?

(A)10 (B)20 (C)50 (D)200 (E)500

Answer: c)50

5. A digital wristwatch was set accurately at 8.30 a.m and then lost 2 seconds every 5 minutes. What time was indicated on the watch at 6.30 p.m of the same day if the watch operated continuously that time ?

(A)5:56 (B)5:58 (C)6.00 (D)6.23 (E)6.26

Answer :E) 6.26

6. A 5 litre jug contains 4 litres of a salt water solution that is 15 percent salt. If 1.5 litres of the solution spills out of the jug, and the jug is then filled to capacity with water, approximately what percent of the resulting solution in the jug is salt?

(A)7.5% (B)9.5% (C) 10.5% (D)12% (E)15%

Answer :A)7.5%

7. A plane travelled K miles in the first 96 miles of flight time. If it completed the remaining 300 miles of the trip in 1 minute, what was its average speed in miles per hour for the entire trip ?

(A)

(B)

(C)

(D)

(E)

Answer :(300+k)/97 * 60

8. A merchant sells an item at a 20 percent discount. but still makes a gross profit of 20 percent of the cost. What percent of cost would be gross profit on the item have been if it had been sold without the discount?

(A)20% (B)40% (C)50% (D)60% (E)66.6%

Answer :c) 50%

9. A millionaire bought a job lot of hats $\frac{1}{4}$ of which were brown. The millionaire sold $\frac{2}{3}$ of the hats including $\frac{4}{5}$ of the brown hats. What fraction of the unsold hats were brown.

(A) $\frac{1}{60}$ (B) $\frac{1}{15}$ (C) $\frac{3}{20}$ (D) $\frac{3}{5}$ (E) $\frac{3}{4}$

Answer :c) $\frac{3}{20}$

10. How many integers n greater than and less than 100 are there such that,if the digits of n are reversed, the resulting integer is $n+9$?

(A)5 (B)6 (C)7 (D)8 (E)9

Answer :D)8

11) An investor purchased a shares of stock at a certain price.

If the stock increased in price Rs 0.25 per share and the total increase for the x shares was Rs 12.50, how many shares of stock had been purchased ?

(A)25 (B)50 (C)75 (D)100 (E)125

Answer :B)50

12) At a special sale, 5 tickets can be purchased for the price of 3 tickets.

If 5 tickets are purchased at the sale, the amount saved will be

What percent of the original price of the 5 tickets?

(A)20% (B)33.3% (C)40% (D)60% (E)66.6%

Answer :c)40%

13) Working independently, Tina can do a certain job in 12 hours.

Working independently, Ann can do the same job in 9 hours. If Tina Works independently at the job for 8 hours and then Ann works independently, how many hours will it take Ann to complete the remainder of the jobs?

(A) $\frac{2}{3}$ (B) $\frac{3}{4}$ (C)1 (D)2 (E)3

Answer :E)3

14.) A decorator bought a bolt of d m number of red chips in any one stack ?

(A)7 (B)6 (C)5 (D)4 (E)3

Answer :C) 5



Full paper 2003

Section A

1. Which of the following involves context switch,

- (a) system call
- (b) privileged instruction
- (c) floating point exception
- (d) all the above
- (e) none of the above

Ans: (a)

2. In OST, terminal emulation is done in

- (a) sessions layer
- (b) application layer
- (c) presentation layer
- (d) transport layer

Ans: (b)

3. For a 25MHz processor , what is the time taken by the instruction which needs 3 clock cycles,

- (a) 120 nano secs
- (b) 120 micro secs
- (c) 75 nano secs
- (d) 75 micro secs

4. For 1 MB memory, the number of address lines required,

- (a) 11
- (b) 16
- (c) 22
- (d) 24

Ans. (b)

5. Semaphore is used for

- (a) synchronization
- (b) dead-lock avoidance
- (c) box
- (d) none

Ans. (a)

6. Which holds true for the following statement

class c: public A, public B

- a) 2 member in class A, B should not have same name
- b) 2 member in class A, C should not have same name
- c) both
- d) none

Ans. (a)

7. Question related to java

8. OLE is used in

- a) inter connection in unix
- b) interconnection in WINDOWS
- c) interconnection in WINDOWS NT

9. Convert a given HEX number to OCTAL



INTERVIEW

10. Macros and function are related in what aspect?

- (a) recursion
 - (b) varying no of arguments
 - (c) hypochecking
 - (d) type declaration
11. Preprocessor does not do which one of the following

- (a) macro
- (b) conditional compilation
- (c) in type checking
- (d) including load file

Ans. (c)

12. Piggy backing is a technique for

- a) Flow control
- b) Sequence
- c) Acknowledgement
- d) retransmission

Ans. (c)

13. In signed magnitude notation what is the minimum value that can be represented with 8 bits

- (a) -128
- (b) -255
- (c) -127
- (d) 0

14. There is an employee table with key fields as employer number data in every n'th row are needed for a simple following queries will get required results.

- (a) select A employee number from employee A , where exists from employee B where A employee no. = B
employee having (count(*) mod n)=0
- (b) select employee number from employee A, employee B where A employee number=B employee number
group by employee number having(count(*) mod n=0)
- (c) both (a) & (b)
- (d) none of the above

15. Type duplicates of a row in a table customer with non uniform key field customer number you can see

- a) delete from customer where customer number exists(select distinct customer number from customer having count)
- b) delete customer a where customer number in b rowid
- c) delete customer a where customer number in(select customer number from customer a, customer b)
- d) none of the above

For Placement



INTERVIEW

Section B

- Given the following statement
`enum day = { jan = 1 ,feb=4, april, may}`
What is the value of may?
(a) 4
(b) 5
(c) 6
(d) 11
(e) None of the above
- Find the output for the following C program
`main
{int x,j,k;
j=k=6;x=2;
x=j*k;
printf("%d", x);`
- Find the output for the following C program
`fn f(x)
{ if(x<=0)
return;
else f(x-1)+x;
}`
- Find the output for the following C program
`i=20,k=0;
for(j=1;j<i;j=1+4*(i/j))
{k+=j<10?4:3;
}
printf("%d", k);`
Ans. k=4
- Find the output for the following C program
`int i =10
main()
{int i =20,n;
for(n=0;n<=i;
{int i=10;
i++;
}
printf("%d", i);`
Ans. i=20
- Find the output for the following C program
`int x=5;
y= x&y`
- Find the output for the following C program
`Y=10;
if(Y++&& Y++!=10 && Y++10)
{printf("%d", Y);
else
printf("%d", Y);}`
Ans. 13

FOR PLACEMENT

8. Find the output for the following C program

```
f=(xy)?x:y
```

- a) f points to max of x and y
- b) f points to min of x and y
- c) error

Ans. (a)

9. What is the sizeof(long int)

- (a) 4 bytes
- (b) 2 bytes
- (c) compiler dependent
- (d) 8 bytes

10. Which of the function operator cannot be over loaded

- (a) <=
- (b) ?:
- (c) ==
- (d) *

11. Find the output for the following C program

```
main()  
{intx=2,y=6,z=6;  
x=y==z;  
printf("%d",x)  
}
```

Section C (Programming Skills)

Answer the questions based on the following program

```
STRUCT DOUBLELIST  
{ DOUBLE CLINKED  
INT DET; LIST VOID  
STRUCT PREVIOUS; (BE GIVEN AND A PROCEDURE TO DELETE)  
STRUCT NEW; (AN ELEMENT WILL BE GIVEN)  
}  
DELETE(STRUCT NODE)  
{NODE-PREV-NEXT NODE-NEXT;  
NODE-NEXT-PREV NODE-PREV;  
IF(NODE==HEAD)  
NODE  
}
```

Q. In what case the prev was

- (a) All cases
- (b) It does not work for the last element
- (c) It does not for the first element
- (d) None of these

Answer the questions based on the following program

```
VOID FUNCTION(INT KK)  
{KK+=20;  
}  
VOID FUNCTION (INT K)  
INT MM,N=&M  
KN = K
```

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```
KN+--=10;  
}
```

Q. What is the output of the following program

```
main()  
{ int var=25,varp;  
  varp=&var;  
  varp p = 10;  
  fnc(varp)  
  printf("%d%d,var,varp);  
}
```

- (a) 20,55
- (b) 35,35
- (c) 25,25
- (d) 55,55

Section D

1. $a=2, b=3, c=6$

Find the value of $c/(a+b)-(a+b)/c$

11/30

2. What does the hexanumber E78 in radix 7.

- (a) 12455
- (b) 14153
- (c) 14256
- (d) 13541
- (e) 131112

Ans. (d)

3. $10 : 4 \text{ seconds} :: ? : 6 \text{ minutes}$

Ans. 900

4. Q is not equal to zero and $k = (Q \times n - s)/2$. What is n?

- (a) $(2 \times k + s)/Q$
- (b) $(2 \times s \times k)/Q$
- (c) $(2 \times k - s)/Q$
- (d) $(2 \times k + s \times Q)/Q$
- (e) $(k + s)/Q$

5. From the following statements determining the order of ranking

M has double the amount as D

Y has 3 rupees more than half the amount of D

Ans. Data insufficient

For Placement



INTERVIEW

General Tips To Overcome An Interview

Campus So what if you are not a mountaineer. Or a keen hiker. You still cannot treat your interview like a careless morning trot along a jogger's path. Your jaw-jaw at the interview table is nothing less than a cautious climb up a mountain trail--which begins around your early childhood and meanders through the years at the academia before reaching a new summit in your career. And as you retrace your steps down memory lane make sure that you post flags at important landmarks of your life and career, so that you can pop them before the interview panel scoops them out of you. You don't want to be at the receiving end, do you?

Face the panel, but don't fall of the chair in a headlong rush-and-skid attempt to tell your story. Take one step at a time. If you place your foot on slippery ground, you could be ejecting out on a free fall.

So prepare, fortify your thoughts, re-jig your memory, and script and design your story (without frills and falsity). Without the right preparation and storyboard, you could be a loser at the interview. Here are a few preparation tips that books on interviews sometimes overlook.

Before the interview

1. Chronological Outline of Career and Education Divide your life into "segments" defining your university, first job, second job. For each stage, jot down :

The reason for opting certain course or profession; Your job responsibilities in your previous/current job; Reason of leaving your earlier/current job. You should be clear in your mind where you want to be in the short and long term and ask yourself the reason why you would be appropriate for the job you are being interviewed for and how it will give shape to your future course.

2. Strengths and Weaknesses

You should keep a regular check on your strengths and weaknesses. Write down three (3) technical and three (3) non-technical personal strengths. Most importantly, show examples of your skills. This proves more effective than simply talking about them. So if you're asked about a general skill, provide a specific example to help you fulfil the interviewer's expectations. It isn't enough to say you've got "excellent leadership skills". Instead, try saying:

"I think I have excellent leadership skills which I have acquired through a combination of effective communication, delegation and personal interaction. This has helped my team achieve its goals."

As compared to strengths, the area of weaknesses is difficult to handle. Put across your weakness in such a way that it at least seems to be a positive virtue to the interviewer. Describe a weakness or area for development that you have worked on and have now overcome.

3. Questions you should be prepared for

Tell us about yourself.

What do you know about our company?

Why do you want to join our company?

What are your strengths and weaknesses?

Where do you see yourself in the next five years?

How have you improved the nature of your job in the past years of your working? Why should we hire you?

What contributions to profits have you made in your present or former company? Why are you looking for a change?

Answers to some difficult questions :

Tell me about yourself ?

Start from your education and give a brief coverage of previous experiences.

Emphasise more on your recent experience explaining your job profile.

What do you think of your boss?

Put across a positive image, but don't exaggerate.

Why should we hire you? Or why are you interested in this job?

Sum up your work experiences with your abilities and emphasise your strongest qualities and achievements. Let your interviewer know that you will prove to be an asset to the company.

How much money do you want?

Indicate your present salary and emphasise that the opportunity is the most important consideration.

Do you prefer to work in a group?

Be honest and give examples how you've worked by yourself and also with others. Prove your flexibility.

4. Questions to As

At the end of the interview, most interviewers generally ask if you have any questions. Therefore, you should be prepared beforehand with 2-3 technical and 2-3 non-technical questions and commit them to your memory before the interview.

Do not ask queries related to your salary, vacation, bonuses, or other benefits. This information should be discussed at the time of getting your joining letter. Here we are giving few sample questions that you can ask at the time of your interview.

Sample Questions

Could you tell me the growth plAns and goals for the company?

What skills are important to be successful in this position?

Why did you join this company? (optional)

What's the criteria your company uses for performance appraisal?

e-INTERVIEW

With whom will I be interacting most frequently and what are their responsibilities and the nature of our interaction?

What is the time frame for making a decision at this position?

What made the previous persons in this position successful/unsuccessful?

5. Do your homework

Before going for an interview, find out as much information on the company (go to JobsAhead Company Q and A) as possible. The best sources are the public library, the Internet (you can check out the company's site), and can even call the company and get the required information. The information gives you a one-up in the interview besides proving your content company or position.

Clearing the interview isn't necessarily a solitary attempt. Seek assistance from individuals who are in the profession and whose counsel you value most. Be confident in your approach and attitude; let the panel feel it through your demeanour, body language and dressing.

Getting prepared for your interview is the best way to dig deep and know yourself. You will be surprised that it would breed a new familiarity become more familiar with your own qualifications that will be make you present yourself better. All the best and get ready to give a treat.

For Placement

Section II - C Programming

1. Which of the following about the following two declaration is true

- i) `int *F()`
- ii) `int (*F)()`

Choice :

- a) Both are identical
- b) The first is a correct declaration and the second is wrong
- c) The first declaration is a function returning a pointer to an integer and the second is a pointer to function returning int
- d) Both are different ways of declaring pointer to a function

Answer : c) The first de...

2. What are the values printed by the following program?

```
#define dprint(expr) printf(#expr "=%d\n",expr)
```

```
main()
{
int x=7;
int y=3;
dprintf(x/y);
}
```

Choice:

- a) #2 = 2
- b) `expr=2`
- c) `x/y=2`
- d) none

Answer: c)x/y=2

3. Which of the following is true of the following program

```
main()
{
char *c;
int *p;
c =(char *)malloc(100);
ip=(int *)c;
free(ip);
}
```

Ans: The code functions properly releasing all the memory allocated

4.output of the following.

```
main()
{
int i;
char *p;
i=0X89;
p=(char *)i;
p++;
printf("%x\n",p);
}
```

Ans:0X8A

5.

which of the following is not a **ANSI** C language keyword?

Ans:Function.

6. When an array is passed as parameter to a function, which of the following statement is correct choice:

- a) The function can change values in the original array
- b) In C parameters are passed by value. The function cannot change the original value in the array
- c) It results in compilation error when the function tries to access the elements in the array
- d) Results in a run time error when the function tries to access the elements in the array

Answer: a) The fu...

7. The type of the controlling expression of a switch statement cannot be of the type

- a) int b) char c) short d) float e) none

Answer : d) float

8. What is the value of the expression $(3^6) + (a^a)$?

- a) 3 b) 5 c) 6 d) $a+18$ e) None

Answer : 5

9. What is the value assigned to the variable X if b is 7 ?

$X = b8 \ ? \ b \ll 3 : b4 \ ? \ b1 : b;$

- a) 7 b) 28 c) 3 d) 14 e) None

Ans: 3;

10. Which is the output produced by the following program

```
main()
```

```
{
```

```
int n=2;
```

```
printf("%d %d\n", ++n, n*n);
```

```
}
```

- a) 3,6 b) 3,4 c) 2,4 d) cannot determine

Answer : b) 3,4

11. What is the output of the following program?

```
int x= 0x65;
```

```
main()
```

```
{
```

```
char x;
```

```
printf("%d\n",x)
```

```
}
```

- a) compilation error b) 'A' c) 65 d) unidentified

12. What is the output of the following program

```
main()
```

```
{
```

```
int a=10;
```

```
int b=6;
```

```
if(a=3)
```

```
b++;
```

```
printf("%d %d\n",a,b++);
```

```
}
```

- a) 10,6 b) 10,7 c) 3,6 d) 3,7 e) none

Answer : d) 3,7

13. What can be said of the following program?

```
main()
```

```
{
```

```
enum Months {JAN =1,FEB,MAR,APR};
```

e-INTERVIEW

```
Months X = JAN;
if(X==1)
{
printf("Jan is the first month");
}
}
```

- a) Does not print anything
- b) Prints : Jan is the first month
- c) Generates compilation error
- d) Results in runtime error

Answer: b) Prints : Jan..

14. What is the output of the following program?

```
main()
{
char *src = "Hello World";
char dst[100];
strcpy(src,dst);
printf("%s",dst);
}
strcpy(char *dst,char *src)
{
while(*src) *dst++ = *src++;
}
```

- a) "Hello World" b)"Hello" c)"World" d) NULL e) unidentified

Answer: d) NULL

15. What is the output of the following program?

```
main()
{
int l=6;
switch(l)
{ default : l+=2;
case 4: l=4;
case 5: l++;
break;
}
printf("%d",l);
}
```

- a)8 b)6 c)5 d)4 e)none

Answer : c)5

16. What is the output of the following program?

```
main()
{
int x=20;
int y=10;
swap(x,y);
printf("%d %d",y,x+2);
}
swap(int x,int y)
{
int temp;
```

```
temp =x;  
x=y;  
y=temp;  
}
```

a)10,20 b) 20,12 c) 22,10 d)10,22 e)none

Answer:d)10,22

17. What is the output of the following problem ?

```
#define INC(X) X++  
main()  
{  
int X=4;  
printf("%d",INC(X++));  
}
```

a)4 b)5 c)6 d)compilation error e) runtime error

Answer : d) compilation error

18. what can be said of the following

```
struct Node {  
char *word;  
int count;  
struct Node left;  
struct Node right;  
}
```

a) Incorrect definition

b) structures cannot refer to other structure

c) Structures can refer to themselves. Hence the statement is OK

d) Structures can refer to maximum of one other structure

Answer :c)

19. What is the size of the following union.

Assume that the size of int =2, size of float =4 and size of char =1.

```
Union Tag{  
int a;  
float b;  
char c;  
};
```

a)2 b)4 c)1 d) 7

20) What is the output of the following program? (. has been used to indicate

a

space)

```
main()  
{
```

```
char s[]="Hello,.world";  
printf("%15.10s",s);  
}
```

a)Hello,.World...

b)....Hello,.Wor

c)Hello,.Wor....



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d) None of the above

(1) The combined length of the longer two pieces of rope is 12 metres.

(2) The combined length of the shorter two pieces of rope is 11 metres.

(A) (B) (C) (D) (E)

10) A certain company paid bonuses of Rs. 125 to each of its executive employees and Rs 75 to each of its nonexecutive employees. If 100 of the employees were nonexecutive, how many were executive?

1) The company has a total of 120 employees

2) The total amount that the company paid in bonuses to its employees was Rs.10,000

(A) (B) (C) (D) (E)

11. What fraction of his salary did Mr. Johnson put into savings last week ?

1) Last week Mr. Johnson put Rs 17 into savings.

2) Last week Mr. Johnson put 5% of his salary into savings.

(A) (B) (C) (D) (E)

12. Each M-type memory unit will increase the base memory capacity of a certain computer by 3 megabytes. What is the base memory capacity, in megabytes, of the computer ?

1) 2 M-type memory units will increase the computer's base memory capacity by 300%

2) The memory capacity of the computer after 2-M type memory units are added to the base memory capacity, is 1.6 times the memory capacity of the computer after

1 M-type unit is added to the base memory capacity.

(A) (B) (C) (D) (E)

13. What fractional part of the total surface area of cube C is red?

1) Each of 3 faces of C is exactly $\frac{1}{2}$ red

2) Each of 3 faces of C is entirely white

(A) (B) (C) (D) (E)

For Placement

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SECTION C

Instructions ALL NUMBER USED ARE REAL NUMBERS FOLLOWING EACH QUESTIONS ARE FIVE POSSIBLE ANSWERS LABELED A).B).C).D)&E).TICK THE BEST CHOICE.

14. How many of the integers between 25 and 45 are even ?
(A)21 (B)20 (C)11 (D)10 (E)9

Answer:d)10

15. If taxi fares were Rs 1.00 for the first $\frac{1}{5}$ mile and Rs 0.20 for each $\frac{1}{5}$ miles thereafter. The taxi fare for a 3-mile ride was
(A)Rs 1.56 (B)Rs 2.40 (C)RS 3.00 (D)Rs 3.80 (E)Rs 4.20

Answer :d)Rs 3.80

16. A computer routine was developed to generate two numbers (x,y) the first being a random number between 0 and 100 inclusive, and the second being less than or equal to the square root of the first. Each of the following pair satisfies the routine EXCEPT

(A) (99.10) (B) (85.9) (C) (50.7) (D) (1.1) (E) (1.0)

Answer : A) (99.10)

17. A warehouse had a square floor with area 10,000 sq.meters. A rectangular addition was built along one entire side of the warehouse that increased the floor by one-half as much as the original floor. How many meters did the addition extend beyond the original buildings ?

(A)10 (B)20 (C)50 (D)200 (E)500

Answer: c)50

18. A digital wristwatch was set accurately at 8.30 a.m and then lost 2 seconds every 5 minutes. What time was indicated on the watch at 6.30 p.m of the same day if the watch operated continuously that time ?

(A)5:56 (B)5:58 (C)6.00 (D)6.23 (E)6.26

Answer :E) 6.26

19) A 5 litre jug contains 4 litres of a salt water solution that is 15 percent salt. If 1.5 litres of the solution spills out of the jug, and the jug is then filled to capacity with water, approximately what percent of the resulting solution in the jug is salt?

(A)7.5% (B)9.5% (C) 10.5% (D)12% (E)15%

Answer :A)7.5%

20) A plane travelled K miles in the first 96 miles of flight time. If it completed the remaining 300 miles of the trip in 1 minute, what was its average speed in miles per hour for the entire trip ?

Answer :(300+k)/97 * 60

21) A merchant sells an item at a 20 percent discount. but still makes a gross profit of 20 percent of the cost. What percent of cost would be gross profit on the item have been if it had been sold without the discount?

(A)20% (B)40% (C)50% (D)60% (E)66.6%

Answer :c) 50%

22) A millionaire bought a job lot of hats $\frac{1}{4}$ of which were brown. The millionaire sold $\frac{2}{3}$ of the hats including $\frac{4}{5}$ of the brown hats. What fraction of the unsold hats were brown.

(A) $\frac{1}{60}$ (B) $\frac{1}{15}$ (C) $\frac{3}{20}$ (D) $\frac{3}{5}$ (E) $\frac{3}{4}$

Answer :c) $\frac{3}{20}$

FOR PLACEMENT

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23) How many integers n greater than and less than 100 are there such that, if the digits of n are reversed, the resulting integer is $n+9$?
(A)5 (B)6 (C)7 (D)8 (E)9

Answer :D)8

24) An investor purchased a shares of stock at a certain price. If th stock increased in price Rs 0.25 per share and the total increase for the x shares was Rs 12.50, how many shares of stock had been purchased ?
(A)25 (B)50 (C)75 (D)100 (E)125

Answer :B)50

25) At a special sale, 5 tickets can be purchased for the price of 3 tickets. If 5 tickets are purchased at the sale, the amount saved will be what percent of the original price of the 5 tickets?
(A)20% (B)33.3% (C)40% (D)60% (E)66.6%

Answer :c)40%

26) Working independently, Tina can do a certain job in 12 hours. Working independently, Ann can do the same job in 9 hours. If Tina works independently at the job for 8 hours and then Ann works independently, how many hours will it take Ann to complete the remainder of the jobs?
(A)2/3 (B)3/4 (C)1 (D)2 (E)3

Answer :E)3

27) A decorator bought a bolt of dm number of red chips in any one stack ?
(A)7 (B)6 (C)5 (D)4 (E)3

Answer :C) 5

For Placement

SECTION III - ANALYSIS PROGRAM SEGMENTS

1) Here is the structure declaration of a doubly linked list

```
struct dlink {  
int nodeid;  
struct dlink *next;  
struct dlink *prev;  
} dlink_t;
```

A pointer of the head of the linked list is maintained as a global variable, whose definition is

```
dlink_t *head;
```

The function `remove_element(dlink_t *rp)`, needs to remove the node pointed to the `rp` and adjust the head.

The first node's `prev` and the last node's `next` are `NULL`.

```
remove_element(dlink_t *rp)
```

```
{  
rp->prev->next = rp->next;  
rp->next->prev = rp->prev;  
if( head == rp)  
head = rp->next;
```

Which of the following statement is true about the function `remove_element`

- A) It work when head is the same as `rp`
- B) It does not work when `rp` is the last element on the list
- c) It sets the head of the list correctly
- D) It works in all cases

Answer : B) It does...

2) Consider the following function written in c:

```
#define NULL 0  
char *  
index(sp,c)  
register char *sp,c;  
{  
do {  
if(*sp == c)  
return (sp);  
} while (*sp++);  
return NULL;  
}
```

The first argument `sp`, is a pointer to a C string. The second argument, `c`, is a character. This function searches for the character `c`, in the string. If it is found a pointer to that location is returned else `NULL` is returned. This function works

- a) Always
- b) Always, but fails when the first byte contains the character `c`
- c) works when `c` is a non `NULL` character only
- d) Works only when the character `c` is found in the string

Ans: a

03) What is printed when this program is executed

```
main()
{
printf ("%d\n",f(7));
}
f(X)
{
if (x
<= 4)
return x;
return f(--x);
}
```

- a) 4
- b) 5
- c) 6
- d) 7

Ans: a

04) On a machine where pointers are 4 bytes long, what happens when the following code is executed.

```
main()
{
int x=0,*p=0;
x++; p++;
printf ("%d and %d\n",x,p);
}
```

- a) 1 and 1 is printed
- b) 1 and 4 is printed
- c) 4 and 4 is printed
- d) causes an exception

05) Which of the following is the correct code for strcpy, that is used to copy the contents from src to dest?

- a) strcpy (char *dst,char *src)
{
while (*src)
*dst++ = *src++;
}
- b) strcpy (char *dst,char *src)
{
while(*dst++ = *src++)
}
- c) strcpy (char *dst,char *src)
{
while(*src)
{ *dst = *src;
dst++; src++;
}
- d) strcpy(char *dst, char *src)



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```
{  
while(*++dst = *++src);  
}
```

Ans:b

6) Consider the following program

```
main()  
{  
int i=20,*j=&i;  
f1(j);  
*j+=10;  
f2(j);  
printf("%d and %d",i,*j);  
}  
f1(k)  
int *k;  
{  
*k +=15;  
}  
f2(x)  
int *x;  
{  
int m=*x,*n=&m;  
*n += 10;  
}
```

The values printed by the program will be

- a) 20 and 55
- b) 20 and 45
- c) 45 and 45
- d) 45 and 55
- e) 35 and 35

7) what is printed when the following program is compiled and executed?

```
int  
func (int x)  
{  
if (x  
<=0)  
return(1);  
return func(x -1) +x;  
}  
main()  
{  
printf("%d\n",func(5));  
}
```

- a) 12
- b) 16
- c) 15
- d) 11

FOR PLACEMENT

08) Consider the following of c code in two files which will be linked together and executed .a.c

```
int i;  
main()  
{  
i = 30;  
f1();  
printf("%d\n",i)  
}  
b.c
```

```
static int f1()  
{  
i+=10;  
}
```

which of the following is true ?

- a) a.c will fail in compilation phase because f1() is not declared
- b) b.c will fail in compilation because the variable i is not declared
- c) will print 30
- d) will print 40
- e) a & b

Ans: e) a & b

9) Consider the following prg

```
void funca (int *k)  
{  
*k += 20  
}  
void funcb (int *x)  
{  
int m=*x,*n = &m;  
*n+=10;  
}  
main()  
{  
int var = 25,*varp=&var;  
funca(varp);  
*varp += 10;  
funcb(varp);  
printf ("%d and %d\n",var,*varp);  
}
```

The values printed when the above prg is compiled and executed are:

- a) 20 and 55
- b) 20 and 45
- c) 45 and 55
- d) 55 and 55
- e) 35 and 35

Ans: d

10) consider the following program:

```
# include
class x {
public:
int a;
x();
};
x::x() { a=10; cout
<class b:public x {
public:
b();
};
b::b() { a=20; cout
<main ()
{ b temp;
}
```

what will be the output of this prg?

- a) 10
- b) 20
- c) 2010
- d) 1020

Ans: b

Section IV - General Aptitude Section

1) In a murder case there are four suspects P,Q,R,S. Each of them makes a statement. They are

p: "I had gone to the theatre with S at the time of the murder".

q: "I was playing cards with P at the time of the murder".

r: "Q didn't commit the murder".

s: "R is not the murderer".

Assuming the only one of the above statements is false and that one of them is the murderer, who is the murderer?

- a) P
- b) Q
- c) R
- d) Can't be concluded
- e) S

and: E

2) Mohan earned twice as much as Deep. Yogesh earned rs.3/- more than half as much as Deep. If the amounts earned by Mohan,Deep,Yogesh are M,D,Y respectively, Which of the following is the correct ordering of these amounts?

- a) M
< D < Y
- b) M
< Y < D
- c) D

< M < Y

d) It can't be determined from the information given

e) D

< Y < M

03) Statistics indicate that men drivers are involved in more accidents than women drivers. Hence it may be concluded that

a) sufficiently information is not there to conclude anything

b) Men are actually better drivers but drive more frequently

c) Women Certainly drive more cautiously than Men

d) Men chauvinists are wrong about women's abilities.

e) Statistics sometimes present a wrong picture of things

04) What does the hex number E78 correspond to in radix 7 ?

a) 12455

b) 14153

c) 14256

d) 13541

e) 13112

Ans:d

5) Given that A,B,C,D,E each represent one of the digits between 1 and 9 and that the following multiplication holds:

A B C D E

X 4

E D C B A

what digit does E represent ?

a) 4

b) 6

c) 8

d) 7

Ans: c

6) HCL prototyping machine can make 10 copies every 4 seconds. At this rate, How many copies can the machine make in 6 min.?

a) 900

b) 600

c) 360

d) 240

e) 150

Ans: a

7) if $a=2, b=4, c=5$ then

$a+b c$

----- =

c a+b

a) 1

b) $11/30$

c) 0

d) $-11/30$

e) -1

Ans: b

8) $10^2(10^8+10^8) =$

- 10⁴
- a) 2(10)⁴
- b) 2(10)⁶
- c) 10⁸
- d) 2(10)⁸
- e) 10¹⁰

Ans: b

9) Worker W produces n units in 5 hours. Workers V and W, workers independently but at the same time, produce n units in 2 hours. how long would it take V alone to produce n units?

- a) 1 hr 26 min
- b) 1 hr 53 min
- c) 2 hr 30 min
- d) 3 hr 30 min
- e) 3 hr 20 min

Ans: d

10) if $q < 0$ and $k = qr - s$, then what is r in terms of k,q,s?

- a) 2k+s

- q
- b) 2sk

- q
- c) 2(k-s)

- q
- d) 2k+sq

- q
- e) 2(k+s)

Ans: e

11-15 is the reasoning Questions:

Occurs and Causes available in placement papers.com
Six knights - P,Q,R,S,T and U - assemble for a long journey in two travelling parties. For security, each travelling party consists of at least two knights. The two parties travel by separate routes, northern and southern. After one month, the routes of the northern and southern groups converge for a brief time and at that point the knights can, if they wish, rearrange their travelling parties before continuing, again in two parties along separate northern and southern routes. Throughout the entire trip, the composition of traveling parties must be in accord with the following conditions

P and R are deadly enemies and, although they may meet briefly, can never

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travel together. p must travel in the same party with s Q can't travel by the southern route U can't change routes

16) If one of the two parties of knights consists of P and U and two other knights and travels by the southern route, the other members of this party besides P and U must be

- a) Q and S
- b) Q and T
- c) R and S
- d) R and T
- e) S and T

Ans: e

17) If each of the two parties of knights consists of exactly three members, which of the following is not a possible travelling party and route?

- a) P,S,U by the northern route
- b) P,S,T by the northern route
- c) P,S,T by the southern route
- d) P,S,U by the southern route
- e) Q,R,T by the southern route

Ans: b

18) If one of the two parties of knights consists of U and two other knights and travels by the northern route, the other members of this party besides U must be

- a) P and S
- b) P and T
- c) Q and R
- d) Q and T
- e) R and T

Ans: c

19) If each of the two parties of knights consists of exactly three members of different parties, and R travels by the northern route, then T must travel by the

- a) southern route with P and S
- b) southern route with Q and R
- c) southern route with R and U
- d) northern route with Q and R
- e) northern route with R and U

Ans: a

20) If, when the two parties of knights encounter one another after a month, exactly one knight changes from one travelling party to the other travelling party, that knight must be

- a) P
- b) Q
- c) R
- d) S
- e) T

Ans: e

FOR PLACEMENT

@-INTERVIEW

There were three tests- technical 40 quest.(from database, unix and C) , apti - 25 and 1 programming part (It was to implement circular queue) One q on as an example (i donnt remember exactly the same q but it was looking like this)

1
a c b c
X g c

a o i f
g s d j

g h h k

4 q based on the above.-value of c, b, g etc.GRE 13th edition-analytical ability page-389 Qs(1-4){ms Braun,mr white,mr black,ms green,mrparker,mr allen) page-394 Qs(37-39) {baseball team-miller craig hook mizel}

six to seven question ask from R.S.AGGRWAL FOR THIS YOU MUST READ THE STATEMENT AND CONCLUSION,DERIVING CONCLUSION FROM PASSAGE,STATEMENT AND ASSUMPTIOM,STATEMENT AND ARGUMENT FROM R,S.AGGRWAL VERBAL REASONING.

1)A gambler bets on the team of seven players ABCDEFG whose winning a-4 to 1 against b-4 to 1 against c-4 to 1 against d-4 to 1 against e-5 to 1 against f-6 to 1 against g. how should he bet on g to set 20% profit.

2)If a person buy radio worth Rs 2468 and pay 7% sales.how much price of radio should reduce to pay only Rs2468.

3)what is vasu salary if salary of vasu is more than rajan salary working in same company

i)vasu salary is 100 more than rajan salary.

ii)rajan found 2000 allowns which is 50 less than vasu.

iii)basic salry of rajan is 1000.

iv)only i is required ii)i & ii is required iii)i& iii

is required iv)i&ii&iii is required

v)none of these

4)if in 100 miles race 8 person is running winner take 9.8sec and fifth man takes 10.4 sec the time of 8 man is in AP if in 4*100 meters realy of onside is 1,4,5,8 position then win by.

a).3 sec b).1 sec c).7 sec d).5 sec e)none

5)how many sons X have qwe based on relation

Ans(data i,ii,iii is insufficient)

1). Piggy backing is a technique for

a) Flow control b) sequence c) Acknowledgement d)retransmiton

Ans: c piggy backing

2). The layer in the OST model handles terminal emulation

a) session b) application c) presentation d)transport

3. Speed of the processor is given 35mhz,find the time taken for 3 clock cycle.**Ans**=20 bits.

FOR PLACEMENT

4. To address a memory of 1 mb, How many bits are required **Ans**= 20 bits.

5. Semaphores used for . **Ans**=Synchronisation.

6. Termination emulation is done in which layer in osi model.

Ans =Application layer.

7. Which of the following involve context switch.

a. System call, b. Privileged instruction, c.kernal mode,d.None of these ,

Ans=d.

8.Given an employee table,Find the employee with the second largest salary.

Ans: b application

9.OLE **Ans**.winNT

10)IP address

11)SI*(*(f[]))()

12)In **ANSI** C which is such thing is not in Java.

13)typedef struct node

```
{  
int
```

```
NODEPTR * NODE
```

```
}
```

14)Q. In signed magnitude notation what is the minimum value that can be represented with 8 bits

a) -128 b) -255 c) -127 d) 0

15)Q. there is an employer table with key feilds as employer no. data in every n'th row are needed for a simple following queries will get required results.

a) select A employe no. from employe A , where exists from employe B where A employe no. = B employe having (count(*) mod n)=0

b) select employe no. from employe A, employe B where A employe no. = B employ no. grouply employe no. having (count(*)

mod n=0)

c) both a& b

d)none of the above

16. Piggybacking is done for, **Ans**=Acknowledgement.

17.WHICH IS NOT BASIC data type

Ans.Char*

18.which of the following statement is valid for string copy

```
char *str,*ptr;
```

a)while(*str)

```
{
```

```
*str=*ptr;
```

```
++str=++ptr;
```

```
}
```

b)

```
while(*str)
```

```
{*++str=*++ptr};
```

c) d)

19) Two variable cantnt have the same name in

a)function b) block c) file d)---

C Section

20. #define inc(x) x++

```
main()
```

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```
{  
int t=1;  
printf("%d",inc(t++));  
}
```

21. one or two que for the complicated declaration.

22. Const char *a="Abcd";

char const *a="lmno";

base do this, Two que were there.

23. char *p ;

char q[20];

24. int i, *p=&i;

p=malloc(10);

free(p);

printf("%d",p);

Ans : garbage

25. int i=20, *j=&i

f(i)

printf("%d",i);

26. #define val 1+2

printf("%d%d",val/val,val^3)

Ans : 3 9

27. #define "this" "#"

#define (x,y) x##y

printf("this", "this is")

Ans: compilation error (tested)

28. (2^2)+(a^a)

29. int a ,b=7

a=b<4?b<<1:b4?71:a

Ans.3

30. one que on c++ class member function

Ans.d

31. work of memory management unit.

32. who relate virtual memory to physical memory

Ans.os

33. memory is allocated to variable

a) when declared b) when define c)...

34. question on double linked list

35. define success 1

define failure -1

if(condition)

printf(success);

else

printf(failure);

Ans success

36. main()

{

int var=25, varp;

varp=&var;

varp=10;

fun(varp);

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```
printf("%d%d",var,varp);
```

Ans a)45,45 b)55,55 c) 20,55;

37. u r given two statements

```
a=(10.15);
```

```
b=10,15;
```

if they are executed what is the output

```
printf("%d%d",a,b);
```

a)10,15 b)15,10 c)10,10 d)15,15

Ans a

38. define null 0

Ans=0;

39. #define inc(x) x++

```
main()
```

```
{
```

```
int t=1;
```

```
printf("%d",inc(t++));
```

```
}
```

Ans.error

40.argument in funtion can be passed

1)by value 2)by refference 3)....

41.

```
main
```

```
{int x=1,y=2,z=3;
```

```
x=y==z;
```

```
printf(x);
```

```
}
```

42.in switch float is not used

43.one question on register variable.

For Placement

e-INTERVIEW

1.HCL has two divisions a) technology division b) application division.if a student opts for a) then he has to give 2 papers 1) aptitude(25 questions) 2) technical(30 approx).if he opts for application field then he has to give only apti paper which is same as that of techni paper.

2.after the written results are declared the technology students are given another test of 15 minutes in which they have to write a C program(reversing string, reversing singly/doubly link list(FAVOURITE))and then interview is taken.

3.if you have good command in comp s then opt for technology paper.

4.in apti(for tech people) if you do 8-10 out of 25 then it is on safe side.

APTITUDE PAPER

question not in order.i dont remember all question.if you have time practice BARRON's analytical ability.most q's from here.

1) BARRON section ANALYTICAL ABILITY page 396, practice exercises question 1-4(edition of my book 1998 check out).quest like this miss braun, mr white,miss green, mr parker etc.

2) BARRON section ANALYTICAL ABILITY page 401, practice exercises question 37-39(edition of my book 1998 check out). base ball team,pitchers-craig,hook.

3) the closing of the restaurant by Mr.X on SEPT 1 was considered an unfinancial one, as the weather remained unusually clear and sunny for another one month.An author who criticizes the act of Mr. X would be proved wrong if the following was true??

ANS choice a) the weather did not usually remained fine after SEPT

4) SUSAN works in a company who has restricted its employees from smoking cigerrates in the canteen.As susan is the employee of the company she does not smoke cigerrate in the canteen.

Which of the following unused phrases strengthens the rules of the company??

ANS the employees normally do not do the work for which the company has forbidden them to do.

FOR PLACEMENT

5) A q's on family relation was given like How many sons X has I P is the daughter of XII some condn.III some condn.

ANS al I ,II, III together are not sufficient.

6)a q's in which a name KAPIL is given he visits manoj's home.som condns given.

ANS b)

7)A,B,C,D are the 4 plays which are organised starting from tuesday.find the day on which C was played.in this 2 condn. will be given as

I.....

II.....

ANS both I and II

8)a quest on crypto graphy like

A B C D

E F G H

. is A=, find the other values. practice these types of quest.

9)a question on race was given.hell lot of condns.finally they make a team for 4*100 metres medaly.

ANS E none of the above

10) a q's on profit and loss.(just brush up your concepts.)

THESE Q'S WORTH OF 14 or 15 marks.sufficient.some of my friends are also compiling the papers i will send them also MUG!!!! UP THEQUESTIONS VERY WELL MOST OF the

ANS

ARE CORRECT.BUT YOU CAN VERIFY THEM IF TIME ALLOWS
TECHNICAL (MANY Q's OF LAST YEAR WERE REPEATED IN
TECHNICAL PART)

1). Piggy backing is a technique for

a) Flow control b) sequence c) Acknowledgement d)
retransmission

Ans: c piggy backing

2). The layer in the OST model handles terminal emulation

a) session b) application c) presentation d) transport

Ans: b application

3) **Ans:** a odd numbers of errors

4)Q. In signed magnitude notation what is the minimum value that can be represented with 8 bits

a) -128 b) -255 c) -127 d) 0 **ANS** a)

5) c 20(no of address lines in 1MB of memory)

6) a 120(25 hz processor,what is the time taken by the instr which needs 3 clock cycles)

7) b synchronise the access(semaphores used for)

8) a system call(context switching is used in)

9) b the operating system(mapping of virtual to physical address)

10) a 177333(conversion of HEX "0xFEDB" in octal)

11) d used as a network layer protocol in network and windows(OLE) system

12) b has to be unique in the sub network(internet address)

13)Q. there is an employer table with key feilds as employer no. data in every n'th row are needed for a simple following queries will get required results.

- a) select A employe no. from employe A , where exists from employe B where A employe no. = B employe having (count(*) mod n)=0
 b) select employe no. from employe A, employe B where A employe no. = B employe no. grouply employe no. having (count(*) mod n=0)
 c) both a& b
 d)none of the above

14)Q. type duplicates of a row in a table customer with non uniform key feild customer no. you can see

- a) delete from costomer where customer no. exists (select distinct customer no. from customer having count)
 b) delete customer a where customer no. in (select customer b where custermer no. equal to b custemor no.)and a rowid b rowid
 c) delete customer a where customer no. in (select customer no. from customer a, customer b)
 d) none of the above

15) which feature in ANSI C but not in JAVA.??ANS variable arguments.

16)preprocessor does not do one of the following??**ANS** type checking.

17) long int size

- a) 4 bytes b) 2 bytes c) compiler dependent d) 8 bytes

Ans: compiler dependent

18) x=2,y=6,z=6

x=y==z;

printf("%d",x) ? **ANS** 1

19) class c : public A,publicB

a)2 members in class a,b can have member functions with same name.

b)2 members in class a,c can have member functions with same name.

c)both

d)none

20) main()

```
{
char *p;
p=malloc(10);
free(p);
printf("%d",p);
}
```

ANS compilation error

21)a=(10,15)

b=10,15

what are the values of a & b in **ANSI C**

ANS 15,10

22)main(){

int x=10,y=15,z=16;

x=y==z;

printf("%d",x);

ANS 0

23)f(n) f(x)

```
{
if(x
```

<=0)

return;

else f(x-1)+x;

}

find the value of fn(5)? **ANS** 15.

24)struct {

int det;

struct prevoius;

struct new;

}

delete(struct node)

{

node-prev-next=node-next;

node-next-prev=node-prev;

if(node==head)node

}

one element will be given.

ANS:it does not work when rp is the last element in the link list.

25)A code will be given which searches a particular char in the string.

ANS: it always works.

26)main()

{

int var =25,varp;

varp=&var;

varp p=10;

fnc(varp);

printf("%d%d",var,varp);

}

ANS::55,55 (check this out)

7)#define VALUE 1+2

main()

{

printf("%d and %d\n",VALUE/VALUE,VALUE*3);

}

ANS:: 5,7

28)What is the value assigned to the variable a if b is 7

a=b8?b<<2:b4?b1:b;

ANS::3

29)the value of the following expr (2^3)+(a^a) is

a) 1 b)2 c) 3 d) insufficient data

30) which of the following is not basic data type

ANS char*

31)the declaration of the variable does not result in one of

the

following

ANS allocatrion of the storage space for the variable.

32)in C parameters are passed by

ANS:: value only.

@-INTERVIEW

33) 2 variables cannot have the same name if they are
ANS: in the same block.

34) a static funct. say s(), in as file f.c can be invoked from
ANS all functs. in f.c after the definitions of s.

35) macros and functions do not differ in the following aspects
ANS: variable no of arguments.

36) one q's in which he will give some different forms of STRCPY
function you will have to find out which form is correct.

1) a free electron is placed in a electromagnetic field, it will move in the
direction of

a) Electric Field b) Magnetic Field c) Wave Propagation

2) Elements with same atomic & mass no are called

a) isotope b) isotone c) isobar d) isomer

3) $\int \frac{(2x-3)}{(x^2+1)} dx = ?$ (where \int is for integration)

4) if $x = \arcsin(t)$ and $y = \log(1-t)$ then $\frac{d^2y}{dx^2}$ at $t = 1/2 = ?$ (**Ans:** $-8/3$)

5) calculate the sum of 100 terms common to the series
{17, 21, 25, ...} and {16, 21, 26, ...}

6) find the sum upto n terms $1 + 2^x + 3^x + \dots$. Where $x = 1 + 1/n$ (**Ans** n?)

7) A speaks true in 70% of cases and B in 80% then what is prob. that A & B
Always contradicts to each other. (**Ans:** 0.38)

8) fact: I) all dogs are trees II) trees provide wood conclusion: I) dogs provide
wood

9) qns of GMAT type like

a) $x^2 = 0$

b) $x^2 = 0$

is $x = 0$?

A) concluded from a) only B) so on. data sufficiency type

a) conclude from statement 1 only b) concluded from

statement 2 only c) concluded from individually
statement 1 and statement 2

d) concluded from statement 1 and statement 2

39) rod and a man are stationary with respect to lab. the man measures the
rod in following ways

1) rod moves parallel to man the size reduces

2) man move parallel to rod size reduces

10) A man six feet tall is standing near a pole. On top of the pole is a light.
What is the length of the shadow cast by the man?

a) man is 6 meter from the pole

b) the pole is 12 meters above ground

11) Train T leaves town A for town B and travels at a constant rate speed. At
the same time, train S leaves town B for town A and also travels at constant
rate speed. Town C is between A and B. Which train is travelling fast? Train
A, C, B lie in a straight line.

a) Train S arrives at town C before Train T. b) C is closer to A than to B

12) what is the value such that the roots of $x^3 + 3x + a = 0$ lies in $[0, 1]$

A) 1 B) -1 C) 3 D) none.

13) a compound has C 40% H by 6.07% & O by 53.93%.

find the formula (**Ans:** CH_2O)



INTERVIEW

14) if words are formed by SURITI and arranged in a dictionary what will be the position of SURITI? (**Ans**:236)

15) in an exam. There are 2 parts each containing 5 qns. one has to answer 6 qns with condition at most 4 from one group. in how many ways one can answer? (**Ans**:200)

16) in how many ways 7 distinct objects can be distributed among 3 children? (**Ans**: 7P30)

17) 3 GRE (Barrons 12th edition page 397(7-11)) analytical type qns. (question is little different)

18) Ram walked 2Km north then moves to his right to go 4Km. Then again moves to his right to go 4Km. Again moves right to go 4km. where he meets Radha.

a) what is the direction at the first turn? (E.W.N.S)

b) what is the distance between starting pt. and the terminating pt?

20) qns Like :L if the code of the word EMFATION is '35248671' then

a) what is the word of the code '2771' ?

b) what is the code of the word FEAT ?

21) what is the value of $\int \frac{dx}{x \ln x}$?

('∫' is for integration sign)

22) Given initial state (P1,V1) and final state (P2,V2). state is changed by 2 processes. What term is common to two processes? (**Ans**: dq-dw)

23) at NTP how much butane can be burnt by a litre of oxygen) (**Ans**: 72.8 gms)

24) Saturated plate current in a triode depends on

A)...B) (**Ans**: Temp)

25) in which type of sort. for both average case and worst case efficiency is equal to $n \log n$?

(**Ans**: Merge sort)

26) Two circles of unequal radius intersect each other in A)1 pt B)2 pts. C)3 pts. D)none (ans:2 pts)

29) 4 radicals were given which one shows positive inductive effect? (**Ans**: NH₂-)

30) find the curve satisfying $xy - ydx + \log x dx = 0$ and passing through (1,-1)

31) Emitter and collector are placed horizontally with collector above. There is a saturation current, if there is a vertical electric field applied downwards what happens to the emitted electrons.

a) stopping potential decreases b) K.E increases (**Ans**: b)

32) 70 cars can park in n rows with equal no in each row, two cars are eliminated from each row but 4 rows are added. find the no n (**Ans**: 10)

33) value of $f(x) = \frac{1 - \cos(1 - \cos(x))}{x^4}$ for which it is continuous at $x=0$

(**Ans**: 1/8)

34) infix notation is given determine the postfix (like as infix a-b/(c*d)e) postfix abcde\$*/-

35) if A & B play a game and each is required to tell a no from 1-25 what's the probability that they will contradict. probable **Answer**(24/25)

37) which is not the ideal solution (probable **Ans**: ethanol + water)

38) chlorine + toluene in presence of anhydrous FeCl₂ ----- ortho+para chloro toluene

40) honeybee if touched will sting, man touches the bee conclusion: man is stung by honeybee

41) we have 10 different digits to form a five digit no with at least one digit repeated.

42) 20ml of H₂S + 20ml of Cl₂ will produce?(probable **Ans** 120 ml of.....)

43) period of $y = \sin((2t+3)/6\pi)$ is ?

44) x rays emitted from a tube has wavelength between

a) lie greater than a particular wave length

b) between maximum and minimum range (**Ans** : b)

part 2

questions for department

1) youngs modulus for tension Y_t is x times Youngs modulus for compression Y_c . **ANS** : 0.5

2) In a two stage air compression total work is $2n/(n-1) * P_1 V_1 [(P_3/P_1)^{(n-1)/2n} - 1]$ what is the work done in high press cylinder if minimum work condition is applied.

3) cementite is Fe₃C.

4) The friction radius in case of an bearing for uniform press is $[2/3 * ((r_2^2 + r_1^2)/(r_2^2 - r_1^2))]$

5) About pitch to be cut on job on leath having perticular pitch on lead. $\text{pitch} = 9/5$ with 4tpi find change gears

6) A beam is simply supported at end pts A & B. what is the moment at point A due to uniformly distributed load W.

7) (inverted delta ie inverted triangle) is a symb of.....

8) if work done in LP and HP cylenders, in compressor are W_1 and W_2 with politropic index n_1 and n_2 what is ratio of W_1/W_2 ..

9) shaping machine work done (**Ans**; LNC/1000)

10) 10 ton cannon fires a shell of 50kg with a muzzle velocity 900m/s it takes 0.04 seconds to come out from barrel when fired at 30 degree..find the velocity of cannon.

11) fins occur due to(casting defect)

12) by which of the following methods a job if heated will not warp?

a) vertical b) clamped on both sides c) clamped at regular intervals three or four question on hoop stresses in spheres and cylenders.....

1. employe 1.-you told me ,"two years ago, you have worked 3 times as much as me. employe 2.-yes, isaid that now i have worked twice as much as you. how many years both of them have worked.-----4&8

2. there are 20 flag . a person starts from first flag and goes up to 12th flag in 24 sec . what is the total time he took to reach 20th flag.-----24*19/11

3. mr X says that the 2 dial of the watch concide every 65 min. is the or gaining the time, and by how much in a hour.-----60/143min.

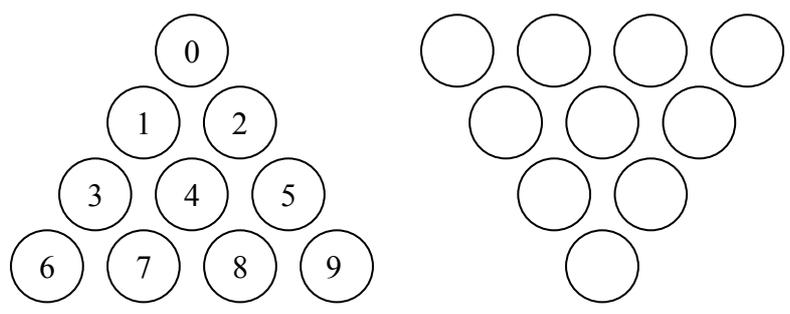
4. a person leaves the city at const speed. on his way he saw a mile-stone, a 2 digit no. after going for 1 hour , he sees another , milestone having the same number in reverse order still further 1 hour he again sees the mile stone showing the two number but a zero in between. what is the velocity of x
Ans 45kmper hour

5. MOON, SOON, NOON

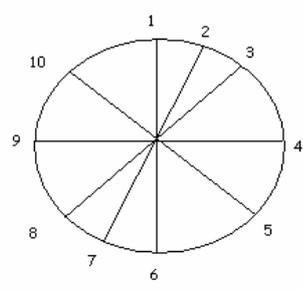
JUNE FIND JUNE? **ANS** - 9326

e-INTERVIEW PUZZLE

1. Make the left arrangement look like the right arrangement by moving the only three circles from the left arrangement. Give the ball numbers to be moved. (3 marks)



2. Place Eight queens in an 8 * 8 chess Board such that no queens are check mated. (4 marks)
3. Today was Harish's birthday, he turned 24. Harish is twice as old as Ramu was when Harish was as old as Ramu now. How old is Ramu? (3 marks)
4. Here is a circle with marked numbers. Can you alter the numbers so that the sum of any two adjacent numbers is equal to the pair of numbers at the other ends of the diameter. (2 marks)

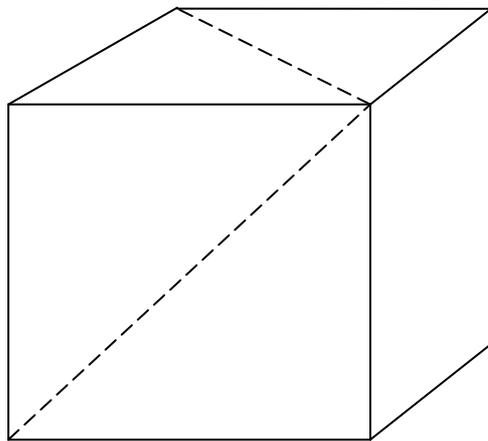


5. Replace each letter by a digit. Each letter must be represented by the same digit and no beginning letter of a word can be 0. (3 marks)
 O N E
 O N E
 O N E
 O N E

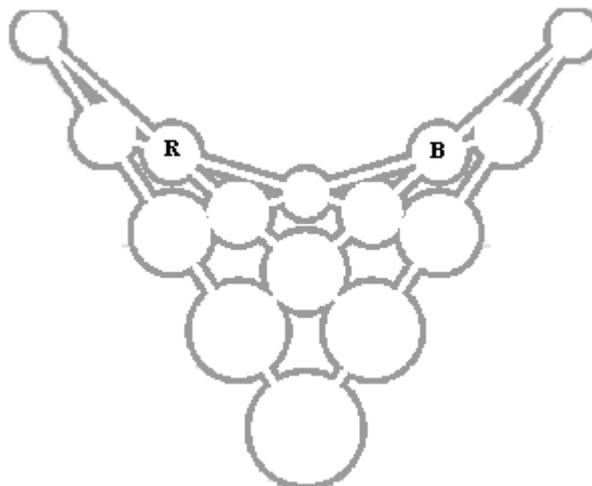
 T E N
6. Find the angle between the minute hand and the hour hand of a clock when the time is 7:20 PM. (2 marks)

For Placement

7. A clock is set right at 8 a.m. The clock gains 10 minutes in 24 hours. What will be the true time when the clock indicates 1 p.m. on the following day? (3 marks)
8. Sometime after 10:00 PM a murder took place. A witness claimed that the clock must have stopped at the time of the shooting. It was later found that the position of both the hands were the same but their positions had interchanged. Tell the time of the shooting (both actual and claimed). (3 marks)
9. There is a room with 2 doors. Behind each door a person is sitting. One person always speaks truth and other speaks always Lie. You don't know who speaks truth. You are passing that way and the road splits; you don't know which road is correct one. You must find the correct road by asking only one question to any one of them. What would be your question? (4 marks)
10. Find the angle between the dotted lines drawn in a cube? (3 marks)



11. R denotes RED and B denote BLUE. Colour all the points of this "web" into red and blue in such a way that any single line shown in the illustration doesn't contain a Sequence of three points of the same colour. The two points are already coloured. (3 marks)



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12. a) A goat is tied to one corner of a square plot of side 12m by a rope 7m long. Find the area it can graze? (1.5 marks)

b) Thirty men take 20 days to complete a job working 9 hours a day. How many hour a day should 40 men work to complete the job? (1.5 marks)

13. Complete the Table given below:

Three football teams are there. Given below is the group table . Fill in the x's. (4 marks)

	Played	Won	Lost	Draw	Goals For	Goals Against
A	2	2	x	x	x	1
B	2	x	x	1	2	4
C	2	x	x	x	3	7

14. Everyday in his business a merchant had to weigh amounts from 1 kg to 121 kgs, to the nearest kg. What are the minimum numbers of weight required and how heavy should they be? (4 marks)

15. (**Answer to this problem gives special complement**) (6 marks)

Below are ten statements concerning X, a whole number between 1 and 10(Inclusive). Not all of the statements are true, but not all of them are false either. What number is X and Justify your answer ?

1. X equals the sum of the statement numbers of the false statements in this list.
2. X is less than the number of false statements in this list, and statement 10 is true.
3. There are exactly three true statements in this list, or statement 1 is false, but not both.
4. The previous three statements are all false, or statement 9 is true, or both.
5. Either X is odd, or statement 7 is true, but not both.
6. Exactly two of the odd-numbered statements are false.
7. X is the number of a true statement.
8. The even-numbered statements are either all true or all false.
9. X equals three times the statement number of the first true statement in this list, or statement 4 is false, or both.
10. X is even, or statement 6 is true, or both.

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About Written Test

The written test consists of *60 questions* which are divided into *4 sections*. The *total duration* of the test is *90 minutes*. *There is negative marking* . *

The section wise distribution of the questions is as follows:

Section#1

This section consisting of *15 questions* is based on ***general computer awareness***. In this section: *A correct answer carries 1 mark 1/4 marks will be deducted for a wrong answer.*

Section#2

This section also consists of *15 questions*. *Questions based on ***C language*** are asked.

In this section:

*A correct answer carries 1 mark
1/4 marks will be deducted for a wrong answer.
*

Section#3

A total of *10 questions* based on ***pointers and structures in C*** are asked in this section. You can also be asked one or two questions on JAVA. In this section:

*A correct answer carries 2 marks
1 mark will be deducted for a wrong answer.
*

Section#4

This is the ***aptitude section*** consisting of ***20 questions***. **Simple maths** questions are asked which are very easy. The logical questions asked are similar to the ones given in the Barron's GRE book.

In this section:

*A correct answer.
*
carries 2 marks
1/4 mark will be deducted for a wrong answer.
*
.*

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Profile

Tata Consultancy Services started in 1968. The early days marked TCS responsible in managing the punch card operations of Tisco. The company, which was into management consultancy from day one, soon felt the need to provide solutions to its clients as well. TCS was the first Indian company to make forays into the US market with clients ranging from **IBM, American Express, Sega** etc. TCS is presently the top software services firm in Asia.

During the **Y2K** buildup, TCS had setup a Y2K factory in Chennai as a short-term strategy. Now, with **E-business** being the buzzword, the factory is developing solutions for the dotcom industries. Today, about 90 percent of TCS' revenue comes from **consulting**, while the rest from **products**. TCS has great training facilities. In addition to training around 5 percent of the revenue is spent upon its R&D centers like the Tata Research Design and Development Centre at Pune, along with a host of other centers at Mumbai and Hyderabad.

It benchmarked its quality standing, invested heavily in software engineering practices and built intellectual property-in terms of **patents, code** and **branded products**. At the same time, it expanded its relationships with technology partners and organizations, increased **linkages with academic institutions** and incubated technologies and ideas of people within TCS and outside. TCS has already **patented 12 E-Commerce** solution product packages and has filed **six more applications** for patent licenses.

Over \$25 million were spent on enhancing hardware and software infrastructure. The company now has **72 offices** worldwide. As many as seven centers were assessed at **SEI CMM Level 5** last year (3.4 mistakes in a million opportunities). These include Chennai, Mumbai, Bangalore, Calcutta, Hyderabad and Lucknow. Several business and R&D relationship with global firms like **IBM, General Electric, Unigraphics Solutions** have been made.

QUALITY STANDARDS/LEVELS

Joint Venture at SEI-CMM Level 5

- EACoE Pvt Ltd March 9, 2002

P-CMM Level 4

- Gurgaon II August 17, 2001
- Noida August 17, 2001
- Tidel Park August 24, 2001
- Kolkata August 24, 2001

ISO 9001:2000

- All Centres

ISO 14001 (Environment friendly policies/standards)

- Shollinganallur (Chennai)

RECENT Honours

- Lotus Beacon 2003 Award from IBM for SmartGov Solution (Client: Govt of Andhra Pradesh)(January 27, 2003)
- Ranked #1 in **DataQuest IDC CSA** survey for CIOs' choice of IT services companies in India (Dataquest, Jan 15,2002)
- Rajiv Gandhi National Quality Award for TCS Shollinganallur Center (Dec 30,2002)

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- Best IT Consultant (Asia Pacific) for the year 2002-03, Global Finance (January 3, 2002)
- Silicon India Company of the Year 2002 (November 16, 2002)
- DataQuest Top Indian Software Company for 2002
- GE Power Systems Supplier Award for Six Sigma Program Excellence for the year 2001
- Electronic and Computer Software Export Promotion Council All India Award for 1998-99 and Sectoral Award for 1999-2000 in the Non-SSI category (Computer Software & Services) (announced September 28, 2001)
- Indo-German Chamber of Commerce Award for Outstanding Promotion of Indo-German Economic Relations (received on September 28 th , 2001)
- 3 rd IETE Corporate Award for Excellence in Software (received on September 29, 2001)
- Asia' s Top Software Exporter and India' s Top IT vendor in the Dataquest Top 20 for 2001 (Nov 15, 2001)
- Top software exporter for 2000-2001 (TCS is India' s top software exporter since 1968)

For Placement

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Interview

The test is followed by a **Technical** and a **HR** interview. The technical interview is highly specialized and covers almost all subjects you have done in your curriculum. However one is required to name his/her favorite subject on which most of the interview is focused. For Computer Engineers C, Operating Systems, DBMS, Microprocessors are mostly focused upon. Electronics Engineers can be grilled on DCLD, Microprocessors and Communications.

The HR interview which follows the technical interview is very general. The HR interview is also important. Mostly questions are asked to test your temperament. You may be asked your opinion on a variety of current affair topics. We were asked about Homosexuality, Lesbianism (the movie FIRE), Kashmir, Genome Project etc. In some cases questions regarding the company are asked. Sometimes you would be interviewed by a **panel** and both the technical and HR interviews will be covered in one session.

Written

Tata Consultancy Services conducts a **multiple choice test**. The test consists of four sections.

Test

The first section is the **Verbal Section** with **15** questions to be attempted in **5** minutes. The questions deal with words and their synonyms. You need a high level of vocabulary to do well in this part. The **cut-off** in this section is 80%, i.e 16 questions.

The second section is a **Quantitative aptitude section**. **10** mathematical ability questions to **Answer** in **10** minutes. You only have to get the logic right. You can **Answer** all of them.. The questions deal with basic mathematics such as multiplication, percentages etc. This is the easiest among all the sections (try not to make silly mistakes).

The third section is the Reading **Comprehension section** with **45** minutes to **Answer 70** questions. **Answer 55-65** questions. You have to do it fast.

The fourth section is **Psychometric**. This section is the simplest, yet the most trickiest. **150** questions about yourself in **30** minutes. Keep in mind when you **Answer** this section, **NEVER THINK ABOUT THE ANSWER TWICE**. For if you do, you will get confused. **Never give the Answer as '(c) ?'**. Lastly don't **Answer** more than 140 questions. If you have doubt about any **Answer** in your mind don't **Answer** it and don't come back to the question. They have a **lower cut-off** of **90 marks** and an **upper cut-off** of **120 marks** in this section. If you go beyond these cut-off you lose the test. Keep this in mind.

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e-INTERVIEW

TCS PAPER AUGUST 2006

TCS process consists of three rounds:

- 1)Written
- 2)Technical Intv
- 3)HR Intv

1)WRITTEN

First i will give u introduction about online test....It is conducted through QUBEX software which is very user friendly...first we will have sample test for 3 minutes which is not count into our real test.After that our real test follows...

We have three colors of buttons on right hand side labelled with question nos...when we click on the button, question will be displayed in the text area...and we have to select the correct option and click on SUBMIT button...note that we have to click on SUBMIT for each question answered..other wise it will not count into our result..it is very important...some students click submit at the end of all questions answered and not selected due to their mistake.

Initially the buttons will have in some color(i dont remember the exact color)...but after clicking we have these colors changed into...

Green:-visited but not answered. i.e. clicked on the question button, not answered and not clicked on SUBMIT.

Orange:-visited and answered. i.e. clicked on the question button, selected the answer, and clicked on SUBMIT.

Check that finally the all buttons will have to be in orange color...meaning that u have answered all questions...

We can change the answer...by clicking that question button, select different option and click on SUBMIT again...

Time will be displayed on right hand upper side...after time has run out ,next section continues...

it consists of three sections

a)verbal:(32 Questions,Time:20min)

Synonyms:10

Antonyms :10

Sentence completion:7

Reading comprehension:5

For Synonyms and antonyms:

for this just go through following in 12th or 13 th GRE Barrons:

1.Antonyms in five model papers at the end of book and also diagnostic test at the beginning of book.

2.Antonym exercises labeled a,b,c,d,e.

3.we have TEST at the end of each word list...just buttify them...no need of knowing the meaning .u have to prepare like...if u saw question..u have to just identify the answer among the options.The options also repeated which are in the book.

If u have less time, then only prepare TESTS that r labeled as only "synonyms"

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or "antonyms".i.e synonyms(word list Tests):1,5,7,9,11,13,16,20,21,25,26,30,31,36,40,46,50.antonyms(word list Tests):2,3,6,8,12,14,17,18,22,23,27,28,32,33,35,37,38,41,42,47,48.

Out of 20 synonyms and antonyms ,I have 17 from the above three .
For Sentence completion: It is the toughest .we have to be so much proficient in english to answer this.For Reading comprehension: For this..go through the five model papers in at the end of GRE barrons 12 th or 13th book..and also diagonal test at the beginning of book and also RC exercises labeled A,B,C,D,E. Just remember the answers.

I got: Paralleling the growth of interest among professional historians....(Model paper 5 , P.No:641) Some of my friends got: The atmosphere is a mixture of...(RC exercise E, P.No:11 some got different ones which r not in book ..so its ur luck if u got from above.

b)Quantitative:(38 questions,40 mins)All r from previous papers...model is the same but careful that numbers r changed...dont buttify the answers..know the procedure to solve.

c)critical Reasoning:(12 Questions,30 mins)
3 passages ,each consists of 4 questions.

For this go through the five model papers in at the end of GRE barrons 12 th or 13th book..all three passages r from those only.Just buttify the **Answers**.

I got these passages:

- 1.In country X,the conservative,democratic and justice parties(model paper-1,sec-6,ques(1-4))
- 2.Byram and Adoniram are code clerks...(Model paper-2,sec-6,Ques(1-4))
- 3.Seven versity basket ball players are to be hounoured (model paper-5,sec-7,ques(6-9))

Remember there is upper cut off...dont be put on every thing, be sure that ur range does not exceed 60-65 out of 80Qs

2)Technical Interview:

Go throgh the following to clear any interview :

Be perfect in ur favourate subjects. and also basics from other subjects.(for CSE students)

All topics from C,C++.

C programs:

factorial using recursion,fibnocci,prime no,pallindrome for strings and nos,swap with out using temporary var,string copy ,concatnate,matrix mulipication.

Operating systems:

processor sheduling,paging,Memory management,deadlock,Process management,virtual memory concept.

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DBMS:

Normalization,SQL,Indexing,Hashing,Cursors,Triggers,Different types of joins.

Networks:

OSI,TCP/IP reference models,topologies,ethernet,FDDI,Token ring,Routing,ATM,IP addressing.

Data structures:

Sorting,searching,stack,que,Linked lists,tree,BFS,DFS.

Software Engg:

software development models,different strategies of testing(unit testing,integration testing...), Types of testing(white or black box).I have these questions:I said favourite subjects as c, c++,OS.So i have..merge sort,prime no programs,virtual functions,demand paging,What r oop concepts.

3)HR Interview:

Be prepared for following questions:

Tell about ur self,strengths & weaknesses(very imp),why TCS,What do know about TCS,Why should we hire u(indirectly mention ur strengths),where do u see ur self after 3 years.

Strengths & weaknesses r very important...be prepared to give explanation in support of ur strengths,like if u said Responsible Person...then be prepared for question why do u think so?

then explain with an example...Strengths r the which will differentiate u from others& it may be alone reason to hire u....understand,why iam stressing this much on strengths...so prepare *Answer* for above and frame a neat example(think of ur real strengths)...while saying ur example..not to be too explanative...be in short.

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Sample Test#1

VERBAL SECTION

Directions for questions 1-15: Find the **synonyms** of the following words

1. Merry

Ans. Gay, Happy

2. Alienate

Ans. Estrange

3. Solicit

Ans. To request

4. Heap

Ans. To pile

5. Cargo

Ans. Freight

6. Momentary

Ans. TrAnsient

7. Volume

Ans. Quantity

8. Veer

Ans. Diverge

9. Dispel

Ans. Dissipate

10. Admonish

Ans. Cautious

11. Meager

Ans. Scanty

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12. Latitude

Ans. Scope

13. Latent

Ans. Potential

14. Covet

Ans. Crave

15. Discretion

Ans. Prudence

QUANTITATIVE SECTION

1. If two pencils cost 8 cents, then how much do 5 pencils cost?

Ans. 20 cents

2. Some work is done by two people in 24 minutes. One of them can do this work alone in 40 minutes. How much time does the second person take to do the same work ?

Ans. 60 minutes

3. A car is filled with four and half gallons of fuel for a round trip. If the amount of fuel taken while going is $\frac{1}{4}$ more than the amount taken for coming, what is the amount of fuel consumed while coming back?

Ans. 2 gallons

4. The lowest temperature in the night in a city A is $\frac{1}{3}$ more than $\frac{1}{2}$ the highest during the day. Sum of the lowest temperature and the highest temperature is 100 degrees. Then what is the low temp?

Ans. 40 degrees

5. Javagal, who decided to go to weekend trip should not exceed 8 hours driving in a day. The average speed of forward journey is 40 miles/hr. Due to traffic on Sundays, the return journey's average speed is 30 m/h. How far he can select a picnic spot?

- a) 120 miles
- b) between 120 and 140 miles
- c) 160 miles

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Ans. 120 miles

6. A salesperson by mistake multiplied a number and got the **Answer** as 3, instead of dividing the number by 3. What is the **Answer** he should have actually got?

Ans. 3

7. A building with height D shadow upto G. What is the height of a neighbouring building with a shadow of C feet.

Ans. $(C \cdot D)/G$

8. A person was fined for exceeding the speed limit by 10 mph. Another person was also fined for exceeding the same speed limit by twice the same. If the second person was travelling at a speed of 35 mph, find the speed limit.

Ans. 15 mph

9. A bus started from busstand at 8.00am, and after staying for 30 minutes at a destination, it returned back to the busstand. The destination is 27 miles from the busstand. The speed of the bus is 18mph. During the return journey bus travels with 50% faster speed. At what time does it return to the busstand?

Ans. 11.00am

10. In a mixture, R is 2 parts and S is 1 part. In order to make S to 25% of the mixture, how much of R is to be added?

Ans. One part of R

11. Wind flows 160 miles in 330 min, for travelling 80 miles how much time does it require?

Ans. 2 hrs 45 mins

12. With a $\frac{4}{5}$ full tank a vehicle can travel 12 miles, how far can it travel with a $\frac{1}{3}$ full tank

Ans. 5 miles

13. There are two trees in a lawn. One grows at a rate $\frac{3}{5}$ of the other in 4 years. If the total growth of trees is 8 ft. What is the height of the smaller tree after 2 years

Ans. $1 \frac{1}{2}$ feet

14. Refer to the figure below. A ship started from P and moves at a speed of I miles per hour and another ship starts from L and moving with H miles per hour simultaneously. Where do the two ships meet?

For Placement

e-INTERVIEW

PG H I J K L are the various stops in between denoted by || . The values g, h, i, j, k, l denote the distance between the ports.

Ans. Between I and J, closer to J

15. If A is travelling at 72 km per hour on a highway. B is travelling at a speed of 25 meters per second on a highway. What is the difference in their speeds in m/sec.

Ans. 1 m/sec

CRITICAL REASONING SECTION

The critical reasoning section consists of some passages followed by 4 to 7 questions per passage. The questions are such that they require ability to read fast and comprehend. The questions asked in this section have three choices TRUE, FALSE, CAN'T SAY. Some examples of questions are given below. Please note that these passages are not the exact passages asked. The passages used a good deal of difficult words which have been removed in this reproduction. Also the passages appearing in the actual paper are much lengthier.

Directions: answer the questions given below the passage or statement as true, false or can't say.

PASSAGE A:

My father has no brothers. He has three sisters who has two childs each.

Answer 1-5 based on the passage A

1. My grandfather has two sons .

Ans. False

2. Three of my aunts have two sons

Ans. Can't say

3. My father is only child to his father

Ans. False

4. I have six cousins from my mother side

Ans. Can't say

For Placement

e-INTERVIEW

5. I have one uncle

Ans. Can't say(uncle can be from the mother's side as well)

PASSAGE B:

Ether injected into gallbladder to dissolve cholesterol based gallstones. This type one day treatment is enough for gallstones not for calcium stones. This method is alternative to surgery for millions of people who are suffering from this disease.

Answer questions 6-9 based on passage B

6. Calcium stones can be cured in one day

Ans. False

7. Hundreds of people contains calcium stones

Ans. Can't say

8. Surgery is the only treatment to calcium stones

Ans. True

9. Ether will be injected into the gallbladder to cure the cholesterol based gall stones

Ans. True

PASSAGE C:

Hacking is illegal entry into another computer. This happens mostly because of lack of knowledge of computer networking. With networks one machine can access to another machine. Hacking goes about without knowing that each network is accredited to use network facility.

Answer questions 10-12 based on passage B

10. Hackers never break the code of the company which they work for

Ans. Can't say

11. Hacking is the only vulnerability of the computers for the usage of the data

Ans. False

For Placement

12. Hacking is done mostly due to the lack of computer knowledge

Ans. False

PASSAGE C:

Alpine tunnels are closed tunnels. In the past 30 yrs not even a single accident has been recorded for there is one accident in the rail road system. Even in case of a fire accident it is possible to shift the passengers into adjacent wagons and even the live fire can be detected and extinguished with in the duration of 30 min.

Answer questions 13-16 based on passage C

13. No accident can occur in the closed tunnels

Ans. True

14. Fire is allowed to live for 30 min

Ans. False

16. All the care that travel in the tunnels will be carried by rail shutters.

Ans. True

PASSAGE D:

In the past helicopters were forced to ground or crash because of the formation of the ice on the rotors and engines. A new electronic device has been developed which can detect the watercontent in the atmosphere and warns the pilot if the temperature is below freezing temperature about the formation of the ice on the rotors and wings.

Answer questions 17-20 based on passage D

17. The electronic device can avoid formation of the ice on the wings

Ans. False

18. There will be the malfunction of rotor & engine because of formation of ice

Ans. True

19. The helicopters were to be crashed or grounded

Ans. True

e-INTERVIEW

20. There is only one device that warn about the formation of ice

Ans. True

PASSAGE E:

In the survey conducted in mumbai out of 63 newly married house wives not a single house wife felt that the husbands should take equal part in the household work as they felt they loose their power over their husbands. Inspite of their careers they opt to do the kitchen work themselves after coming back to home. the wives get half as much leisure time as the husbands get at the week ends.

Answer questions 21-23 based on passage E

21. Housewives want the husbands to take part equally in the household

Ans. False

22. Wives have half as much leisure time as the husbands have

Ans. False

23. 39% of the men will work equally in the house in cleaning and washing

Ans. False

PASSAGE F:

Copernicus is the intelligent. In the days of copernicus the transport and technology development was less & it took place weeks to comunicate a message at that time,wherein we can send it through satellite with in no time. Even with this fast developments it has become difficult to understand each other.

Answer questions 24-27 based on passage F

24. People were not intelligent during Copernicus days

Ans. False

25. TrAnsport facilities are very much improved in noe a days

Ans. Can't say

For Placement

26. Even with the fast developments of the technology we can't live happily.

Ans. Can't say

27. We can understand the people very much with the development of communication

Ans. False.

PASSAGE G:Senior managers warned the workers that because of the introduction of Japanese industry in the car market. There is the threat to the workers. They also said that there will be the reduction in the purchase of the sales of car in public. The interest rates of the car will be increased with the loss in demand.

Answer questions 28-31 based on passage G

28. Japanese workers are taking over the jobs of Indian industry.

Ans. False

29. Managers said car interests will go down after seeing the raise in interest rates.

Ans. True

30. Japanese investments are ceasing to end in the car industry.

Ans. False

31. People are very interested to buy the cars.

Ans. False

PASSAGE H:

In the totalitarian days, the words have very much devalued. In the present day, they are becoming domestic that is the words will be much more devalued. In that days, the words will be very much effected in political area. But at present, the words came very cheap. We can say they come free at cost.

Answer questions 32-34 based on passage H

Q-INTERVIEW

32. Totalitarian society words are devalued.

Ans. False

33. Totalitarian society will have to come much about words

Ans. True

34. The art totalitarian society the words are used for the political speeches.

Ans. False

PASSAGE I:

There should be copyright for all arts. The rule has come that all the arts has come under one copy right society, they were use the money that come from the arts for the developments . There may be a lot of money will come from the Tagore works. We have to ask the benefiter from Tagore work to help for the development of his works.

Answer questions 35-39 based on passage I

35. Tagore works are came under this copy right rule.

Ans. False

36. People are free to go to the public because of the copy right rule.

Ans. Can't say

38. People gives to theater and collect the money for development.

Ans. Can't say

39. We have ask the Tagore resedents to help for the developments of art.

Ans. Can't say

For Placement

PSYCHOMETRIC TEST

You don't need to fret much about this test. This test consists of 150 questions and is just a psychology test which should be answered confidently and doesn't require any preparation. One must try being consistent while answering as the same questions are repeatedly asked in different forms. Also one must answer all questions. Questions are of yes, no or can't say kind.

1. Will you be interested in social activities.
2. While going upstairs do you move two steps at a time.
3. Can you make friends with people of the same sex or with opposite sex also
4. Your friends consider you as a leader in your group
5. People think that you're serious minded.
6. There are times you feel dull without any reason.
7. You host several parties
8. When relatives come to your house do you entertain them.
9. You can work for long hours without tiredness.
10. In your company you want to lead the organisation.

For Placement

VERBAL SECTION

*Directions for questions 1-15: Find the **synonyms** of the following words*

1. Depreciation

Ans. Deflation, Depression, Devaluation, fall, slump in value

2. Deprecate

Ans. Feel and express disapproval of

3. Incentive

Ans. Thing one encourages a person to do something

4. Echelon

Ans. Level of authority or responsibility

5. Innovation

Ans. To make changes or introduce new things

6. Intermittant

Ans. Externally stopping and then starting

7. Detrimental

Ans. Harmful

8. Aberration

Ans. Deviation

9. Conciliation

Ans. To make less angry or more friendly

10. Orthodox

Ans. Conventional or superstitious

11. Fallible

Ans. Liable to err

12. Volatile

Ans. Ever changing



INTERVIEW

13. Manifestation

Ans. Clear or obvious

14. Connotation

Ans. Suggest in addition to the fundamental meaning

15. Reciprocal

Ans. Reverse, Opposite

QUANTITATIVE SECTION

1. There are 150 weights .Some are 1 kg weights and some are 2 kg weights. The sum of the weights is 260.What is the number of 1kg weights?

Ans. 40

2. A is driving on a highway when the police fines him for overspeeding and exceeding the limit by 10 km/hr.At the same time B is fined for overspeeding by twice the amount by which A exceeded the limit.If he was driving at 35 km/hr what is the speed limit for the road?

Ans. 15 kmph

3. A moves 3 kms east from his starting point . He then travels 5 kms north. From that point he moves 8 kms to the east.How far is A from his starting point?

Ans. 13 kms

4. A car travels 12 kms with a $\frac{4}{5}$ th filled tank.How far will the car travel with $\frac{1}{3}$ filled tank?

Ans. 5 kms

5. The sum of the digits of a two digit number is 8. When 18 is added to the number, the digits are reversed. Find the number?

Ans. 35

6. The cost of one pencil, two pens and four erasers is Rs.22 while the cost of five pencils, four pens and two erasers is Rs.32.How much will three pencils, three pens and three erasers cost?

Ans. 27

7. Fathers age is 5 times his son's age. 4 years back the father was 9 times older than son.Find the fathers' present age.

Ans. 40 years

For Placement



INTERVIEW

8. What number should be added to or subtracted from each term of the ratio 17 : 24 so that it becomes equal to 1 : 2.

Ans. 10 should be subtracted

9. What is the 12th term of the series 2, 5, 8,

Ans. 35

10. If 20 men take 15 days to to complete a job, in how many days can 25 men finish that work?

Ans. 12 days

11. In a fraction, if 1 is added to both the numerator at the denominator, the fraction becomes $\frac{1}{2}$. If numerator is subtracted from the denominator, the fraction becomes $\frac{3}{4}$. Find the fraction.

Ans. $\frac{3}{7}$

12. If Rs.1260 is divided between between A, B and C in the ratio 2:3:4, what is C's share?

Ans. Rs. 560

13. A shopkeeper bought a watch for Rs.400 and sold it for Rs.500.What is his profit percentage?

Ans. 25%

14. What percent of 60 is 12?

Ans. 20%

15. H**Ansie** made the following amounts in seven games of cricket in India: Rs.10, Rs.15, Rs.21, Rs.12, Rs.18, Rs.19 and Rs.17(all figures in crores of course).Find his average earnings.

Ans. Rs.16 crore

For Placement

e-INTERVIEW

CRITICAL REASONING SECTION

This section is basically just a reading comprehension section. The critical reasoning section consists of some passages followed by 4 to 7 questions per passage. The questions are such that they require ability to read fast and comprehend. The questions asked in this section have three choices TRUE, FALSE, CANT SAY. Some examples of passages are given in test 1. For further practice you may go through any GRE or CAT book which will provide you with ample practice regarding these kinds of questions.

PSYCHOMETRIC TEST

This test consists of 150 questions and is just a psychology test which should be answered confidently and doesn't require any preparation. One must try being consistent while answering as the same questions are repeatedly asked in different forms. Also one must answer all questions. Questions are of yes or no kind.

example:

Are you sincere?

If you find a purse in the market with loads of money would you return it to the rightful owner?

While climbing up the stairs do you take two steps at a time?

Do you drink and smoke more than you think you should?

Are you the life of the party you attend?

Are you shy?

QUESTIONS OF TCS- 5-7 JUNE 2003 IN ANNA UNIVERSITY

SECTION 1: VERBAL

ANTONYMS

1. WHIMSICAL capricious , fantastic.
2. CENSURE. Criticize.
3. OPTIMUM. Most favourable condi, ,best sol.
4. MISAPPREHENSION. misunderstanding
5. CANDID. frank ,open
6. TORSE. Trunk of human body, statue.
7. CITE. quote commend.
8. EFFUSIVE. demonstrating, emit or flow suddenly
9. IRRADIATE. subject 2 rdiation, shine, lightup.
10. TENACIOUS. persistent, firm hold.

For Placement

e-INTERVIEW

11. VOLUBLE. speaking, spoken fluently.
12. BANAL. Common place, trite, hackneyed.
13. RUPTURE. breaking, breach (breaking of)
14. STANDING. esteem, repute.
15. NASCENT. beginning, not matured.
16. TRANSIENT. passing, short duration
17. CLUTCH. Grasp, seize eagerly.
18. GENERIC. general
19. EMPIRICAL. based on experience, obsv
20. ANOMALY. irregularity.
21. CIRCUITOUS. Indirect.
22. HAMPER. large basket, prevent movement, hinder.
23. SURVEILLANCE. close observation
24. OBJECTIVE. Actually aiming, something sought
25. RAUCOUS. harsh-sounding, loud, hoarse
26. VORACIOUS. very eager, gluttonous, ravenous (hungry)
27. PEDIGREE. pure bred animal. distinguished one.
28. FIDELITY. faithful, loyal
29. AUGMENT. increase, add
30. PRECARIOUS. Uncertain, insecure, depend
31. TRANSIENT. short duration, passing
32. ALACRITY. Briskness, cheerfulness.
33. DEROGATORY. insulting disparaging
34. ONUS. duty, respon
35. ANALOGUE. analogous things.
36. EXPEDIENT. advantageous, advisable.
37. ANALOGOUS. similar or parallel
38. ASSUAGE. calm soothe, appease
39. COMPLIANCE. obedient to a req, capacity to yield.
40. IRRADIATE. subject to radiation, shine up
41. DIFFIDENT. shy, lacking self confidence.
42. PLAINTIVE. expressing sorrow, mournful.
43. INCINUATE.
44. MISDEMEANOR. misdeed (evil deed)

e-INTERVIEW

45. EXONERATE. free from blame
46. GREGARIOUS. fond of compy, living in communities and flocks
47. ANATHEMATIZE. Curse
48. BENIGN. gentle ,mild kindly.
49. ATTENUATE. Make thin, reduce
50. SONOROUS. full, deep sound,
51. BOLSTER. Encourage, supp, cylind pillow. prop up
52. DIVERGENT. Dispersed, differ. Depart.
53. DECOLLATE dress of women
54. HETERODOX not orthodox
55. RESTIVENESS restlessness
56. IGNOMINIOUS. Shameful ,humiliating
57. PLAGARIOUS.
58. EFFIGY. model of a person , sculpture.
59. TENACIOUS. persistent
60. RETROGADE. Directed backwards, reverting , declining
61. SACROSANCT. sacred, inviolable.
62. DANGLE. loosely suspended, hold.
63. ANOMALY. irregularity
64. CRYPTIC. Secret, mysterious
65. DEBILITATE. Enervate.
66. DIVULGE. Reveal, disclose
67. SCEPTIC. Person inclined 2 dbt, philosopher who questions
68. SPENDTHRIFT. Extravagant person.(excess spending).
69. INDIGENOUS. Native ,belonging naturally 2 a place.
70. ERRONIOUS. incorrect
71. RUPTURE. Breaking, breach
72. MINION. Servile(like a slave)subordinate.
73. VERACITY. Truthful by nature.

SECTION 2: QUANTITATIVE AND LOGICAL REASONING.

MOST OF THE QUESTIONS WERE FROM TCS OLD PAPERS.

THE QUESTIONS WILL BE OF THIS PATTERN TO EVERYONE. ONLY THE DATA GET CHANGES.

For Placement

1. In a two-dimensional array, X (9, 7), with each element occupying 4 bytes of memory, with the address of the first element X (1, 1) is 3000, find the address of X (8, 5).

2. In the word ORGANISATIONAL, if the first and second, third and fourth, fourth and fifth, fifth and sixth words are interchanged up to the last letter, what would be the tenth letter from right? Roaginasitnola tenth letter - t. mory?

Select the odd one out. a. Java b. Lisp c. Smalltalk

2. What is the largest prime number that can be stored in an 8-bit memory? **d. Eiffel.**

3. Select the odd one out a. SMTP b. WAP **c. SAP** d. ARP

4. Select the odd one out a. Oracle **b. Linux** c. Ingress d. DB2

5. Select the odd one out a. WAP b. HTTP **c. BAAN** d. ARP

6. Select the odd one out a. LINUX b. UNIX c. SOLARIS **d. SQL SEVER**

7. Select the odd one out a. SQL b. DB2 c. SYBASE **d. HTTP**

8. The size of a program is N. And the memory occupied by the program is given by $M = \sqrt{100N}$. If the size of the program is increased by 1% then how much memory now occupied?

9. A man, a woman, and a child can do a piece of work in 6 days. Man only can do it in 24 days. Woman can do it in 16 days and in how many days child can do the same work?

10. In which of the system, decimal number 384 is equal to 1234?

11. Find the value of the 678 to the base 7. $1656_{678} = 678_7$

12. Number of faces, vertices and edges of a cube

13. Complete the series 2, 7, 24, 77, 240 ie $2*12=24, 7*11=77, 24*10$

14. Find the value of $@@+25-++@16$, where @ denotes "square" and + denotes "square root". $\text{Sqr}(\text{sqr}(\text{sqr}(25)))-(\text{sqr}(\text{sqr}(\text{sqr}(16))))=625-4=621$

15. Find the result of the following expression if, M denotes modulus operation, R denotes round-off, T denotes truncation: $M(373,5)+R(3.4)+T(7.7)+R(5.8)=19$

16. If TAFJHH is coded as RBKGI then RBDJK can be coded as -----

17. $G(0)=-1, G(1)=1, G(N)=G(N-1) - G(N-2), G(5)= ?$

18. What is the max possible 3 digit prime number?

19. A power unit is there by the bank of the river of 750 meters width. A cable is made from power unit to power a plant opposite to that of the river and 1500mts away from the power unit. The cost of the cable below water is Rs.

e-INTERVIEW

15/- per meter and cost of cable on the bank is Rs.12/- per meter. Find the total of laying the cable.

20. The size of a program is N . And the memory occupied by the program is given by $M = \sqrt{100N}$. If the size of the program is increased by 1% then how much memory now occupied?
21. In Madras, temperature at noon varies according to $-t^2/2 + 8t + 3$, where t is elapsed time. Find how much temperature more or less in 4pm to 9pm.
22. The size of the bucket is N kb. The bucket fills at the rate of 0.1 kb per millisecond. A programmer sends a program to receiver. There it waits for 10 milliseconds. And response will be back to programmer in 20 milliseconds. How much time the program takes to get a response back to the programmer, after it is sent?
23. A man, a woman, and a child can do a piece of work in 6 days. Man only can do it in 24 days. Woman can do it in 16 days and in how many days child can do the same work?
24. If the vertex (5,7) is placed in the memory. First vertex (1,1) 's address is 1245 and then address of (5,7) is -----
25. Which of the following are orthogonal pairs? a. $3i+2j$ b. $i+j$ c. $2i-3j$ d. $-7i+j$
26. If VXUPLVH is written as SURMISE, what is SHDVD?
27. If A, B and C are the mechanisms used separately to reduce the wastage of fuel by 30%, 20% and 10%. What will be the fuel economy if they were used combined.
28. What is the power of 2? a. 2068 b.2048 c.2668
29. Complete the series. 3, 8, --, 24, --, 48, 63
30. Complete the series. 4, -5, 11, -14, 22, ---
31. A, B and C are 8 bit no's. They are as follows:
A 1 1 0 1 1 0 1 1
B 0 1 1 1 1 0 1 0
C 0 1 1 0 1 1 0 1

Find $((A-B) \cup C) = ?$

Hint :

A-B is $\{A\} - \{A \cap B\}$

For Placement

32. A Flight takes off at 2 A.M from northeast direction and travels for 11 hours to reach the destination which is in north west direction. Given the latitude and longitude of source and destination. Find the local time of destination when the flight reaches there?
33. A can copy 50 papers in 10 hours while both A & B can copy 70 papers in 10 hours. Then for how many hours required for B to copy 26 papers?
34. A is twice efficient than B. A and B can both work together to complete a work in 7 days. Then find in how many days A alone can complete the work?
35. A finish the work in 10 days. B is 60% efficient than A. So how days does B take to finish the work?
36. A finishes the work in 10 days & B in 8 days individually. If A works for only 6 days then how many days should B work to complete A's work?
37. Given the length of the 3 sides of a triangle. Find the one that is impossible?
(HINT : sum of smaller 2 sides is greater than the other one which is larger)
38. Find the singularity matrix from a given set of matrices?(Hint $\det(A) \neq 0$)
39. A 2D array is declared as $A[9,7]$ and each element requires 2 byte. If $A[1,1]$ is stored in 3000. Find the memory of $A[8,5]$?
40. Sum of slopes of 2 perpendicular st. lines is given. Find the pair of lines from the given set of options which satisfy the above condition?
43. (a) $2+3i$ (b) $1+i$ (c) $3-2i$ (d) $1-7i$.Find which of the above is orthogonal.
44. $(\text{Momentum} \times \text{Velocity}) / (\text{Acceleration} \times \text{distance})$ find units.
45. The number 362 in decimal system is given by $(1362)_x$ in the X system of numbers find the value of X a) 5 b) 6 c) 7 d) 8 e) 9
46. Given \$ meAns Tripling and % meAns change of sign then find the value of \$%\$6-%\$%6
47. My flight takes of at 2am from a place at 18N 10E and landed 10 Hrs later at a place with coordinates 36N70W. What is the local time when my plane landed.
a) 6:00 am b) 6:40am c)7:40 d)7:00 e)8:00 (Hint : Every 1 deg longitude is equal to 4 minutes . If west to east add time else subtract time)
48. Find the highest prime number that can be stored in an 8bit computer.
49. Which of the following set of numbers has the highest Standard deviation?
1,0,1,0,1,0
-1,-1,-1,-1,-1,-1

e-INTERVIEW

1,1,1,1,1,1

1,1,0,-1,0,-1

50. Match the following:

- | | | |
|--------------------------|-----|------------------|
| 1. Male - Boy | --- | a. A type of |
| 2. Square - Polygon | --- | b. A part of |
| 3. Roof - Building | --- | c. Not a type of |
| 4. Mushroom - Vegetables | --- | d. A superset of |

Ans: 1- d, 2- a, 3- b, 4- c

51. Match the following.

- | | | |
|-------------------------|-----|------------------|
| 1. brother – sister | --- | a. Part of |
| 2. Alsatian – dog | --- | b. Sibling |
| 3. sentence – paragraph | --- | c. Type of |
| 4. car - steering | --- | d. Not a type of |

Ans. 1-b, 2-c, 3-a, 4-d

SECTION 3: CRITICAL REASONING

I. The players G,H,J,K,L,M,N,O are to be felicitated of representing the county team in Baseball. Out of these H,M,O also are in the Football team and K,N are there in the Basket ball team. These players are to be seated on a table and no two players who has represented the county in more than one game are to sit together.

1. Which one of the orders can they be seated in
2. Which of the orders is not possible
3. If N is seated in the middle then which of the following pairs cannot be seated near him .
4. If M is seated then which of the following pairs can be seated next to him.

Choices are given for all the questions

II There are 2 groups named Brown and red. They can't marry in the same group. If the husband or wife dies then the person will convert to their own group. If a person is married then the husband will have to change his group to his wife's group. The child will own the mothers group. From these a set of 4 questions were given. Solve them

Eg;

1. Brown's daughter is red (False)

For Placement

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2. If a person is red. Then his/her mother's brother belong to which group if he is married (Brown)

III 7 people – a,b,c,d,e,f,g

Need to make a seating arrangement for them.

Conditions: 1)A should be at the center 2) B,F should be at the right extreme

3)C,E always in pair 4)D,G as far as possible

Questions from the above were asked?

Eg:

Which of the following pairs were not possible?

Others questions were similar to the above. More questions were from Barrons

HR QUESTIONS:

For all the questions they expect a elaborate **Answer** with justifications and not a short one.

- 1) Market urself
- 2) Why TCS ?
- 3) Will u switch over to any other company after joining TCS? If NO then why?
- 4) R u mobile? (R u ready to go anywhere ?)
- 5) R u ready to go to places of extreme temperature. If yes what do u think of ur safety?
- 6) What are the requirements for leadership quality ?
- 7) Why u switch over to s/w from u r own back ground?
- 8) What are the qualities required for a s/w engineer and Project manager?
- 9) Rate u r good qualities?
- 10) What is the difference between hard and smart work?
- 11) Do u have a plan of doing higher studies?

Technical Questions:

General :

The questions were different for different persons and depends on the field of interest that u say.

Communication :

- 1) OSI Layers in n/w with the functionalities
- 2) TCP/IP protocol
- 3) Bridges, Routers, LAN, WAN, MAN

For Placement

e-INTERVIEW

6. When you eat a meal with others, you are usually one of the last to finish.
7. You believe in the idea that we should "eat, drink and be merry, for tomorrow we die."
8. When you find that something you have bought is defective, you hesitate to demand an exchange or a refund.
9. You find it easy to find new acquaintances.
10. You are sometimes bubbling over with energy and sometimes very sluggish.
11. You are happiest when you get involved in some projects that calls for rapid action.
12. Other people think of you as being very serious minded.
13. In being thrown by chance with a stranger, you wait for the person to introduce himself or herself.
14. You like to take part in many social activities.
15. You sometimes feel "just miserable" for no good reason at all.
16. You are often so much "on the go" that sooner or later you may wear yourself out.
17. You like parties you attend to be lively.
18. If you hold an opinion that is radically different that expressed by a lecturer, you are likely to tell the person about it either during or after the lecture.
19. It is difficult for you to chat about things in general with people.
20. You give little thought to your failures after they are passed.
21. You often wonder where others get all the excess energy they seem to have.
22. You are inclined to stop to think things over before you act.
23. You avoid arguing over a price with a clerk or sales person.
24. You would dislike very much to work alone in some alone place.
25. You often find it difficult to go to sleep at night because you keep thinking of what happened during the day.
26. You find yourself hurrying to get to places even when there is plenty of time.
27. You like work that requires considerable attention to details.
28. You are satisfied to let some one else take the lead in group activities.
29. You enjoy getting acquainted with people.

e-INTERVIEW

30. It takes a lot to get you emotionally stirred up or excited.
31. You work more slowly and deliberately than most people of your sex and age.
32. You are a carefree individual.
33. When people do not play fair you hesitate to say anything about it to them.
34. It bothers you to have people watch you at your work.
35. You have usually been optimistic about your future.
36. You like to have plenty of time to stop and rest.
37. You take life very seriously.
38. You enjoy applying for a job in person.
39. You would like to be a host or hostess for parties at club.
40. You often feel uncomfortable or uneasy.
41. You are the kind of person who is "on the go" all the time.
42. You often crave excitement.
43. The thought of making a speech frightens you.
44. You find it easy to start conversation with strangers.
45. You often feel guilty without a very good reason for it.
46. People think you are a very energetic person.
47. You sometimes make quick decisions that you later wish you hadn't made.
48. You find it difficult to ask people for money or other donations, even for a cause in which you are interested.
49. You are so naturally friendly that people immediately feel at ease with you.
50. You daydream a great deal.
51. You are quick in your actions.
52. You have a habit of starting things and then losing interest in them.
53. When you were a child many of your playmates naturally expected you to be the leader.
54. You sometimes avoid social contacts for fear of doing or saying the wrong thing.
55. You have frequent ups and downs in mood, sometimes with and sometimes without apparent cause.
56. You always seem to have plenty of vigour and vitality.
57. It is difficult for you to understand people who get very concerned about things.
58. When a clerk in a store waits on others who come after you, you call his or her attention to the fact.

For Placement

e-INTERVIEW

59. You would be very unhappy if you were prevented from making numerous social contacts.
60. There are times when your future looks very dark.
61. You sometimes wish that people would slow down a bit and give you a chance to catch up.
62. Many of your friends think you take your work too seriously.
63. You hesitate to walk into a meeting when you know that everyone's eye will be upon you.
64. You limit your friendships mostly to members of your own sex.
65. You almost always feel well and strong.
66. You seem to lack the drive necessary to get as much as other people do.
67. You make decisions on the spur of the moment.
68. You are rather good at bluffing when you find yourself in difficulty.
69. After being introduced to someone , you just cannot think of things to say to make good conversation.
70. You feel lonesome even when with other people.
71. You are able to work for unusually long hours without feeling tired.
72. You often act on the first thought that comes into your head.
73. At the scene of an accident, you take an active part in helping out.
74. You have difficulty in making new friends.
75. Your mood often changes from happiness to sadness or vice versa without knowing why.
76. You talk more slowly than most people.
77. You like to play practical jokes upon others.
78. You take the lead in putting life into a dull party.
79. You would like to belong to as many clubs and social organizations as possible.
80. There are times when your mind seems to work very slowly and other times when it works very rapidly.
81. You like to do things slowly and deliberately.
82. You are a happy-go-lucky individual.
83. When you are served stale or inferior food in a restaurant, you say nothing about it.
84. You would rather apply for a job by writing a letter than by going through with a personal interview.

For Placement

e-INTERVIEW

85. You are often in low spirits.
86. You are inclined to rush from one activity to another without pausing enough for rest.
87. You are so concerned about the future that you do not get as much fun out of the present as you might.
88. When you are attracted to a person whom you have not met earlier you make an active attempt to get acquainted even though it may be quite difficult.
89. You are inclined to limit your acquaintances to select few
90. you seldom give your past mistakes a second thought.
91. You are less energetic than many people you know.
92. You often stop to analyzed your thoughts and feelings.
93. You speak out in meetings to oppose those whom you feel sure are wrong.
94. You are so shy it bothers you.
95. You are sometimes bothered by having a useless thought come into your mind over and over.
96. You get things in hurry.
97. It is difficult for you to understand how some people can be so unconcerned about the future.
98. You lie to sell things (i.e. to act as a sales person)
99. You are often "Life of the Party".
100. You find daydreaming very enjoyable.
101. At work or at play other people find it hard to keep up with the pace you set.
102. You can listen to a lecture without feeling restless.
103. You would rather work for a good boss than for yourself.
104. You can express yourself more easily in speech than in writing.
105. You keep in fairly uniform spirits.
106. You dislike to be hurried in your work.
107. You sometimes find yourself "crossing bridges before you come to them".
108. You find it somewhat difficult to say "no" to a sales person who tries to sell you something you do not really want.
109. There are only a few friends with whom you can relax and have a good time.
110. You usually keep cheerful in spite of trouble.
111. People sometimes tell you to "slow down" or "take it easy".

e-INTERVIEW

112. You are one of those who drink or smoke more than they know they should.
113. When you think you recognize people you see in a public place, you ask them whether you have met them before.
114. You prefer to work alone.
115. Disappointment affect you so little that you seldom think about them twice.
116. You are slow and deliberate in movements.
117. You like wild enthusiasm, sometimes to a point bordering on rowdiness at a football or baseball game.
118. You feel self conscious in the presence of important people.
119. People think of you as being a very social type of person.
120. You have often lost sleep over your worries.
121. You can turn out a large amount of work in a short time.
122. You keep at a task until it is done, even after nearly everyone else has given up.
123. You can think of a good excuse when you need one.
124. Other people say that it is difficult to get to know you well.
125. You daydreams are often about things that can never come true.
126. You often run upstairs taking two steps at a time.
127. You seldom let your responsibility interfere with your having a good time.
128. You like to take on important responsibilities such as organizing a new business.
129. You have hesitated to make or to accept "dates" because of shyness.
130. Your mood is very easily influenced by people around you.
131. Others are often amazed by the amount of work you turn out.
132. You generally feel as though you haven't a care in the world.
133. You find it difficult to get rid of sales person whom you do not care to listen or give your time.
134. You are a listener rather than a talker in a social conversation.
135. You almost always feel that life is very much worth living.
136. It irritates you to have to wait at a crossing for a long freight train to pass.
137. You usually say what you feel like saying at the moment.
138. You like to speak in public.
139. You like to be with people.
140. You generally keep cool and think clearly in exciting situations.
141. Other people regard you as a lively individual.
142. When you get angry, if you let yourself go, you feel better.

For Placement

e-INTERVIEW

143. You seek to avoid all trouble with other people.
144. People seem to enjoy being with you.
145. You sometimes feel listless and tired for no good reason.
146. It is hard to understand why many people are so slow and get so little done.
147. You are fond of betting on horse races and games, whether you can afford it or not.
148. If someone you know has been spreading untrue and bad stories about you, you see the person as
soon as possible and have a talk about it.
149. Shyness keep you from being as popular as you should be.
150. You are generally free from worry about possible misfortunes.

PSYCHOMETRY GROUPING

I have grouped the psychometric questions numbering 150. as it is not possible for me to write each question I am indicating only the numbers. Its up to u to correspond to the questions

At the outset I would like to clearly state that this version has no guarantee to be the correct version. Actually some 30/150 questions fall in to many groups and the line differentiating them is very thin. I have tried my best to group them.

Talking about the groups- they are 11 in number. As I have mentioned- this is not the only correct version- but this can be one. So if u feel u can group them more finer u can subdivide them in to many more.

I would advise u strictly to go through the whole set of groups and define urselves- the key to psychometric test is to define who u are and then start looking in to deeply the questions.

Each group represents a character or personality- u will decide which of the following attributes u would like to include in ur personality.

GROUP 1 LEADERSHIP QUALITIES(I would not hesitate in taking up new res)

2 3 28 39 53 73 103 128

For Placement

e-INTERVIEW

GROUP 2 SOCIABLE NATURE(I not shy,make new friends,be with people,friendly with people)

4 9 13 14 24 29 44 49 54 59 64 70 74 79 88 89 109 114 119 139

GROUP 3 BALANCED PSYCHE people who are balanced- not wavery in their moods etc.. etc...(stable mood, always on the go,uniform spirits)

5 10 15 16 35 40 41 45 52 55 60 65 75 80 95 105 130 145 148

GROUP 4 DAYDREAMERS(I am not going to be daydreamer and no dream about impossible thing)

50 100 107 125

GROUP 5 PATIENCE AND ATTRIBUTE OF TAKING RIGHT DECISIONS AFTER CAREFUL ANALYSIS(patient, take time b4 decisions and giving views)

22 27 47 67 72 86 92 96 102 112 117 126 134 136 137 140 142 147

GROUP 6 EASYGOING AND CAREFREE NATURED PERSONALITIES(not easygoing ,not carefree,

6 20 25 32 57 68 77 82 87 90 98 115 123 127 132 135 150

GROUP 7 ENTHUSIASTIC PERSONALITIES(Yes enthusiastic in work , make fun in parties,)

1 17 42 66 78 85 99 110 141 144

GROUP 8 SLOW SLUGGISH DULL PERSONALITIES

7 11 21 30 31 36 46 51 56 61 76 81 91 106 116 101 146

GROUP 9 SERIOUS PERSONALITIES(Serious Person)

12 26 37 62 97 111 120 124 143

GROUP 10 STRONG FULL OF ENERGY(I posses worlds highest amount of energy)

71 121 122 131

GROUP 11 DIFFIDANT (shy, not able to ask even the most required thing..... etc..)(NOT SHY,ASK QUES,FEEL FREE IN PUB. SPEAK)

18 19 23 33 34 38 43(34) 48 58 63(34) 69 83 84(38) 93 104(34) 108 113

118(34) 129 133 1 read the following before proceeding

1. the last group is bigger and within the group itself a small subgrouping is done- the no. in the bracket is the parent question to which the no outside the bracket belongs to- hope u understand
2. strictly- this may not be 100 % right as many questions look very similar. So go thru and make alterations if u feel so.

For Placement

e-INTERVIEW

3. in each groups there r 2 kinds of questions- if u say yes to some and no to others u will land up at the same definition. So its ur common sense to understand the affirmative and negative tones of each question and answer accordingly- u shld know when to answer no and yes for each question in the same group-
4. some groups itself are opposite to each other and can be grouped together- but I have separated them on the basis of finer inferences eg:- serious persons cant be easy going type. if u say no to any question on serious group question u will land as an easygoing personality and vice versa- so they can be put under a single group- but some finer points prevent from doing so

TCS TALENT TEST QUESTION ALPHABHET- "F"

PART - I

VERBAL REASONING

SYNONYMS:

1. CIRCUMSPECT

(i)CONDITION (ii)INSPECT (iii)CAUTIOUS (IV)RECKLESS

2. ABYSMAL

1.SLIGHT 2.DEEP

3. ILLUSTRIOUS

4. PROLIFIC

5. DILIGENT

1.INTELLIGENT 2.....

6. VEHEMENT

1.PASSIONATE 2.CONFESY 3.NOISY 4.MOQULIS

7. IMPETUS

1.CONNECT 2. CRUCIAL 3.STIMULUS 4. IMMEDIATE

8. ACRONYM

1. ABBREVIATION 2. SIMILAR

9. DISSEMINATE

1.FORECAST 2.SPREAD 3.BRANSP

10. HARBINGER

1.NAVAL 2. UNCOMMON 3.FORE RUNNER 4.GLORY

ANTONYMS. 11. TRACTABLE

1.OBJECTIONABLE 2.ENJOYABLE 3.ADAPTABLE 4.OBSTINATE

12. COVERT

1.MANIFEST 2.INVISIBLE 3.SCARED 4.ALTER

13. PENSIVE

1.REPENTENT 2.SAD 3. THOUGHTLESS 4.CARELESS ANS: 3

14. MITIGATE

1.AGGRAVATE 2.RELIEVE 3.ELEMINATE 4.EXHUMAN

15. DIVERGENT

1.CONTRARY 2.COMING TOGETHER 3.CONVERSANT

4.CONTROVERSY

16. DOGMATIC

1.SCEPTICAL 2.RESILIENT 3.STUBBORN 4.SUSPICIOUS

17. CLUTCH

@-INTERVIEW

1. HOLD 2. GRAB 3. RELEASE 4. SPREAD

18. MOTLEY

1. BULKY 2. SPECKLED 3. HOMOGENEOUS 4. DIFFERENT

19. RELINQUISH

1. PURSUE 2. VANQUISH 3. DESTROY 4. DEVASTATE

20. TRANSIENT

1. PERMANENT 2. REMOVED

20-26

FILL IN THE APPROPRIATE SENTENCES BETWEEN THE PASSAGE

27-32

READ THE PASSAGE AND ANSWER THE QUESTION

PART - II

1. WHICH IS THE NEXT NO:

5,6,7,8,10,11,14,? ANS: 18

2. BFGE CODED AS CEHD THEN CODE PVHDJ ANS:
QUICK

3. FIND THE NO. OF Y FOLLOWED BY W BUT THAT IS NOT FOLLOWED
BY Z.

Y W R U D D Y W Z

4. WHAT IS THE LARGEST PRIME NO THAT IS STORED IN 8 BIT PATTERN

ANS: 253 (NOT SURE)

5. WHICH WILL GIVE GOOD STANDARD DEVIATION

1. (7,0,-7,0,7) 2. (7,-7,7,-7,7) 3. (1,0,-1,0,1)

6. WHICH IS NOT A SIDE OF A RECTANGULAR

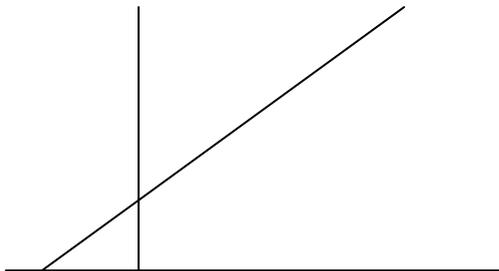
1. (2,3,4) 2. (3,4,7) 3. (3,5,9)

7. WHICH SHAPE WILL BE OBTAINED BY USING THESE VALUES OF X, Y

X	Y
0	0.00001
10	1.02
100	1.72
1000	3.00
9999	4.72

8. WHICH EQUATION THAT BEST SUITS THIS CURVE

A LINE CUTS X AT -1 WHEN Y=0 AND X=0 WHEN Y=3 AND GOES UPWARD
Y



X

9. A MAN, WOMAN AND A BOY JOINTLY DID A JOB IN 6 DAYS. A MAN
ALONE FINISHES IN 10 DAYS, A WOMAN ALONE FINISHES IN 24 DAYS.
THEN HOW MANY DAYS THE BOY CAN TAKE TO FINISH?

10. FOR TEMPERATURE A FUNCTION IS GIVEN ACCORDING TO TIME :

$$\left(\frac{t^2}{6}\right) + 4t + 12$$

WHAT IS THE TEMPERATURE RISE OR FALL BETWEEN 4 AM TO 9 AM

For Placement

e-INTERVIEW

11. AN AEROPLANE STARTS FROM A (SOME LATITUDE IS GIVEN ACCORDING TO PLACE) AT 2 AM LOCAL TIME TO B (SOME LATITUDE). TRAVELLING TIME IS 10 HOURS. WHAT IS THE LOCAL TIME OF B WHEN IT REACHES B

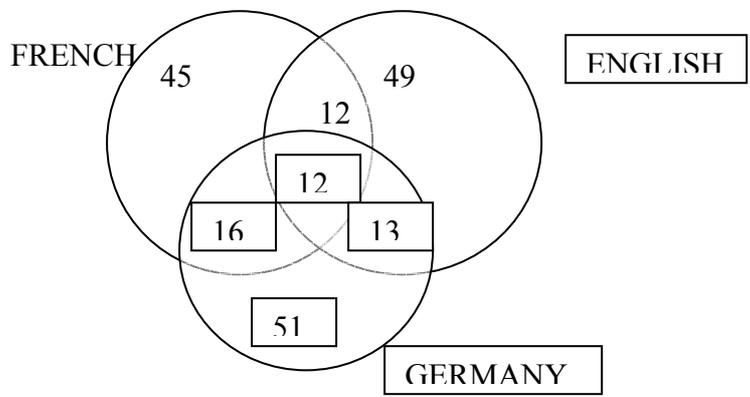
12. A FILE IS TRANSFERRED FROM A PLACE TO A DESTINATION CAPABLE OF 10 KB. THEY GIVEN SOME RATE OF TRANSFER. U HAVE FIND A EQUATION THAT BEST SUIT THIS.

13. IN A PLANAR CUBE, THE NO. OF VERTICES, NO OF EDGES AND NO OF FACES ARE

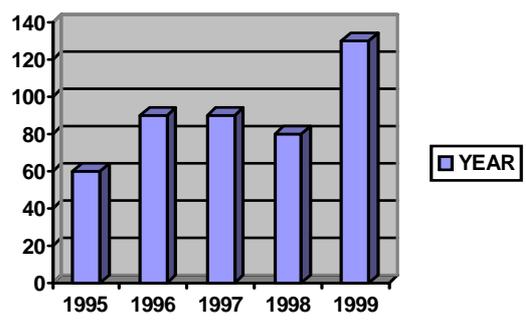
1. 6,6,6 2. 4,8,12 3.... 4.....

14. VENN DIAGRAM below

1. HOW MANY PERSON KNOW ENGLISH MORE THAN FRENCH
2. HOW MUCH % OF PEOPLE KNOWS ALL THE 3 LANGUAGES
3. HOW MUCH % OF PEOPLE THOSE WHO KNOWS FRENCH AND GERMAN AND NOT ENGLISH



15. CORRECT CHART WITH CORRECT VALUES



X- YEAR

Y- NO OF PERSONS

1. AVERAGE NO. OF PERSONS FROM 1995 – 1999
2. WHICH YEAR HAS LARGE DIFFERENCES IN NO OF PERSONS
3. IF 10% OF PEOPLE LEAVES THE OFFICE IN 1998 THEN, HOW MANY FRESH CANDIDATES CAN BE ADDED IN THE NEXT YEAR

16. WHAT IS THE VALUE OF $M(373, 7) + R(6.8) - T(3.4) + R(3.4)$

M- MODULAS R- ROUNDOFF T- TRUNCATE

e-INTERVIEW

17. WHAT IS THE VALUE OF
 $\% \# \% (5) + \# \% \# (2)$
WHERE % - DOUBLING #- RECIPROCAL

18. MATCH THE FOLLOWING

A	B
1. SENTENCE, PARAGRAPH	1. TYPE OF
2. BASMATI, WHEAT	2. A PART OF
3. BROTHER, SISTER	3. NOT A TYPE OF
4. BREIGAL, DOG	4. SIBLING

ANS: 1-2 2-1 3-3 4-4

19. $G(0) = 1$ $G(1) = -1$ IF $G(N) = 2 * (G(N-1)) - 3(G(N-2))$ THEN WHAT IS THE VALUE OF $G(4)$?

20. A	0	0	0	0	1	1	1	1
B	0	0	1	1	0	0	1	1
C	0	1	0	1	0	1	0	1

(A U B) ∩ C

21. TIME	DEGREE
2	7° 6' 43.15"
4	5° 31' 4.3"

THEN WHAT WILL BE THE DEGREE WHEN TIME IS 3 O CLOCK

22. THREE COMPANIES WORKING INDEPENDENTLY AND GET SAVINGS 10%, 20%, 25%. IF THE COMPANIES WORK JUST OPPOSITE THEN WHAT WILL BE THE NET SAVING?

23. WHICH ONE WILL BE THE EXACT POWER OF 3

(i) 2768 (ii) 2678 (iii) 2187

24. SOME RELATION THAT IS DEDUCE TO

A (POW 2) DIRECT PROPORTIONAL TO X (POW 3)

B (POW 2) DIRECT PROPORTIONAL TO Y (POW 3)

SOME FOUR ANSWERS WERE GIVEN

ANS: ALL OF THE ABOVE

25. 900 M WIDE 3000 M WIDTH

SOMETHING I CAN'T REMEMBER SOME VALUES ARE GIVEN

BY AIR PER M Rs. 4 BY GROUND PER M Rs. 5

THEN WHERE U WILL CUT

ODD MAN OUT

26. 1. JAVA 2. SMALLTALK 3. LISP 4. EIFFEL

27. 1. SAP 2. ARP 3. WAP 4. TCP IP

28. WHICH IS THE PERFECT ONE AMONG THE 4

1. $2x + 3y = 4$ 2. $x + y = -1$ 3. $Y = 2x + 3$

29-32. I FORGOT

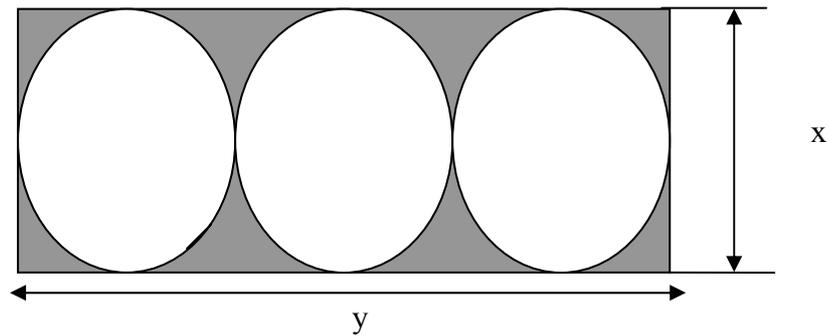
For Placement

PART III

Pattern : Quantitative questions from RS Aggarwal.

A few questions in GRE pattern – paragraph given and questions asked

1. A news is passed to 2 persons in 5 minutes. Each person passes it to 2 other persons. What is the time taken for the news to reach 768 persons.
- 2.



Find the area of shaded portion.

Ans : d

- 3 A person has certain no. of apples. He gives half the no of apples and half an apple to another person. Repeat the process for 7 persons. At the end, he has no apples. Find the no of apples in the beginning.

Ans. 127

4. Product of prime nos between 1 20
5. 1 balance, 9 balls, one faulty ball.no. of times the balance is used to find the faulty ball.
6. 2 trains travel opp to each other at 60 Km/hr. When they are 18 Km apart a fly starts flying at 18 Km/hr from one train to another. Distance traveled by the fly when both trains collide is -----
7. Average score of a batsman is 15. If he scores 23 in an innings, the average is 16.

What should he score to get an average of 18. *Ans*- 39

8. In a village, there is flood. In one village casualties were less than the other. Why?

Ans : There were better health care centres(HCC).

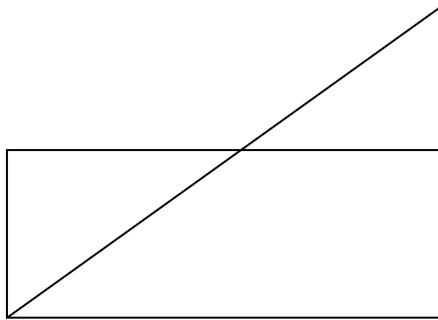
9. A club has male and females.

If 15 females quit, no of males = double the no of females

If 45 males quit, no of females = 5 (no of males)

10. I was married 10 years ago, my wife was the sixth member of the family. Now I have one baby and my father is dead. The average age of my family before and now is the same. What is my father's age when he died.

11. A question on Pythagoras Theorem. **Ans.** 20



12. 1000 doors. I man opens all

II man closes all multiples of 2

III man opens all multiples of 3

IV man closes all multiples of 4

How many doors are open?

13. Rs. 5 - 20g

Rs.2, Re.1, 50p, 10p and 5p have corresponding weights. For 196.5 gm, what is the min no. of coins required to make this weight.

14. A can complete a work in 8 days, B in 7 days, C in 6 days A works on day 1,4,7, B on 2,4,6 C on 3,5,8. When will the work be completed. 15. 2,3,5,7. Find all possible 4 digit nos divisible by 4.

Ans. 8

16. In a bus, there are 40 seats. The money collected from the passengers sum up to Rs.70.37.... Find the total no of vacant seats.

Options 9 11 13

17. The distance between Mumbai & Calcutta is 25000 Km. Train goes from Mumbai to Culcutta for which Speed & Time are given. From C-M Speed alone is give. Of the above conditions which is not required. (Not Complete)

Ans: The distance 25,000Km is not required. Because, Speed * Time = Distance. So only two conditions are required. 18. $m < n$ & xy Which is false?

Ans: $x-m < y-n$

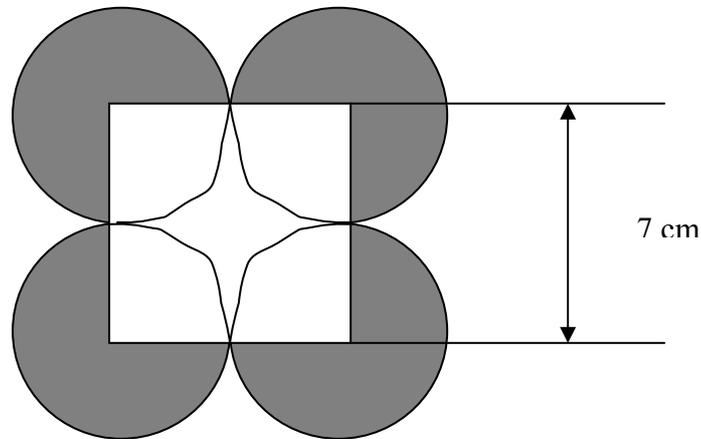
19. A person has Rs.100. If he wins he gains 10%. If he loses the game, he loses 10%. He wins twice and loses twice. How much he has at the end?

Ans: Always less than 100.



21.

INTERVIEW



Area of Shaded portion is ?

Ans : 115.5

Verbal

22. In A tribal group two groups live in different climatic conditions. Ear Sensitivity is tested and found that one has more when compared to other. What is the reason.

Ans. Depends on the physical place and condition he is living.

Pattern : Quantitative questions from RS Aggarwal.

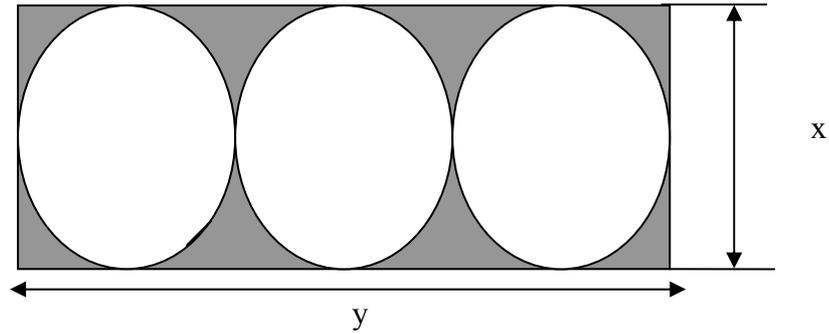
A few questions in GRE pattern – paragraph given and questions asked

Check all the *Answers* by working out.

3. A news is passed to 2 persons in 5 minutes. Each person passes it to 2 other persons. What is the time taken for the news to reach 768 persons.

4.

For Placement



Find the area of shaded portion.

Ans : $d \left(3x^2(1-\frac{\pi}{4}) \right)$

4 A person has certain no. of apples. He gives half the no of apples and half an apple to another person. Repeat the process for 7 persons. At the end, he has no apples. Find the no of apples in the beginning.

Ans. 127

4. Product of prime nos between 1 20

5. There are 9 coins. One of nine is less weighted and others have equal weights. Find the minimum no of balances to find the defective coin.

Ans→2

6. 2 trains travel opp to each other at 60 Km/hr. When they are 18 Km apart a fly starts flying at 18 Km/hr from one train to another. Distance traveled by the fly when both trains collide is -----

Ans-→12 kms

7. Average score of a batsman is 15. If he scores 23 in an innings, the average is 16. What should he score to get an average of 18.

Ans- 39

e-INTERVIEW

8. In a village, there is flood. In one village casualties were less than the other. Why?

Ans : There were better health care centres(HCC).(any valid **Answer** of your choice is possible)

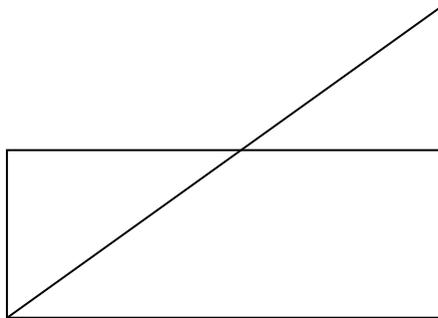
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10. I was married 10 years ago, my wife was the sixth member of the family. Now I have one baby and today my father is died. The average age of my family before and now is the same. What is my father's age (i)when he died. (ii)when I was married

11. A question on Pythagoras Theorem. There are 2 parallel streets in North-South direction. A lives in street 1.B lives in street 2. A goes 10 km North and B goes South 8 kms to meet the East-West road. A moves 4 km east and B moves 6 km West to meet each other. Find the distance between A and B'S houses. **Ans**. 20



13. 1000 doors. I man opens all

II man closes all multiples of 2

III man opens all multiples of 3

IV man closes all multiples of 4

How many doors are open?

For Placement



INTERVIEW

13. Rs. 5 - 20g ,Rs.2, Re.1, 50p, 10p and 5p have corresponding weights. For 196.5 gm, what is the min no. of coins required to make this weight.

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15. 2,3,5,7. Find all possible 4 digit nos divisible by 4.

Ans. 8

16. In a bus, there are 40 seats. The money collected from the passengers sum up to Rs.70.37.... Find the total no of vacant seats.

Options 9 11 13

17. (Train didn't stop at Calcutta)Distance between Mumbai and Calcutta is 25000 kms.Calculate the average speed from Mumbai to Calcutta .(i)The time taken to travel from Mumbai to Calcutta is 25 hrs.(ii)Speed during return journey was 150 km/hr.(iii)Speed during the forward journey is 100 km.Mark (a) if it can be answered using each of the statements Mark (b)if it can be answered using two statements. Mark(c)If it can be answered using none of them.Mark(d)If it can't be answered using any of them.

Ans--→(b)

18. $m < n$ & xy Which of the foll data is false?

Ans : $x-m < y-n$

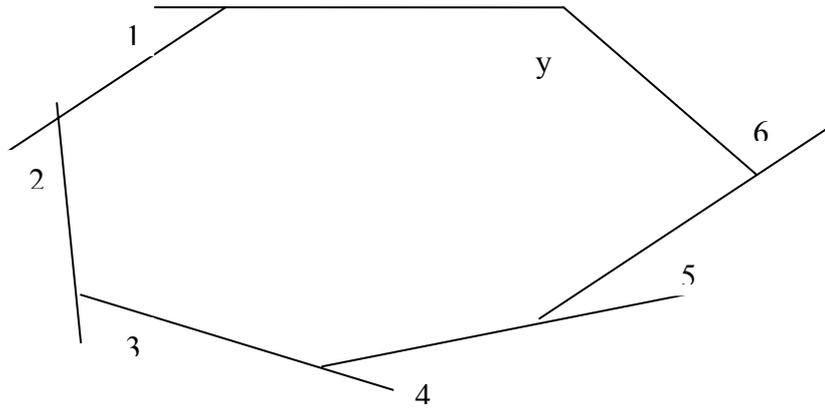
19. A person has Rs.100. If he wins he gains 10%. If he loses the game, he loses 10%. He wins twice and loses twice. How much he has at the end?

Ans: Always less than 100.

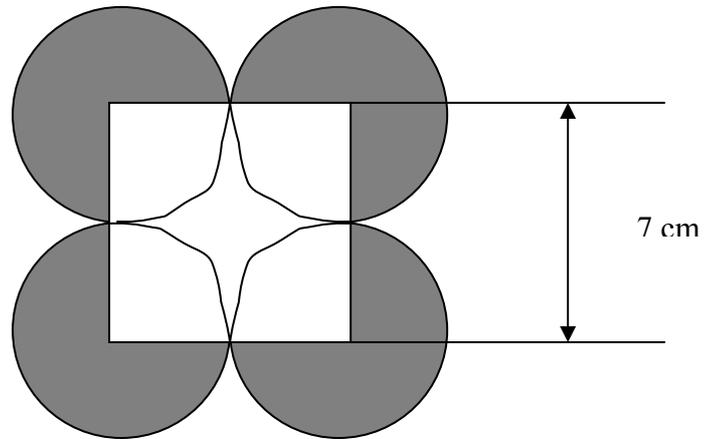
20. (diagram given below)

Ans-→120 degrees

For Placement



21.



Area of Shaded portion is ? (4 equal circles are drawn at the vertices of the square as its center)

Ans : 115.5

e-INTERVIEW

22) 4 men can cross a bridge in 3, 7, 13, 17 mins. only 2 can cross the bridge at a time. The time taken by the two to cross the bridge is equal to the time taken by the slowest person of the two. Find the minimum time for all of them to cross the bridge.

Ans → 41

23) a man gets x/y of Rs. 10 and y/x of Rs. 10. He gives out Rs. 20.

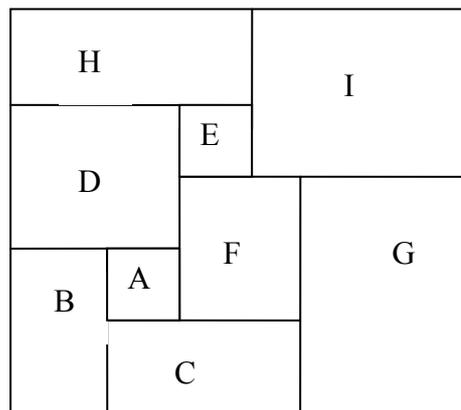
choices

- 1) he loses always
- 2) he can't always lose
- 3) he may or mayn't lose.

24) Petrol prices increased by 40%. Expected hike in taxi and auto charges. So people may use public transport systems. What do you infer?

25) A, B, C, D, E, F, G, H, I are all squares which are combined in a square. Area of B is 81 sq. cm. Side of A is 1 cm. Find the area of I?

Ans → 364 sq. cm



26) There are four no's 5, 8, 2, 1. Form four four digit no's as A, B, C, D and find the sum?

For Placement

e-INTERVIEW

27) 3 birds cross a point at the same instant with equal speed. Two of the birds fly exactly in opposite directions. After they cross the point at any instant of time the 3 birds are joined by straight lines to form a triangle. The nature of the triangle is

(1) isosceles (2) Equilateral (3) Right angled (4) Right angled isosceles

Ans---→(1)

28) There are no of Urns and no of Balls. If three balls are placed in each Urn then 3 balls are left. If 4 balls are placed in each urn then 1 urn is left. What is the total no of balls.

a) 12 b) 18 c) 21 d) none of these

Ans--→d(may be)

29) There are no of houses on both sides of a road. On one side houses are numbered in increasing order (1, 2, 3, ...). On other side houses are numbered in decreasing order. If house no 10 is opposite to house no 23, find the no of houses (even no of house are provided)

Ans-----→32

30) In the combination of 2, 3, 6, 7 how many possible combinations are divisible by 4.

Ans--→8

31) No of terms between 1 and 999 not divisible by 8 or 12.

Ans--→793

32) There are 1997 doors in a cave. 1997 people came out from each door. One door is closed. That many people came out from each door. This continues till a single person comes out of a single open door. Find the no of people in the cave.

33) There are 4 teams A, B, C, D, playing a game. If any one team loses it will pay twice the money to all other teams. They play 3 games. B, C, D loses one game each in the order. Finally A and B have Rs. 40 each and C has Rs. 80 and D has Rs. 16.

For Placement

e-INTERVIEW

1) Which team has started with minimum money.

i) A ii) B iii) C iv) D

2) Which team has started with maximum money

i) A ii) B iii) C iv) D

Verbal

34). In A tribal group two groups live in different climatic conditions. Ear Sensitivity is tested and found that one has more when compared to other. What is the reason.

Ans. Depends on the physical place and condition he is living.

35) In 1996, the income after tax deduction of upper classes increases by 3% than in 1995

1) no of upper class population increases.

2) no of upper class population decreases.

36) A question on Eco System

inference: Food energy in the eco system depends on the type of population.

1) Product of Prime Numbers between 1 and 20.

Ans: 9699690

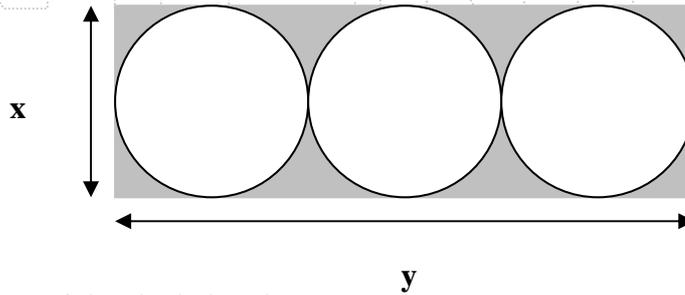
2) Number of terms between 1 and 999 not divisible by 8 or 12.

Ans: 793

3) There are number of houses on both sides of a road. On one side, houses are numbered in increasing order and on the other, in decreasing order. The opposite house no. of house number 10 is 23. Find the number of houses. (Even no. of houses r given).

Ans: 32

4)



What is the area of the shaded region?

Ans: $3x^2(1-\pi/4)$.

5) An apple seller is having some apples. He is selling half of the apples he has + half an apple to the first customer. The same way he sells the remaining apples to 7 customers. After selling to 7 customers, he has no more apples. Find the total number of apples.

Ans: 127

6) In the possible of combinations of 2,3,6,7 how many numbers are divisible by 4.

Ans: 8

7) If xy and nm , which of the following data is false? (4 options were given)

Ans: $x-m < y-n$.

8) There are number of urns and number of balls. If 3 balls are placed in each urn, then 3 balls are left. If 4 balls are placed in each urn then 1 ball is left. What is the total number of balls? a) 12 b) 18 c) 21 d) None of these.

Ans: d (Correct Answer – 9 balls and 2 urns).

9) There are 1997 doors in the cave. 1997 people came out from each door. One door is closed. The remaining people come out from each door. This continues till a single person comes out of a single door. Find the number of people inside the cave.

Ans: $2656678995 (1997 * 1998 * 3995 / 6)$

Questions 10-11:

There are 4 teams A, B, C, D playing a game. If 1 team loses, it will pay twice the money to all other teams. They play 3 games, B, C, D lose 1 game each in the order. Finally A & B have Rs. 40 each & C has Rs. 80 and D has Rs. 16.

10) Which team has started with minimum money?

a) A b) B c) C d) D

11) Which team has started with maximum money?

a) A b) B c) C d) D

12) Two trains are traveling at a speed of 60 km/hr on the same track towards each other. When the distance between them is 18 km, a fly starts flying between them at a speed of 80 km/hr. Find the travelling path distance of the fly up to the point when it is going to get crushed by the two trains?

Ans: 12km

@-INTERVIEW

13) A batsman gets out for 23 runs in an innings which increases his average from 15 to 16. What must have been his innings score to reach an average of 18?

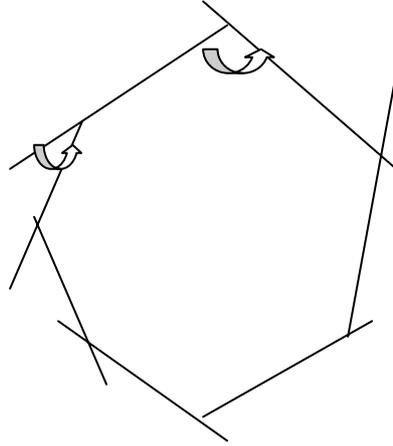
Ans: 39

14) There are four numbers as 5, 8, 2, 1. Form 4, four digit numbers A, B, C, D and find their sum?

15)

?

80°



Ans: 120°

16) Death rate in a village (drought ridden) decreases. Naidu Government claims it is because of free health camps. This question is valid when

Ans: (i) the water supply tanks were built supplying clean water.

17) In 1996, the income after tax deduction of upper class increases by 3% than in 1995.

(i) Number of upper class population increases

(ii) Number of upper class population decreases

18) A man gets x/y of Rs. 10 and y/x of Rs. 10. He gives out Rs. 20.

(i) He loses always (ii) Cannot always lose (iii) May or may not lose.

19) Petrol price increased by 40% which results in a hike in taxi and auto charges. So people may use public transport systems. What do you infer?

20) All people use a bus paid equally. 40 seats are there in the bus. Bus charge is Rs. 70.37. How many seats were left unfilled?

21) 4 men can cross a bridge in 3, 7, 13, 17 minutes. Only two can cross the bridge at a time. The time taken by the two to cross the bridge is equal to the time taken by the slowest person of the two. Find the minimum time for all of them to cross the bridge

Ans: 41 minutes

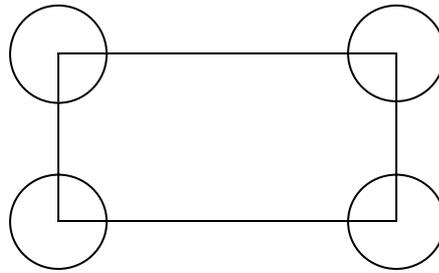
For Placement

22) Totally there are 1000 doors. First man opens all the doors, Second man closes the doors that are multiples of 2, Third man opens the doors that are multiples of 3, Fourth man closes the doors that are multiples of 4, How many doors are open now?

23) I was married 10 years ago. My wife was the sixth member of my family, now I have a baby and today my father died. The average age of my family is same as it was 10 years ago. Find my father's age when I was married.

Ans: 60 years

24)



Side of the square is 7 cms. 4 equal circles are drawn at the vertices of the square as its centre. Find the area of the circle lying outside the square?

Ans: Indeterminate.

25) It takes 5 minutes to pass a rumor from one person to 2 other persons. The tree of rumor continues. Find how many minutes does it take to spread the rumor to 768 persons.

1) $47\frac{1}{2}$ 2) 50 3) 5000 4) 500

Ans: 50

26) There are 9 coins. One of the 9 coins is less in weight and others have equal weights. Find the minimum number of balances to find the defective coin?

Ans: 2

27) The distance between Mumbai and Calcutta is 2500 Kms. Train didn't stop at Calcutta. Calculate the average speed for the following cases:

1) It took 25 hours to reach Calcutta from Mumbai

2) Speed during the return journey was 150 km/hr

3) Speed during the forward journey is 100 km/hr

Mark (a), if it can be answered using each of the given above. Mark (b) if it can be answered using two of them. Mark (c) if it can be answered using none of them. Mark (d) if none of them is required to answer

Ans: (b)

28) Three birds cross a point at the same instant with equal speed. Two of the birds fly exactly in opposite direction. After they cross the point at any instant of time the three birds are joined by straight lines to form a triangle. The nature of the triangle is

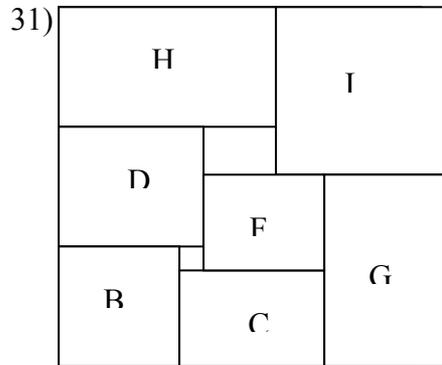
(1) Isosceles (2) Equilateral (3) Right angled (4) Right angled isosceles

Ans: (1)

29) Question on Eco-system (A system formed by the interaction of a community of organisms with their physical environment) inference: food energy in the eco system depends on the type of population.

30) There are two parallel streets in North-South direction. A lives in street 1, B lives in street 2, A goes 10 km north and B goes 8km south to meet the east-west road. A moves 4 km. east and B moves 6 km. west to meet each other. Find the distance between houses owned by A and B.

Ans: Use Pythagorus



A, B, C, D, E, F, G, H, I are all squares which are combined in a square. Area of B is 81cm^2 . Side of A is 1 cm. Then find area of I.

Ans: 364 cm^2

e-INTERVIEW

CTS 2003 – Anna University. June 2, 2003

Admitted branched: B.E. CSE,ECE, B.Tech ELECTRONICS ,M.C.A, B.Tech I.T.(Dual Degree)

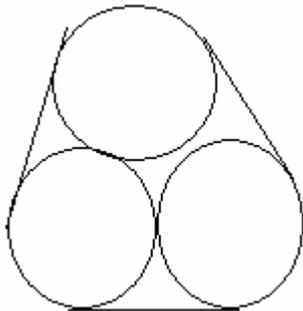
Appeared students: 456

Short listed for intvw : 188

Aptitude test: 60?s Time 1 hr

Booklet color : Blue

1)



Diameter of circle is d , Find length of string.(outer string that covers the circle)

Ans: $d(\pi + 3)$

2) Diamond's value is proportional to its weight². When the diamond broke into pieces in ratio 1:2:3:4:5. Total loss in value is 85,000. What is the value of the diamond twice the wt of the original diamond.

Ans : 45,000

3) Person X join a job at 20 yrs. First 3 years sal =10,000 p.a. Afterwards every year inc of 2,000 per year for 10 year. Then sal become const till retirement. at retirement avg sal is 25,000. (thro'out career) what age he retires.?

4) In an island there are r tribals who speak lang of atmost 4 words. Lang consists of 4 alphabets. How many words can be formed in that language? **Ans** 340

5) It was found that the cause for the malaria was the swamp marsh and so are swamps were drained. Mosquito the real cause for malaria due to lack of breeding grounds (Swamps) also was wiped out. What does this illustrate?

(Ans : (Possible) when many conditions form a result eradication of one cause also eradicates the result)

For Placement

6) An officer kept files on his table at various times in the order 1,2,3,4,5,6. Typist can take file from top whenever she has time and type it. What order she can't type?
 (Ans : 4,5,6,2,3,1)

7) A and B are fighting. B fires 3 times as many missiles as A. Total hits: total misses = 1/7. B's misses = 357. B's hits - A's hits = 66. A's hits?

8) 40 shots taken. 50p for a hit. 10p for a miss. (he has to give). Finally he has Rs.5. How many hits? **Ans** 15

9) Find avg of a,b,c,d,e. Given data : avg of any 4 num = avg of any 3 num $2(a+b)^2 = 36$ Which of the abv are sufficient?

10) What is the difference in times btwn clk 1 & clk2.
 1) both show same time 6 hrs back 2) 1 clk gains 1 min an hr, clk2 gains 2 min an hour. Like abv....

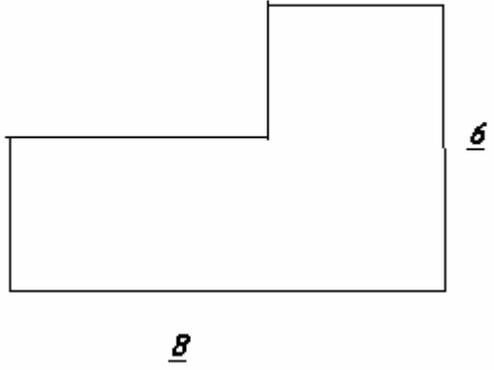
11) A takes 9 strides to B's 7 strides. A stride = 1 meter. B stride = 1.2m B gets the start of 24m. What dist should A travel to overtake B?

12) Tortoise gets 100 m head start. Hare is 10 times faster as tort. What is the dist traveled by hare to catch up tort.?

13) 4 weights are weighed in pairs. Weights of pairs are determined 103,105,106,106,107,109 What is the min wt?
Ans 51

14) Constant cost = 300 and 1.75 / copy. How many copies should he sell at 7.75 /copy to make a profit.

15)

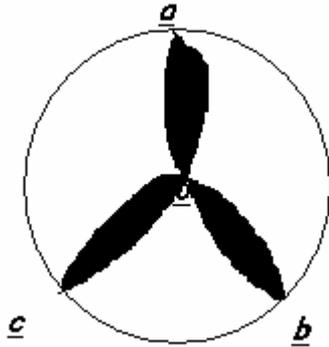


Find the perimeter ? **Ans** 28

16) 20 members avg = 10.5. 3 memb of 11.5,12.5,13.5 left and 3 memb of 10.5,12.5,14.5 joined along with a teacher of 21 yr. Now avg = ... **Ans** 11.

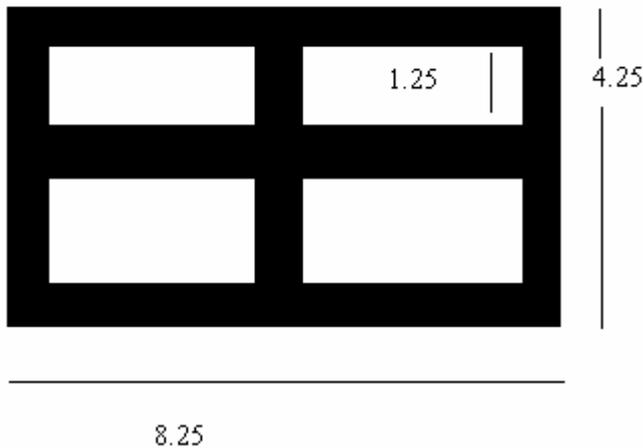
e-INTERVIEW

17)



Find the area of shaded. Radius of circle = 1 cm.....Arcs r drawn with center at circumference.

18)



Find the area of the shaded portion?

19) Solid cube of $6 * 6 * 6$. This cube is cut into to 216 small cubes.($1 * 1 * 1$).the big cube is painted in all its faces. Then how many of cubes are painted at least 2 sides. (**Ans** 56)

20) A Bacteria is doubling at every 4 min. After 40 min 1024 bact. Then 256 when.....? **Ans** : 32 min

21) A bag contains 3 balls of 11 different colors each. Find the min no of chances to find at least 3 balls of same color?

Ans : 23

For Placement

e-INTERVIEW

- 22) If $x^2 < 4$ then $100/x$ is....? **Ans** : $100/x > 50$ & $100/x < -50$.
- 23) If $[x]$ is the int less than x and $|x|$ is the abs val of x . Then max of $[x]/|x|$ is **Ans**
d) none
- 24) A work in 12 days b in 15 days. Find the no of days if they work on alternate days. **Ans** $13 \frac{1}{4}$
- 25) A,B,C r positive int. Out of them 2 r odd. Then $5^{2a} + (b-5)^3 (c-3)^2 = ?$
Ans : always odd.
- 26) A squarer side is 5cm. If a square of side 10cm is hinged @ the center of the prev square. when they r rotated common area to both squares (**Ans** : Does not change)
- 27) $3p^2 + pq + 5q^2$ is even. If
a) If p is odd, q is odd
b) If p is even, q is odd
c) If p is odd ,p is even
d) Atleast one of p and q is odd.
Ans : 4) None of these
- 28) A lady has to feed a dog for the one week from Monday to Sunday .She has food types M,N,O,P,Q,R,S .
MNOP \rightarrow protein enriched RS \rightarrow vitamin enriched. Vitamin enriched cannot be fed on consecutive days.
Conditions given : M should be fed before S.
M should be fed before Q.
R Should be fed before S.
Before N and Q there should be four types.
Based on this 3 ?s are asked. All r easy to **Answer**...
- 29) A man bought at the cost of 5 plums a rupee and 2 oranges a rupee. He sells 10 plums and 6 oranges at the selling price of 4 plums a rupee and 3 oranges a rupee. What is his gain or loss? **Ans** loss of 50p.
- 30) Out of 32 books the cost of 10 books is Rs. 50 each and he got a profit of 4%. He sells 15 books at a profit of 3.8461% on the selling price of Rs 70. The remaining cost is 576. The remaining books are sold at Rs 74. What is his total profit.
- 31) Two solutions have milk & water in the ratio 7:5 and 6:11. Find the proportion in which these two solutions should be mixed so that the resulting solution has 1 part milk and 2 parts water?
a) 35:3 b) 21:36 c) not possible **Ans** : c

For Placement

1) A bus has 40 seats and the passengers agree to share the total bus fare among themselves equally. If the total fair is 80.67, find the total no of the seats unoccupied.

2) A 4 digit no may consist of the digits 6,2,7,5 where none of the nos are repeated. Find the possible no of combinations divisible by 36?

3) if u r traveling from Mumbai to banglore and return back .To find the speed of the car which of the following r needed.

a) the distance between them.

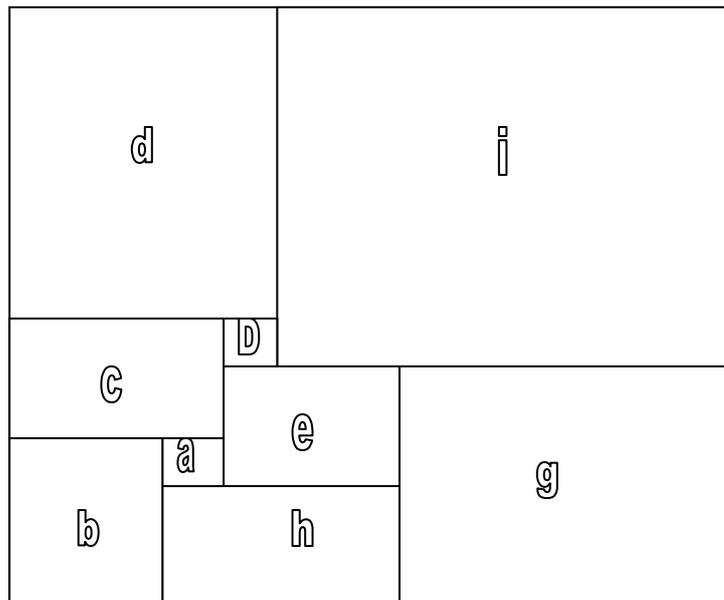
b) time taken

c) avg speed towards Mumbai and the avg speed towards banglore.

Choices:

1) a only. 2) a and b 3) a,b,c 4) b only 5) c only (**Ans** not in order)

4)



(Diagram drawn approximate not to scale.) if all the blocks are squares and the complete fig is also a square and the area of the a is 1 cm^2 , $b=81 \text{ cm}^2$ what is the area of i?

5) A secret can be told only 2 persons in 5 minutes .the same person tells to 2 more persons and so on . How long will take to tell it to 768 persons ?

a) 47.5 min b) 50 min c) 500 min d).... **Ans:** 47.5 min

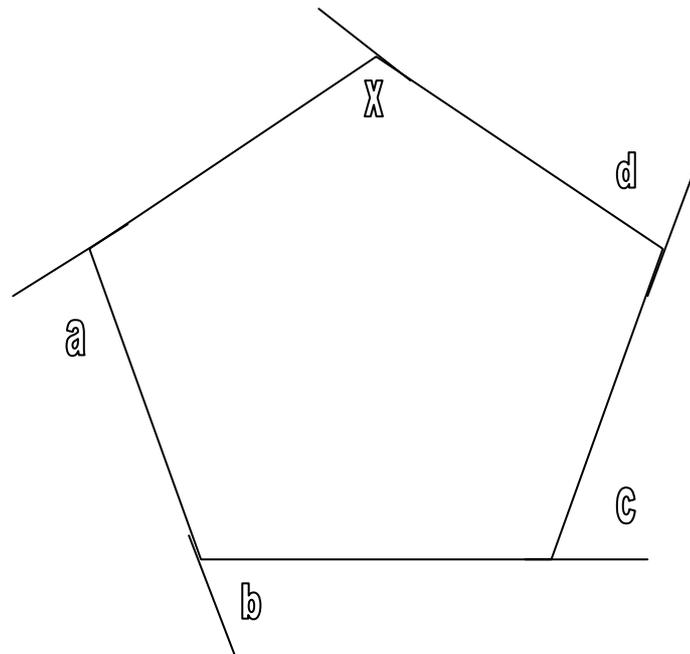


INTERVIEW

6) Three birds cross a point in a same st. line and of that 2 fly in opposite directions. If a triangle is formed with the position of the birds what kind of the triangle will be formed?

a) isosceles b) right angle c) equilateral d) right angle and isosceles.

7)



when the angle a, b, c, d are given find x.

8) One question is given for explaining the working of cornea (in eyes) & the window

Ans: drawing analogy

9) $m < n$, & $x < y$ which of the following is definitely false

a) $m - n < x - y$ b) $m + n < x + y$ c) & d) Similar options using all 4 variables

10) Four circles are drawn from the corners of a square of area 49 cm^2 . Find the area of 4 circles outside the square (they didn't mention that circles have radius = $1/2$ side of a square)

Ans: intermediate

11) In a pond ecosystem, large fishes and small fishes will be there. If we want to remove small amount of pollutants, small fishes are to be employed. In a food-chain food passes through a number of mouths and en route the mouth of the superfeeder - the eagle. The size of the ecosystem is determined by its population. But this has been proved false. What can you infer from above?

For Placement

12) In Bangalore, during income tax deduction for a single person, the percentage increased by 3% and for middle house-holders, it decreased by 3%. What can you infer?

13) In China, Mao-Tse -Tung was responsible for organizing its people and taking China into success path. It evolved into a great economic power by improved industrial and economical statistics. China prospered in those years, but _____

14) A ridge formed over Pacific Ocean was because of the intersection of two volcanoes. But in history it was written that it was not due to those volcanoes. It proves a contradictory to form the view that history will be proved wrong in the future.

Inference?

15) In a poultry form because of cloning, a large breed of hens were produced. This increased the production but the maintenance was very difficult because of the large number. This does not mean that cloning is a disaster in the scientific world but it is a tool which in some ways is constructive but in other ways, it is destructive. Inference?

16) A seller has a set of apples out of which he sells one half of it and half an apple to his first customer. Then he sells half of the remaining apples and a half apple to his second customer. Then he sells half of the remaining apple and $\frac{1}{2}$ apple to his third customer and so on. This repeats upto 7th customer and no more apples are remaining. Find the total no of apples he had.

17) A hollow cube of size 5cm is taken, with the thickness of 1cm. It is made of smaller cubes of size 1cm. If the outer surface of the cube is painted how many faces of the smaller cubes remain unpainted?

18) If a 36 cm thread is used to wrap a book, lengthwise twice and breadthwise once, what is the size of the book?

19) The various degrees of the vertices are marked in the dig. Find y.

20) If 4 circles of equal radius are drawn with vertices of a square as the centre, the side of the square being 7 cm, find the area of the circles outside the square?

21) Find out the distinct numbers that can be formed by 2, 3, 7, 6 (don't now exactly) that should be divided by 4?

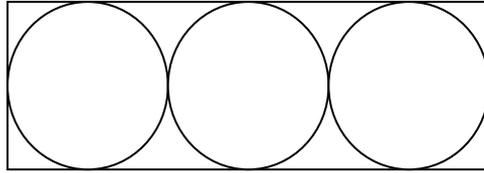
22) Two trains at speed 60 km/hr comes in the opposite direction. At a particular time the distance between the two trains is 18km. A shuttle flies between the trains at the speed of 80 km/hr. At the time the two trains crashes what is the distance traveled by shuttle?

e-INTERVIEW

23) There are n urns and m balls. If we put 3 balls in each urn 3 balls will be excess. If we put 4 balls in each urn 1 urn will be excess. Find no. of Urns (or) Balls?

24) Find the area not occupied by circles:

Given length = y breadth = x (Answer: $3x^2(1-\pi/4)$)



25) A man gets x/y of Rs.10 and y/x of Rs.10. He returns Rs.20. The **Answer** choices are

- He may not lose
- He may lose
- He always loses
- Cannot be Determined

26) Three men A,B,C can complete a work separately in some specified days(may be 6,7,8). If they do the work together by alternate days. Then how many days need to complete the work?

27) Four Members A,B,C,D are playing a game. A person losing a game should double the amount of others. B,C,D are losing in order after three games. The amount after 3 games are A&B having 40, D is having 16 & C 80.

Each question carries one mark:

a) who started with small amount of money?

Ans) A

28) who started with greatest amount of money?

Ans) B

29) what amount did B have?

Ans) 93

Hint: I solved and found the answers to be A-5, B-93

30) There are some houses in a street back to back. And the house behind 10 was 23. How many houses in the street?

Ans) 32

For Placement

e-INTERVIEW

31) There are 1997 doors in an auditorium and as many people as the number of doors open enter the auditorium. A door was closed and as many people as the number of doors open leave the auditorium. The process was repeated till the number of doors is equal to 1. Find the total number of people who enter the auditorium?

32) A batsman's average was 15. At the last innings he took 23 runs and his average became 16. How many runs should he take to make his average 18?

33) Find the number $WXYZ$ divisible by 36?

i) Let the digits be 5, 4, 3, 6 – not in that order

ii) Sum of last two digits is 9

iii) Sum of middle two digits is 7

-if one is sufficient then **Ans** as A || if two is sufficient then **Ans** as B || if all are necessary then **Ans** as C || if nothing is needed then **Ans** as D

34) X and Y live in a North-South parallel street. X travels 10 km towards North to reach the east-west street. Y travels 6 km towards South to reach the east-west street. X travels now 4 km towards East and Y travels 8 km towards West and they meet each other. What is the distance between X and Y?

35) The houses are numbered 1, 2, 3, ... and reach the end of the street and backtrack towards the starting point. The house numbered 10 is opposite to 23. There are even no. of houses. Find the total no. of houses.

For Placement

e-INTERVIEW

Question paper:

Questions

1. To merry = Enjoy
2. To Alienate = abandon
3. To Solicit = Humble
4. To Heep = to gather
5. Cargo = load, luggage
6. Momentary = for small time
7. Volume = quantity
8. To Veer =
9. To Admonish =
10. To Meager = small, little
11. To latitude,
12. Latent =
13. To Covet = To desire
14. To Discretion =
15. Potential = ability
16. To Emancipate,
17. To Wethargy,
18. To Concur = similiar
19. To Confiscate = To take charge, to annex
20. To Dispel =
21. Baffle = puzzle
22. Subsidise =
23. Misery =
24. Pretentrous =
25. Tranquil = calm, silent
26. Ellace
28. Rinaile,
29. Obstinate
30. Hover
31. Caprice,
33. Belate = after time
34. Brim = edge
35. Divulge,
36. Lamont,
37. Bileaf,
38. Embrace =
39. Adhesive =
40. Miserable =

For Placement

e-INTERVIEW

TCS

SECTION 1 INTURN CONSISTS OF THREE PARTS.

PART 1

VERBAL---

IT CONSISTS OF 40 WORDS WHICH HAS 5 MULTIPLE ANSWERS FOR THEM.THE MAIN WORDS WHICH I REMEMBER ARE AS FOLLOWS FOR WHICH

YOU SHOULD LEARN THE SYNONYMS OF THESE---

SECTION 1 PART B 20MIN 30 marks 15 QUANTITATIVE.

THESE ARE SOME PROBLEMS :

- 1.) two pencils cost 8 cents. then 5 pencils cost?
(20 cents)
2. A work is done by the people in 24 minutes. One of them can do this work alone in 40 minutes. How much time to do the same work for the second person?
(60 minutes)
3. A car is filled with four and half gallons of fuel for a round trip. Fuel is taken $\frac{1}{4}$ more in going then coming. What is the fuel consumed in coming up? (2 gallons)
4. Low temperature at the night in a city is $\frac{1}{3}$ more than $\frac{1}{2}$ high as higher temperature in a day. Sum of the low tem. And highest temp. is 100 degrees. Then what is the low temp? (40 deg.)
5. A person, who decided to go to weekened trip should not exceed 8 hours driving in a day. Average speed of forward journey is 40 m/h. Due to traffic in sundays, the return journey average speed is 30 m/h. How far he can select a picnic spot?
 - a) 120 miles
 - b) between 120 and 140 miles
 - c) 160 miles

Ans: 120 miles
6. A salesperson multiplied a number and get the *Answer* 3, instead of that number divided by 3. what is the *Answer* he actually has to get?
 $1 \times 3 = 3$ so number = 1 divided by 3, the *Ans.* is $\frac{1}{3}$.
7. A ship started from port and moving with I miles per hour and another ship started from L and moving with H miles per hour. At which place these two ships meet?
(between I and J, nearer to J)
|----|----|----|----|----|
port G H I J K L
8. A building with height D shadow upto G. A neighbour building with what height shadows C feet. (height = B ft)
|----|----|----|----|----|
A B C D E F G H
9. A person was fined for exceeding the speed limit by 10 mph. Another person was also fined for exceeding the same speed limit by twice the same. If the second person was travelling at a speed of 35 mph, find the speed limit. (15 mph)
10. A bus started from bustand at 8.00am, and after 30 minutes staying at destination, it returned back to the busstand. The destination is 27 miles from the busstand. The speed of the bus is 18mph. In return journey bus travels with 50% fast speed. At what time it returns to the busstand? (11.00am).

For Placement

11. In a mixture, R is 2 parts, S is 1 part. In order to make S to 25% of the mixture, how much R is to be added? (one part of R)
12. wind flows 160 miles in 330 min, for 80 miles how much time required.
13. with $\frac{4}{5}$ full tank vehicle travels 12 miles, with $\frac{1}{3}$ full tank how much distance travels (5 miles)
14. two trees are there. one grows at $\frac{3}{5}$ of the other in 4 years, total growth of trees is 8 ft. what growth will smaller tree will have in 2 years (< 2 ft.)
15. A storm will move with a velocity of towards the centre in hours, At the same rate how much far will it move in hrs.
(but the *Answer* is $\frac{8}{3}$ or $2\frac{2}{3}$)

SECTION-1 PART-3 marks-50 questions-50 30 min

CRITICAL REASONING

1. My father has no brothers. he has three sisters who has two children each. My grandfather has sons.
 - a) my grandfather has two sons (false)
 - b) three of my aunts have two sons (can't say)
 - c) my father is only child to his father (false)
 - d) i have six cousins from my mother side (can't say)
 - e) i have one uncle (false)
2. Ether injected into gallbladder to dissolve gallstones. this type of one day treatment is enough for gallstones not for calcium stones. this method is alternative to surgery for millions of people who are suffering from this disease.
 - a) calcium stones can be cured in one day (false)
 - b) hundreds of people contain calcium stones (can't say)
 - c) surgery is the only treatment to calcium stones (true)
 - d) Ether will be injected into the gallbladder to cure the cholesterol based gall stones (true)
3. Hacking is illegal entry into other computer. this is done mostly because of lack of knowledge of computer networking with networks one machine can access to another machine. hacking goes about without knowing that each network is accredited to use network facility.
 - a) Hacking people never break the code of the company which they work for (can't say)
 - b) Hacking is the only vulnerability of the computers for the usage of the data. (false)
 - c) Hacking is done mostly due to the lack of computer knowledge. (false)
(there will be some more questions in this one)
4. Alpine tunnels are closed tunnels. in the past 30 years not even a single accident has been recorded for there is one accident in the rail road system. even in case of a fire accident it is possible to shift the passengers into adjacent wagons and even the living fire can be detected and extinguished within the duration of 30 min.
 - a) no accident can occur in the closed tunnels (false)
 - b) fire is allowed to live for 30 min. (false)
 - c) all the cars that travel in the tunnels will be carried by rail shuttles. (true)
5. In the past helicopters are forced to ground or crash because of the formation of the ice on the rotors and engines. A new electronic device has been developed which can detect the water content in the atmosphere and warns the pilot if the temp. is below freezing temp. about the formation of the ice on the rotors and wings.
 - a) the electronic device can avoid formation of the ice on the wings (false)
 - b) there will be the malfunction of rotor & engine because of formation of ice (true)

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- c) the helicopters are to be crashed or down (true)
d) there is only one device that warn about the formation of ice. (true)
6. In the survey conducted in mumbai out of 63 newly married house wives not a single house wife felt that the husbands should take equal part in the household work as they felt they loose their power over their husbands. inspite of their careers they opt to do the kitchen work themselves after coming back to home. the wives get half as much leisure time as the husbands get at the week ends.
a) housewives want the husbands to take part equally in the household(false)
b) wives have half as much leisure time as the husbands have (false)
c) 39% of the men will work equally in the house in cleaning and washing(can'tsay)
7. In confucius days the technology development was less and it took weeks to communicate a message. wherein we can send it through satellite with in no time..... even with this fast developments it has become difficult to understand each other.
a) people were not intelligent during confucius days (false)
b) transport facilities are very much improved in now-a-days(true)
c) even with the fast developments of the technology we cannot live happily. (can't say)
d) we can understand the people very much with the development of communication. (false)
8. Senior manager in a big company said that new japanies company invades in India for transferring the cars from industrial and warned that jobs were under threat from japanies company. They stated that increasing competence would be coupled with an inevitable down term in car market and recent rise in interest rate which has already hit demand.
a) manager issue their warning after a rise in interest rate (true)
b) manager told workers that japanies workers are taking jobs away from indian workers (false)
c) manager said that more people want to buy new cars in future (false)
d) increasing rate of interest mean that japanies firm will create into operate in the country
9. Human existence is suspicious of arbitrary divide between concise and unconcise. The concise world invades shape activity of the unconcise, while many of great activity of humanity waking as whole or partially improved by dreams. Even it could be ignored that dreams precede exceptional such a dichotomy could not be drawn as the influence of dream on waking state would reamin unclear. But as yet no company rebuilt exists to record the substitute of prendtl dreaming.
a) sleepy can be creative state (true)
b) it is difficult to tell whether a sleeper is dream or not (true)
c) if we know what babies would dream about before they are born we could show that the concise and unconcise mind influence on one another
d) it is untrue claim that concise and unconcise world never impinge one another (true)
10. Any one who has has systematic exam phases will have perceived a profound although not a prolif of asymmetry whether or not the exception is volitions and self control of spontoneous appeal to predict facial as symmetry as does the type of emotion potrayed. position can not displace symmetric at left side regret of a negative emotion is more common posed statement negation emotions are likely to be symmetric representation and where as symmetric occurs relative left sided statement is more common.

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a) any angry person is more likely to have left sided statement than some one who has smiling (true)

b) an actor is likely to smile symmetric when acting (false)

c) delicious facial statement will always be as symmetrical

11. In the totalitarituran days, the words have very much dreviewued. In the present day, they are becoming domestic that is the words will be much more dreviewued. In that days, the words will be very much effected in political area. but at present, the words came very cheap, we can say they come free at cost.

a) totalitarian society words are dreviewued (true)

b) totalitarian will have to come much about words

c) the art totalitarian society the words are used for the political speeches (true)

12. There should be copyright for all arts. the rule has come that all the arts has come under one copy right society, they were use the money that come from the arts for the developments. There may be a lot of money will come from the Tagore works. we have to ask the benifiters from Tagore work to help for the development of his works.

a) Tagore works are come under this copy right rule (false)

b) people gives to theater and collect the money for development(can't say)

c) people are free to go to the because of the copy right rule (can't say)

d) we have ask the Tagore residents to help for the developments of art. (can't say)

For Placement

20 QUESTIONS; 2 MARKS EACH TIME-20 MINUTES

1) ONE RECTANGULAR PLATE WITH LENGTH 8 INCHES, BREADTH 11 INCHES AND 2 INCHES THICKNESS IS THERE. WHAT IS THE LENGTH OF THE CIRCULAR ROD WITH DIAMETER 8 INCHES AND EQUAL TO VOLUME OF RECTANGULAR PLATE?

Ans: 3.5 INCHES

2) WHAT IS THE NUMBER OF ZEROS AT THE END OF THE PRODUCT OF THE NUMBERS FROM 1 TO 100

3) In some game 139 members have participated every time one fellow will get bye what is the number of matches to choose the champion to be held?

Ans: 138

4) One fast typist type some matter in 2hr and another slow typist type the same matter in 3hr. if both do combinely in how much time they will finish.

Ans: 1hr 12min

5) In 8*8 chess board what is the total number of squares refer odel

Ans: 204

6) Falling height is proportional to square of the time. one object falls 64cm in 2sec than in 6sec from how much height the object will fall.

7) Gavaskar average in first 50 innings was 50 . after the 51st innings his average was 51 how many runs he made in the 51st innings

8) 2 oranges, 3 bananas and 4 apples cost Rs. 15 . 3 oranges 2 bananas 1 apple costs Rs 10. what is the cost of 3 oranges, 3 bananas and 3 apples **Ans** Rs 15.

9) in 80 coins one coin is counterfiet what is minimum number of weighings to find out counterfiet coin

10) In a company 30% are supervisors and 40% employees are male if 60% of supervisors are male. what is the probability that a randomly chosen employee is a male or female?

11) statement: all green are blue are blue, all blue are white conclusion:

I) some blue are green II) some white are green

III) some green are not white IV) all white are blue

a) he has given four choices like gre type

12) all teachers are students. some students are girls. this type of questions are there. we cant able to reproduce them.

For Placement



INTERVIEW

Apptitude

- 1) 2 pencils cost 8 cents, then 5 pencils cost how much
a) 20c
- 2) A work is done by the people in 24 min. one of them can do this work alone in 40 min. how much time required to do the same work for the second person
a) 60min
- 3) A car is filled with four and half gallons of oil for full round trip. fuel is taken 1/4 gallons more in going than coming. what is the fuel consumed in coming up.
a) 2 gallons
- 4) low temperature at the night in a city is $\frac{1}{3}$ more than $\frac{1}{2}$ hinge as higher temperature in a day. sum of the low temp and high temp is 100 c. then what is the low temp.
a) 40 centigrade
- 5) A person who decided to go weekend trip should not exceed 8 hours driving in a day average speed of forward journey is 40 mph. due to traffic in sundays the return journey average speed is 30 mph. how far he can select a picnic spot.
a) 120 miles
- 6) A sales person multiplied a number and get the **Answer** is 3 instead of that number divided by 3. what is the **Answer** he actually has to get.
a) $\frac{1}{3}$
- 7) A ship started from a port and moving with I mph and another ship started from L and moving with H mph. at which place these two ships meet.
a) between I and J and close to J
- 8) a building with height D ft shadow upto G. A neighbour building with what height shadow C ft is
a) B ft
- 9) A person was fined for exceeding the speed limit by 10mph. another person was also fined for exceeding the same speed limit by twice the same if the second person was travelling at a speed of 35 mph. find the speed limit
a) 15mph
- 10) A bus started from bustand at 8.00am and after 30min staying at destination it returned back to the bustand. the destination is 27 miles from the bustand the speed of the bus 50percent fast speed at what time it returns to the bustand.
a) 11.00am
- 11) In a mixture, R is 2 parts, s is 1 part in order to make s to 25% of the mixture, how much r is to be added a) one part
- 12) Wind flows 160 miles in 330min. for 80 miles how much time required
a) ---
- 13) With $\frac{4}{5}$ full tank vehicle travels 12 miles, with $\frac{1}{3}$ full tank how much distance travels
a) 5 miles
- 14) 2 trees are there. one grows at $\frac{3}{5}$ of the other. In 4 years total growth of the trees is 8 ft. what growth will smaller tree will have in 2 years.
a) 2 ft
- 15) A storm will move with a velocity of --- towards the center in --- at the same rate how much far will it move in hrs
a) $\frac{8}{3}$ or $2\frac{2}{3}$

For Placement



Reasoning

INTERVIEW

A.

my father had no brothers but his 3 sisters are all married and each has 2 children.my grandfather has 2 sons.

- 1.mu father was an only child F
- 2.3 of my aunts have sons C
- 3.i have six cousins on my mother's side C
4. i have only one uncle F

B. Senior managers in a leading company said that new japanese investment in india was transforming the car industry and warned that jobs were under threat from japanese competition. they stated that increasing competition would be coupled with an in evitable downturn i the car market and the recent rise in interst rates which had already hit demand.5.some senior managers said that more people will want to buy new cars in the future. F 6.managers told workers that japanese workers are taking jobs away from indian workers in the car industry. F 7.the managers issued their warning after a rise in interest rates. T 8.the increased rate of the interest will mean that japanese firms will cease to operate in this country.

C.Researchers in mumbai have found that certain types of gallstones can be dissolved by injecting them with a gasoline additive in the form of ether the ether is injected through a tube directly into a tube directly into the gallbladder.the one day treatment works only on cholesterol-based stones.not those composed largely o calcium.however as the clolesterol stones are by far the most common typefor millions of gallstones sufferers the treatment should offer a welcome alternative to surgery the commonest option in nost hospitals.

- 9.injecting ether into the gallbladder dissolves most gallstones T
- 10.surgery is the only treatment for calcium stones T
- 11.hundreds of peoplecontains calcium stones C
- 12.calcium stones will be cured in one day F

D.Organising the home can be perceived as conferring power so large numbers of women are unwilling to let go of chores,even when they have careers.a survey found that,out of 65 new marriages not one single wife expected her husband to share work equally.according to the family policy studies center 81% working wives return home to do all th cooking.The average male has nearly half as much more tfree time at weekends than his wife and the typical new father spends just 37 seconds a day talking to his baby.

- . 13.Most working wives do not expect their husbands to share chores equally. T
- 14.the average wife has half as much free time at weekends as her husband. F
- 15.some women collude in the unequal distribution of house hold work because they want to retain control C
16. 39% of all men with working wives do the cooking and all the cleaning F

E.Confucius said that to know the future we have to understand the pasthis time transport ,communications and scientific knowledge were less developed than they are today.news took weeks to travel where as today satellite links connect the continents virtually instantaneously.but our technological advances in the field of communications seem not to have improved our capacity to understand one another

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17. in confucius daay people were more intelligent C
18. we understand each other better now than in confucius time because we can travel more quickly. F
19. we have made great improvements in trAnsport since confucius day T
20. none of our scientific discoveries has really improved our lives C

F. Words in totalitarian systems have an unhealthy importance and in such states now attempting to return to a more democratic normality there has been a natural inevitable and healthy dreviewuation of words whereas previouslu a single word used in a speech or even a play or poem could be a serious political event now the words come cheaper almost free. politics is politics again and poetry only poetry

21. totalitarian state dreviewue words T
22. only non-totalitarian regimes produce poetry of political importance T
23. writers under totalitarian regimes have to choose their words carefully T
24. the democratic political system is healthier than others C

G. Statistics show that millions of vehicals have been carried by shuttle over the past 30 years through alpine tunnels withouty one ever catching tire. in the alpine tunnels. drivers and passengers sit in theirvheicals on the shuttle trains. only one vehical has ever caught fire on the bussy french motorail equivalent system. this sort of accidents is not possible in a closed shuttle. assertinos that a vehical fire will lead to catastophe have no basis. since the resoures exit do detect, control and extinguish a fire and to remove any persons present safely to an adjoning wagon, leaving any surviving fire facing rapid extinction within a wagan built to contain fire for 30 minutes. catastrophe seems very unlikely.

25. If a car cauget fire in a rail shuttle, probably none would be killed. (T)
26. At least one vehical has caught fire in an alpine tunnel. (f)
27. If a fire started in a wagon, it would be allowed to burn itself out in 30 minutes. (f)
28. If would theoretically be possible for a car to cath fire in aclosed shuttle system. (F)

H) Every form of art is protected by copy write, upon the expiration of which the property passes into the public domain and becomes freely available to any one wishing to exploit it commercialy. the time has come when all treasures shoud pass to the controled of a trust, and by this made readily available to anyone on pament of a fee or royalty. the income from the works of tagore would alone be enarmous. these who now main financial benefit from his genius should make some contribution to the welfare of the arts in general.

29. Tagore's plays are not protected by copyright. F
30. tagore's decendants should be asked to make some contribution to the arts C
31. Instead of buying a ticket , theatregoers should pay a fee to trust for the benefit of the arts. C
32. More people could go to the theatre if copy rightwere abolished C

I. Hacking is a crime made possible by a relatively new technology, which one of the reasons it is often poorly understood and reported. Many computers, but no meAns all, are now linked together in networks which allow users on one computer to communicate with others on the same network. If a computer is not networked, no manipulation of its data from another machine is possible. So long as users are authorised, networking is just a way of making work easier and more productive. Hacking on the other hand, is the unauthorised use of networks or

unauthorised entity into the computers themselves. Most people do not need to break into the networks they use, since they are already accredited users.

33. Most hackers are authorised to break into networks F

34. Computers are only vulnerable to the unauthorised manipulation of their data via another computer if they are networked T

35. The main reason why it is relatively easy to break into a computer is that few people understand the technology. C

36. Hackers do not work for the firms whose networks they break into. T

J. Although invaders represent a threat to the conservation of flora and fauna, there are two special cases in which invasion have been deliberately brought about. One is the desire to control presents by natural predators, which may have to be brought in from other countries. The second is releasing organisms into the wild (or on to farms, from which they might escape) that are completely novel, because they have been genetically engineered. There is nothing intrinsically sinister about engineered organisms, but any novelty must be regarded as a potential invader.

37. Pest control does not threaten the conservation of flora and fauna. T

38. Genetically engineered organisms must always be regarded as potentially dangerous. F

39. Natural predators are more harmful than pests. T

40. Genetically engineered organisms escaped from the farm, they will pose a threat to wildlife. T

K. Electronics technology is coming to the rescue of helicopters which can be grounded or crash in icy conditions the machines are especially vulnerable to the build up of ice on both their rotors and engine air intake when operating in cold damp conditions. The problem is 2 fold ice increases the weight and the build up makes the aerofoils less efficient. Now at last a detector has been devised which the company hopes will mean safer flights and less frequent grounding. Unlike most devices in use at present it can detect the liquid water content of cloud above freezing level. So the warning is given before the potential hazard is encountered.

39. An electronic device has been invented which will prevent the build up of ice on helicopter rotors F

40. Helicopters are sometimes grounded because in cold damp weather their engine air intakes and rotors malfunction owing to the formation of ice. T

41. Only one device can at present detect the liquid water content of cloud above freezing level C

42. In future fewer helicopters will crash or have to be grounded T

L. Anyone who has systematically examined faces will have perceived a preponderance although not a proliferation of asymmetry. Whether or not the statement is volitional and self controlled or spontaneous appears to predict facial asymmetry as does the type of emotion portrayed. Positive emotions are usually displayed symmetrically although a left sided representation of a negative emotion is more common. Posed statements and negative emotions are less likely to be symmetrically represented.

43. An angry person is more likely to have a lopsided statement than someone who is smiling T

44. A deliberately assumed facial expression will always be asymmetrical F

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45. An actor is likely to smile symmetrically when acting C
46. More self-conscious people are likely to have less asymmetrically facial statements than those who are less aware of themselves T

M. Human existence is not susceptible of arbitrary division between consciousness and unconsciousness. the conscious world invades and shapes the activities of the unconscious while many of the great achievements of humanity's waking hours were wholly or partly inspired by dreams. even if it could be argued that dreams precede experience such a dichotomy could not be drawn as the influence of dreaming on the waking state would remain unclear but as yet no common vocabulary exists to record the substance of prenatal dreaming

47. Sleep can be a creative state. T
48. It is difficult to tell whether a sleeper is dreaming or not C
49. If we knew what babies dream about before they are born we could show that conscious and unconscious mind influence one another F
50. It is untrue to claim that the conscious and unconscious worlds never impinge on one another F

New twenty questions

N. Disease X succeeds lung disease. it may also occur healthy persons the person looks healthier from outside. the number of red blood cells in the blood increased and this leads to thickness of the blood as a result of which blood lacks inside the vessels. the person suffers heart attack. one possible solution is to remove a litre of blood or to control the growth of red blood cells.

53. Lung disease precedes the disease X T
54. A person who gets heart attack always has disease X F
55. People suffering from disease X look healthier C
56. One litre of blood must be removed to cure this T

O. A starfire engine has been designed to work only for unleaded petrol. this crossfire engine is designed for both 1500 and 1800 cc they internally and externally look alike except for the difference in wheels ---, 2000 cc is different from the above. two in terms of 3 features --- ----- ---- on the bumper.

57. The engine runs only on the leaded petrol F
58. 1500 and 1800 cc look alike F
59. Apart from cross fire engines they manufacture ---- F
60. Internal structure of the 2000cc is same as that of both 1500 and 1800 cc C

P. A weed killer to kill the weeds has been developed. the weed killer solution has to be applied to the growing tips. It need not to be applied to all the tips. the solution has to be prepared in a can in one hand and the plants are taken in the other hand with a glove and are immersed in the solution if we cannot immerse them in the solution the solution can be applied to the roots with a brush. it used without care it can pose danger to other plants.

61. the solution has to be applied to growing leaves
62. to use the weedkiller first take the plants in the can as then pour the solution into it.
63. it is sufficient to apply it only to some roots
64. it effects to the other plants.

For Placement

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Infosys[®]

POWERED BY INTELLECT
DRIVEN BY VALUES

For Placement

Infosys Technologies Limited

NASDAQ: INFY is an information technology (IT) services company founded in Pune, India in 1981 by N. R. Narayana Murthy. In 1983, Infosys moved its headquarters to Bangalore, the capital of Karnataka. It operates nine development centers in India and has over 30 offices worldwide. Annual revenues for fiscal year 2006 exceeded US\$2.15 billion with a market capitalization of over US\$30 billion. With over 67,000 employees worldwide, Infosys is one of India's largest IT companies.

History

Infosys was founded on July 2, 1981 by seven software professionals: N. R. Narayana Murthy, Nandan Nilekani, N. S. Raghavan, S. Gopalakrishnan, S. D. Shibulal, K. Dinesh and Ashok Arora.^[2] Murthy started the company by borrowing Rs.10,000 from his wife Sudha Murthy. The company was incorporated as "Infosys Consultants Pvt Ltd.", with Raghavan's house in Matunga, north-central Mumbai as the registered office. Raghavan is officially the employee #1 at Infosys. In 1983 Infosys got its first client, Data Basics Corporation from the United States.

In 1999 Infosys attained a SEI-CMM Level 5 ranking and became the first Indian company to be listed on NASDAQ. In 2001 it was rated "Best Employer in India" by Business Today,^[3] and in 2002 Business World named Infosys "India's Most Respected Company". Infosys won the Global MAKE (Most Admired Knowledge Enterprises) award, for the years 2004 and 2003, being the only Indian company to win this award.^[4]

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Timeline

- 1981: Founded on July 2
- 1987: First international office in the US in Fremont, California, now its US headquarters
- 1992: Became a public limited company in India
- 1996: First office in Europe in Milton Keynes, UK
- 1997: Office in Toronto, Canada
- 1999: Listed on Nasdaq
- 2000: Opened offices in France and Hong Kong
- 2001: Opened offices in United Arab Emirates and Argentina
- 2002: Opened new offices in Netherlands, Singapore and Switzerland
- 2002: Started Progeon, its BPO (business process outsourcing) subsidiary
- 2003: Acquired 100% equity of Expert Information Services Pty Limited, Australia (Expert) and changed the name to Infosys Australia Pty Limited.
- 2004: Set up Infosys Consulting Inc., U.S. consulting subsidiary in Texas, U.S.
- 2006: July 2, Infosys celebrated its 25 years
- 2006: Became the first Indian company to ring the NASDAQ Stock Market Opening Bell
- 2006: August 20, N. R. Narayana Murthy retired from his position as the executive chairman
- 2006: Acquired the 23% stake Citibank had in its BPO offshoot Progeon, making it a wholly owned subsidiary of Infosys and changed the name to Infosys BPO Ltd.
- 2006: December, became the first Indian company to make it to Nasdaq-100^[6]
- 2006: Infosys celebrates its 25 anniversary; revenues cross USD 2 Billion; employee strength 67000+

For Placement

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Infosys Sample Test #1

1. Father's age is three years more than three times the son's age. After three years, father's age will be ten years more than twice the son's age. What is the father's present age.

Ans: 33 years. (2 marks)

2. Find the values of each of the alphabets.

$$\begin{array}{r} \text{N O O N} \\ \text{S O O N} \\ + \text{M O O N} \\ \hline \text{J U N E} \end{array}$$

Ans: 9326 (2 marks)

3. There are 20 poles with a constant distance between each pole. A car takes 24 second to reach the 12th pole. How much will it take to reach the last pole.

Ans: 41.45 seconds (2 marks)
Let the distance between two poles = x
Hence $11x:24::19x:?$

4. A car is travelling at a uniform speed. The driver sees a milestone showing a 2-digit number. After travelling for an hour the driver sees another milestone with the same digits in reverse order. After another hour the driver sees another milestone containing the same two digits. What is the average speed of the driver

Ans: 45 kmph (4 marks)

5. The minute and the hour hand of a watch meet every 65 minutes. How much does the watch lose or gain time and by how much?

Ans: Gains; $5/11$ minutes (4 marks)

6. Ram, Shyam and Gumnaam are friends. Ram is a widower and lives alone and his sister takes care of him. Shyam is a bachelor and his niece cooks his food and looks after his house. Gumnaam is married to Gita and lives in large house in the same town. Gita gives the idea that all of them could stay together in the house and share monthly expenses equally. During their first month of living together, each person contributed Rs.25. At the end of the month, it was found that Rs 92 was the expense so the remaining amount was distributed equally among everyone. The distribution was



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such that everyone received a whole number of Rupees. How much did each person receive?

Ans. Rs 2

(4 marks)

(Hint: Ram's sister, Shyam's niece and Gunnaam's wife are the same person)

7. Four persons A, B, C and D are playing cards. Each person has one card, laid down on the table below him, which has two different colours on either side. The colours visible on the table are Red, Green, Red and Blue. They see the color on the reverse side and give the following comment.

A: Yellow or Green

B: Neither Blue nor Green

C: Blue or Yellow

D: Blue or Yellow

Given that out of the 4 people 2 always lie find out the colours on the cards each person.

For Placement

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Infosys Sample Test #2

1. At 6'o a clock ticks 6 times. The time between first and last ticks is 30 seconds. How long does it tick at 12'o clock.

Ans: 66 sec. (2 marks)

2. Three friends divided some bullets equally. After all of them shot 4 bullets the total number of bullets remaining is equal to the bullets each had after division. Find the original number divided.

Ans: 18 (2 marks)

Initially . x x x
 Now x-4 x-4 x-4
 Equation is $3x-12 = x$

3. A ship went on a voyage. After it had travelled 180 miles a plane started with 10 times the speed of the ship. Find the distance when they meet from starting point.

Ans: 200miles. (2 marks)
 Distance travelled by plane = 1/10 distance travelled by ship + 180

4. Complete the Table given below:

Three football teams are there. Given below is the group table. Fill in the x's

	Played	Won	Lost	Draw	Goals For	Goals Against
A	2	2	x	x	x	1
B	2	x	x	1	2	4
C	2	x	x	x	3	7

Ans: The filled table is given below (4 marks)

	Played	Won	Lost	Draw	Goals For	Goals Against
A	2	2	0	0	7	1
B	2	0	1	1	2	4
C	2	0	1	1	3	7

5. There are 3 societies A, B, C. A lent cars to B and C as many as they had already. After some time B gave as many tractors to A and C as many as they have. After sometime c did the same thing. At the end of this transaction each one of them had 24.

Find the cars each originally had.

Ans: A had 39 cars, B had 21 cars & C had 12 cars (4 marks)

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6. There N stations on a railroad. After adding X stations on the rail route 46 additional tickets have to be printed. Find N and X .

Ans. $x=2$ and $N=11$

Let initially, $N(N-1) = t$

After adding, $(N+X)(N+X-1) = t+46$

By trail and error method

(4 marks)

7. Given that April 1 is tuesday. A, B, C are 3 persons told that their farewell party was on

- A - May 8, thursday
- B - May 10, tuesday
- C - June 5, friday

Out of A, B, C only one made a completely true statement concerning date, day and month. The other told two one told the day right and the other the date right. What is correct date, month, day.

Ans: B - (May 10) SUNDAY

C - June 6 (Friday).

(5 marks)

8. The Bulls, Pacers, Lakers and Jazz ran for a contest. Anup, Sujit, John made the following statements regarding results.

- Anup said either Bulls or Jazz will definitely win
- Sujit said he is confident that Bulls will not win
- John said he is confident that neither Jazz nor Lakers will win

When the result came it was found that only one of the above three had made a correct statement. Who has made the correct statement and who has won the contest.

Ans: Sujith; Lakers

(5marks)

9. Five people A, B, C, D, E are related to each other. Four of them make one true statement each as follows.

- (i) B is my father's brother.
- (ii) E is my mother-in-law.
- (iii) C is my son-in-law's brother
- (iv) A is my brother's wife.

Ans: (i) D

(ii) B

(iii) E

(iv) C

(10 marks)

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10. Some statements are given below:

- L says all of my other four friends have money
- M says that P said that exactly one among them has money
- N says that L said that precisely two among them have money
- O says that M said that three of the others have money
- P, L and N said that they have money

All the above statement are false..

Who has money & who doesn't have any money?

(5 marks)

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Infosys Sample Test #3

1. Mr. Mathur's jewels have been stolen from his bank locker. The bank has lockers of 12 people which are arranged in an array of 3 rows and 4 columns like:

1	2	3	4
5	6	7	8
9	10	11	12

- The locker belonging to JONES was to the right of BLACK'S locker and directly above MILLAR'S.
- BOOTH'S locker was directly above MILLAR'S.
- SMITH'S locker was also above GRAY'S (though not directly).
- GREEN'S locker was directly below SMITH'S.
- WILSON'S locker was between that of DAVIS and BOOTH.
- MILLAR'S locker was on the bottom row directly to the right of HERD'S.
- WHITE'S locker was on the bottom right hand corner in the same column as BOOTH'S.

Which box belonged to Mr. Mathur?

Ans: Box number 9 belongs to Mr. Mathur.

2. Fifty minutes ago if it was four times as many minutes past three o'clock, how many minutes is it to six o'clock?

Ans: Twenty six minutes.

3. If a clock takes 7 seconds to strike 7, how long will the same clock take to strike 10?

Ans: The clock strikes for the first time at the start and takes 7 seconds for 6 intervals - thus for one interval time

$$\text{taken} = 7/6.$$

Therefore, for 10 seconds there are 9 intervals and time taken is $9 * 7/6 = 10$ and $1/2$ seconds.

4. Three criminals were arrested for shop lifting. However, when interrogated only one told the truth in both his statements, while the other two each told one true statement and one lie. The statements were:

- **ALBERT** : (a) Chander passed the merchandise. (b) Bruce created the diversion.
- **BRUCE** : (a) Albert passed the merchandise. (b) I created the diversion.

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- **CLIVE** : (a) I took the goods out of the shop. (b) Bruce passed them over.

Ans: Albert passed the goods. Bruce created the diversion. Clive took the goods out of the shop.

5. Everyday in his business a merchant had to weigh amounts from 1 kg to 121 kgs, to the nearest kg. What are the minimum number of weight required and how heavy should they be?

Ans: .The minimum number is 5 and they should weigh 1,3,9,27 and 81 kgs.

6. A hotel has 10 storeys. Which floor is above the floor below the floor, below the floor above the floor, below the floor above the fifth.

Ans: The sixth floor.

7. Seven members sat around a table for three days for a conference. The member's names were Abhishek, Amol, Ankur, Anurag, Bhuwan, Vasu and Vikram. The meetings were chaired by Vikram. On the first evening members sat around the table alphabetically.

On the following two nights, Vikram arranged the seatings so that he could have Abhishek as near to him as possible and absent minded Vasu as far away as he could.

On no evening did any person have sitting next to him a person who had previously been his neighbour. How did Vikram manage to seat everybody to the best advantage on the second and third evenings?

Ans:

Second evening: Vikram, Ankur, Abhishek, Amol, Vasu, Anurag and Bhuwan.

Third evening : Vikram, Anurag, Abhishek, Vasu, Bhuwan, Ankur, Amol.

8. Two trains start from stations A and B spaced 50 kms apart at the same time and speed.

As the trains start, a bird flies from one train towards the other and on reaching the second train, it flies back to the first train. This is repeated till the trains collide. If the speed of the trains is 25 km/h and that of the bird is 100 km/h. How much did the bird travel till the collision.

Ans: 100 kms.

9. Four prisoners escape from a prison. The prisoners, Mr East, Mr West, Mr South, Mr North head towards different directions after escaping. The following information of their escape was supplied:

- The escape routes were The North Road, South Road, East Road and West Road.
- None of the prisoners took the road which was their namesake.
- Mr. East did not take the South Road
- Mr. West did not the South Road.
- The West Road was not taken by Mr. East

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What road did each of the prisoners take to make their escape?

Ans: Mr.East took the North Road
Mr.West took the East Road
Mr.North took the South Road
Mr.South took the West Road.

10. Complete the series:

5, 20, 24, 6, 2, 8, ?

Ans: 12 (as $5*4=20$, $20+4=24$, $24/4=6$, $6-4=2$, $2*4=8$, $8+4=12$).

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Infosys Sample Test #4

1. Replace each letter by a digit. Each letter must be represented by the same digit and no beginning letter of a word can be 0.

ONE
ONE
ONE
ONE

TEN

Ans: $0=1, N=8, E=2, T=7$

2. Ann, Boobie, Cathy and Dave are at their monthly business meeting. Their occupations are author, biologist, chemist and doctor, but not necessarily in that order. Dave just told the biologist that Cathy was on her way with doughnuts. Ann is sitting across from the doctor and next to the chemist. The doctor was thinking that Boobie was a goofy name for parent's to choose, but didn't say anything. What is each person's occupation?

Ans: Since Dave spoke to the biologist and Ann sat next to the chemist and across the doctor, Cathy must be the author and Ann the biologist. The doctor didn't speak, but David did, so Bobbie is the doctor and Dave the chemist.

3. Sometime after 10:00 PM a murder took place. A witness claimed that the clock must have stopped at the time of the shooting. It was later found that the position of both the hands were the same but their positions had interchanged. Tell the time of the shooting (both actual and claimed).

Ans: Time of shooting = 11:54 PM
Claimed Time = 10:59 PM

4. Next number in the series is
1, 2, 4, 13, 31, 112, ?

Ans: 224.

No number has digits more than 4. All of them are 1, 2, 4, 8, 16, 32, 64 converted to numbers in base 5

5. Shahrukh speaks truth only in the morning and lies in the afternoon, whereas Salman speaks truth only in the afternoon. A says that B is Shahrukh. Is it morning or afternoon and who is A - Shahrukh or Salman.

Ans: Afternoon ; A is Salman.

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6. Two trains starting at same time, one from Bangalore to Mysore and other in opposite direction arrive at their destination 1 hr and 4 hours respectively after passing each other. How much faster is one train from other?

Ans: Twice

7. There are 6 volumes of books on a rack kept in order (ie vol.1, vol. 2 and so on). Give the position after the following changes were noticed.

- All books have been changed
- Vol.5 was directly to the right of Vol.2
- Vol.4 has Vol.6 to its left and both weren't at Vol.3's place
- Vol.1 has Vol.3 on right and Vol.5 on left
- An even numbered volume is at Vol.5's place

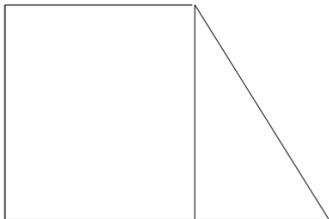
Find the order in which the books are kept now.

Ans: 2 , 5 , 1 , 3 , 6 , 4

8. I bought a car with a peculiar 5 digit numbered licence plate which on reversing could still be read.On reversing value is increased by 78633.Whats the original number if all digits were different?

Ans: Only 0 1 6 8 and 9 can be read upside down.So on rearranging these digits we get the Answer as 10968

9. The shape in the sketch below is that of a square attached to half of a similar square.Divide it into four equal pieces



Ans: Hint : the figure can be divided into 12 equal triangles

10. Supposing a clock takes 7 seconds to strike 7. How mlong will it take to strike 10?

Ans: 10 1/2 seconds.

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Infosys Sample Test #5

- 1) A man collects cigarette stubs and makes one full cigarette with every 8 stubs.
If he gets 64 stubs how many full cigarettes can he smoke.

Ans: $8+1=9$

- 2) A soldier loses his way in a thick jungle. At random he walks from his camp but mathematically in an interesting fashion. First he walks one mile East then half mile to North. Then $\frac{1}{4}$ mile to West, then $\frac{1}{8}$ mile to South and so on making a loop. Finally how far he is from his camp and in which direction.

Ans: Distance travelled in north and south directions

$$\frac{1}{2} - \frac{1}{8} + \frac{1}{32} - \frac{1}{128} + \frac{1}{512} - \text{and so on}$$
$$= \frac{1}{2} / ((1 - (-1/4)))$$

Similarly in east and west directions

$$1 - \frac{1}{4} + \frac{1}{16} - \frac{1}{64} + \frac{1}{256} - \text{and so on}$$
$$= \frac{1}{(1 - (-1/4))}$$

Add both the **Answers**

- 3) How can 1000000000 be written as a product of two factors neither of them containing zeros

Ans: 2 power 9 x 5 power 9

- 4) Conversation between two mathematicians:

First : I have three children. The product of their ages is 36. If you sum their ages, it is exactly same as my neighbour's door number on my left. The second mathematician verifies the door number and says that it is not sufficient. Then the first says " Ok one more clue is that my youngest is really the youngest". Immediately the second mathematician answers .Can you answer the question asked by the first mathematician?

What are the children's ages?

Ans 1,6 and 6

- 5) Light glows for every 13 seconds . How many times did it glow between 1:57:58 and 3:20:47am.

Ans : $383 + 1 = 384$

- 6) 500 men are arranged in an array of 10 rows and 50 columns according to their heights. Tallest among each row of all are asked to fall out. And the shortest among them is A. Similarly after resuming that to their original positions that the shortest

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among each column are asked to fall out. And the tallest among them is B. Now who is taller among A and B?

AnsA

7) A person with some money spends $\frac{1}{3}$ for cloths, $\frac{1}{5}$ of the remaining for food and $\frac{1}{4}$ of the remaining for travel. He is left with Rs 100/- How much did he have with him in the beginning?

Ans: Rs 250/-

8) There are six boxes containing 5, 7, 14, 16, 18, 29 balls of either red or blue in colour. Some boxes contain only red balls and others contain only blue. One sales man sold one box out of them and then he says "I have the same number of red balls left out as that of blue". Which box is the one he sold out?

Ans: Total no of balls = 89 and $(89 - 29) / 2 = 60 / 2 = 30$ and also $14 + 16 = 5 + 7 + 18 = 30$

9) A chain is broken into three pieces of equal lengths containing 3 links each. It is taken to a blacksmith to join into a single continuous one. How many links are to be opened to make it?

Ans : 2.

10) Grass in lawn grows equally thick and in a uniform rate. It takes 24 days for 70 cows and 60 days for 30 cows to eat the whole of the grass. How many cows are needed to eat the grass in 96 days?

Ans : 20

g - grass at the beginning

r - rate at which grass grows, per day

y - rate at which one cow eats grass, per day

n - no of cows to eat the grass in 96 days

$$g + 24*r = 70 * 24 * y$$

$$g + 60*r = 30 * 60 * y$$

$$g + 96*r = n * 96 * y$$

Solving, $n = 20$.

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Infosys Sample Test #6

1. From a vessel, $\frac{1}{3}$ rd of the liquid evaporates on the first day. On the second day $\frac{3}{4}$ th of the remaining liquid evaporates. What fraction of the volume is present at the end of the second day.

Ans: 50%

2. An orange glass has orange juice and white glass has apple juice both of equal volumes.

50ml of the orange juice is taken and poured into the apple juice. 50ml from the white glass is poured into the orange glass. Of the two quantities, the amount of apple juice in the orange glass and the amount of orange juice in the white glass, which one is greater and by how much?

Ans: The two quantities are equal

3. There is a 4 inch cube painted on all sides. This is cut down into 1 inch cubes. What is the no of cubes which have no pointed sides.

Ans: 8

4. Sam and Mala have a conversation.

- Sam says I am certainly not over 40
- Mala says I am 38 and you are atleast 5 years older than me
- Now Sam says you are atleast 39

All the statements by the two are false.
How old are they really?

Ans: Mala = 38 yrs
Sam = 41 yrs.

5. Ram Singh goes to his office in the city, every day from his suburban house. His driver Gangaram drops him at the railway station in the morning and picks him up in the evening. Every evening Ram Singh reaches the station at 5 O' Clock. Gangaram also reaches at the same time. One day Ram Singh started early from his office and came to the station at 4 O' Clock. Not wanting to wait for the car he starts walking home. Mangaram starts at normal time, picks him up on the way and takes him back home, half an hour early. How much time did Ram Singh walk?

6. In a railway station, there are two trains going. One in the harbour line and one in the main line, each having a frequency of 10 minutes. The main line service starts at 5 o'clock and the harbour line starts at 5.02A.M. A man goes to the station every day to catch the first train that comes. What is the probability of the man catching the first train?

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Ans: 0.8

7. A family X went for a vacation. Unfortunately it rained for 13 days when they were there. But whenever it rained in the mornings, they had clear afternoons and vice versa.

In all they enjoyed 11 mornings and 12 afternoons. How many days did they stay there totally?

Ans: 18

8. A survey was taken among 100 people to find their preference of watching T.V. programmes. There are 3 channels. Given the no of people who watch

- at least channel 1
- at least channel 2
- at least channel 3
- no channels at all
- atleast channels 1 and 3
- atleast channels 1 and 2
- atleast channels 2 and 3

Find the no of people who watched all three.

9. Albert and Fernandes have two leg swimming race. Both start from opposite ends of the pool. On the first leg, the boys pass each other at 18 m from the deep end of the pool.

During the second leg they pass at 10 m from the shallow end of the pool. Both go at constant speed but one of them is faster. Each boy rests for 4 seconds at the end of the first leg. What is the length of the pool?

10. Each alphabet stands for one digit in the following multiplication.

$$\begin{array}{r} \text{T H I S} \\ \times \quad \text{I S} \\ \hline \text{X F X X} \\ \text{X X U X} \\ \hline \text{X X N X X} \\ \hline \end{array}$$

What is the maximum value T can take? **Ans:** T max value = 4

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Infosys Sample Test #7

1. An escalator is descending at constant speed. A walks down and takes 50 steps to reach the bottom. B runs down and takes 90 steps in the same time as A takes 10 steps. How many steps are visible when the escalator is not operating?

Ans: 150 steps

2. Every day a cyclist meets a train at a particular crossing. The road is straight before the crossing and both are travelling in the same direction. The cyclist travels with a speed of 10 Kmph. One day the cyclist comes late by 25 min. and meets the train 5km before the crossing. What is the speed of the train?

Ans: 60 kmph

3. There are five persons with surnames Mukherjee, Misra, Iyer, Patil and Sharma. There are 4 persons having first or middle name of Kumar, 3 persons with Mohan, 2 persons with Dev and 1 Anil. Either Mukherjee and Patil have a first or middle name of Dev or Misra and Iyer have their first or middle name of Dev. Of Mukherjee and Misra, either both of them have a first or middle name of Mohan or neither have a first or middle name of Mohan. Either Iyer or Sharma has a first or middle name of Kumar but not both. Who has the first or middle name of Anil?

Ans: Kumar Misra Dev

Mohan Iyer Dev

Kumar Patil Mohan

Mohan Sharma Kumar

4. Boys are allowed to watch football at C.V. Raman auditorium subjected to conditions.

- The boy over age 16 can wear overcoat
- No boy over age 15 can wear cap
- To watch the football either he has to wear overcoat or cap or both
- A boy with an umbrella or above 16 or both cannot wear sweater.
- Boys must either not watch football or wear sweater.

What is the appearance of the boy who is watching football.

5. A bird keeper has got P pigeons, M mynas and S sparrows. The keeper goes for lunch leaving his assistant to watch the birds.

- Suppose $p=10$, $m=5$, $s=8$ when the bird keeper comes back, the assistant informs the x birds have escaped. The bird keeper exclaims: "Oh no! All my sparrows are gone." How many birds flew away?

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- When the bird keeper comes back, the assistant told him that x birds have escaped. The keeper realised that atleast 2 sparrows have escaped. What is minimum no of birds that can escape?

6. Answer the following questions based on the conditions from the choices A, B, C, D, E as described below:

- (A) if a definite conclusion can be drawn from condition 1
- (B) if a definite conclusion can be drawn from condition 2
- (C) if a definite conclusion can be drawn from condition 1 and 2
- (D) if a definite conclusion can be drawn from condition 1 or 2
- (E) no conclusion can be drawn using both conditions

- person 1 says $N < 5$
- person 2 says $N > 5$
- person 3 says $3N > 20$
- person 4 says $3N > 10$
- person 5 says $N < 8$

What is the value of N ?

- a) 1. No of persons who speak false being less than no of persons who tells the truth.
2. Person 2 is telling the truth.
- b) 1. no of persons telling the truth is greater than no of persons telling lies
2. person 5 is telling the truth.

7. There are N coins on a table and there are two players A & B. You can take 1 or 2 coins at a time. The person who takes the last coin is the loser. A always starts first.

- If $N=7$
 - (a) A can always win by taking two coins in his first chance
 - (b) B can win only if A takes two coins in his first chance.
 - (c) B can always win by proper play
 - (d) none of the above
- 2. A can win by proper play if N is equal to
(a) 13 (b) 37 (c) 22 (d) 34 (e) 48
Ans: (e.)
- 3. B can win by proper play if N is equal to
(a) 25 (b) 26 (c) 32 (d) 41 (e) none
- 4. if $N < 4$, can A win by proper play always?
(a) Yes (b) No

8. Two twins have certain peculiar characteristics. One of them always lies on Monday, Wednesday, Friday. The other always lies on Tuesdays, Thursdays and Saturdays. On the other days they tell the truth. You are given a conversation.

- Person A -- today is Sunday my name is Anil
- Person B -- today is Tuesday, my name is Bill

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What day is today?

Ans: Today is Tuesday.

9. There is a safe with a 5 digit number as the key. The 4th digit is 4 greater than second digit, while 3rd digit is 3 less than 2nd digit. The 1st digit is thrice the last digit. There are 3 pairs whose sum is 11. Find the number.

Ans: 65292

10. A hotel has two wings, the east wing and the west wing. Some east wing rooms but not all have an ocean view. All west wing rooms have a harbour view. The charge for all rooms is identical, except as follows :

- Extra charge for all harbour view rooms on or above the 3rd floor
- Extra charge for all ocean view rooms except those without balcony
- Extra charge for some harbour rooms on the first two floor & some east wing rooms without ocean view but having kitchen facilities.

Which of the following cannot be determined on the basis of the information given:

- I. Whether there are any rooms without a balcony for which an extra charge is imposed.
- II. Whether any room without a kitchen or a view involves an extra charge.
- III. Whether two extra charges are imposed for any room.

(A) I only

(B) II only

(C) III only

(D) II and III only

(This question is from 1999 Barrons GRE Guide model Test 3 - section 6, question 22)

Ans: (A)

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INFOSYS PAPER PATTERN ON 5th NOVEMBER AT MUMBAI

Hi friends , I had given the written test of infosys in sydehnam college , Mumbai on 5th nov,2006 . The good news is that infosys has changed the paper pattern . Now the paper pattern is exactly similar to CAT/CET (Maharashtra)_. All problems of DI , DS, LR, 't VA,etc . I don't remember the paper questions but I can give the brief idea of what the paper consisted .

Aptitude test had 2 papers :

1. Maths – 30 ques in 45 mins .(1 mark each)
2. Verbal ability – 40 ques in 30 mins (1 mark each)

(Ques No. 1-5) There was a question on logical reasoning , they had given some conditions on 6 books and page numbers . 6 books r kept one above the other in some manner .the books were Sanskrit , Physics,Chemistry,Biology, Economics, English and the pages of books were 205,405,296,317,276,378 not in same order .From some conditions I was able to derive foll diagram :

Subjects

Chemistry

Physics

Sanskrit

Biology

Economics

English

I don't exactly remember the pages of all books .From 1st 5 ques , 4 were asked on order of books .The 5th ques was as follows :5. if the book binder ,by his fault binds the book cover of 1st book from bottom to the pages of the 4th book from bottom , book cover of 2nd from bottom to pages of 5th from bottom ,and so on . then what will be the total pages of book with biology colour cover now ?The question was very simple .

(Ques No. 6-10) There were 5 ques based on finding the odd figure out of 5 given figure having relation between them.(simple ones)

(Ques No. 11-15) There were 5 ques based on Data sufficiency .(easy ones)

(Ques No. 16-20) 5 ques on Data Interpretation .(very difficult ones)

(Ques No. 21-25) 5 ques on Logical reasoning .The 5 ques were based on some conditions given .the conditions were based on family tree.(difficult)

(Ques No. 26-30) 5 ques on sequence on statements given to fit in a proper logical relation. 4 options were given with 6 statements and choose one which is giving a proper sequence .(very easy)

Verbal ability was pretty simple .It had 2 comprehension passages and both were equally simple. And some questions based on fill in the blanks, 2 meanings of given word ,selection of one option which gives the central idea about the given statements , replacing the underlined sentence with the given appropriate options without changing its actual meaning as in original statement .

THERE WERE NO PUZZLES FROM SHAKUNTALA DEVI IN WRITTEN TEST .In interviews , there were 2 rounds for each candidate and both were HR based (with some technical for candidates having little BAD LUCK) .Else the interviewers were good and friendly.Here , some were asked puzzles from shakuntala devi.



INTERVIEW

INFOSYS PAPER ON 29th OCTOBER AT HYDERABAD

hi i wrote infosys exam on 29th oct the pattern was changed for usno puzzle was given...all reasoning questions...ie they gave a conditions and below that some 4 questions are given 30 (45 mins)marks paper

1)There was a question like they are 2 races 100m race n 200 meter race the participants are P,Q,R,S,T,U,V some conditions like(i dont remember exact conditions of P,Q...but they are like this) P is better than T in 100 mt race n less than some U in 200 mt race R neither occupies lat position nor the first position S is better than some U in 200 mt and less than T in 100 mt race P have 4 members above it in 100 mt race and 4 members below it in 200 mt race according to this data some questions are given

- a) How many are there below Q in 100 mt race?(options are given some 6,5,4,none of these)**Ans 6**
- b)how many are there below Q in 200 mt race?(options are given 6,5,3,none of these)
- c)how many members have same postion in both 100 mt n 200mt race?**Ans S,R**
- d)which occupies first position in 200 mt race?(data not sufficient)
- e)which occupies last position in some 100 mt or 200mt race?

2)This a odd one out question it also contains 5 questions ecah question has some 5 figures in which 4 are related and 1 is different they gave some figures like directin figures ie cloack wise direction a am linear line with some direction like that(they are confusing but easy)

3)There are 6 members seated round a conference table A,B,C,D,E,F they wear differetnt color t shirts of white,black,blue,yellow red,green and they have ordered for pastries,burgers,sandwich,patters,vineala,pizzas,some drink ot all in same order and some conditions are given persons in white n blasck does not eat pizzas pastries,patters and some other condition i dont remember it but conditions are like thisA is neither in white t-shirt nor is not on immediate left who ordered for burger the person between E and F has ordered for sandwhich and is not to the person wearin white T-shirt D has oredered for burger and and the man opposite to him has ordered for sandwich the person who ordered for burger wears green t-shirt and is not to the ridgt of some one like this and some 5 questions are give. this question takes time but will get the answer

- 4) A)all docks are socks
- B) all rocks are socks
- C) some docks are socks
- D) some rocks are socks
- E)all rocks are docks

like this conditions are given and 3 cobination options are given asked for whichis correct like

- a)ABD b)ACB c)AEB d)ABE

5 questions are given in this group its easy choose the Answers by lookin at the options

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5) some graph is given and some condition and some questions English was same (30 mins)

2 comprehensive passages correction of sentences it was easy but prepare for it too takes time

i was selected for the interview... out of 791 they select some 158 for interview

there are 2 rounds in the interview some of them are said to leave after first round and some have both the rounds first round is HR only (i was asked by a lady n man above some 40-45 and they are cool)

1) they gave some topic and asked to choose me 1 topic and speak abt it join in the organisation for money or improving skills? importance of marriage musharruf the bluff master some kiran singh and one more i have selected the first one

2) they asked abt my self family background

3) they asked me to read some thing aloud which is a question abt our project explain our project to a 5th standard student

4) he gave me 2 puzzles (i explained them but was not correct)

5) do u have any questions

i was selected for the second round also (she was also cool)

she asked what they have asked me in the first round..... i told her..... did u answer the puzzles she asked i said no..... she asked me one question like there are a car cycle truck, auto which combination of two will u use to make a aeroplane i said some thing and she asked y..... i answered jus confidently i donno whether it is right or wrong she asked do u have any questions i asked some questions that's all it was cool results will b declared after 2 weeks donno what happens ALL the best for u all.....

By,
Anitha.

For Placement

e-INTERVIEW

The pattern was changed from puzzles to Logical Reasoning and the second part was as usual Verbal section.

The pattern was like this:

- 1) logical reasoning- 30 Questions (45 min).
- 2) Verbal section- 40 Questions (30 min).

Logical Reasoning:

- 1) 1-5 questions :A paragraph was given and questions related to the para were asked. The Para was easy....P,Q,R,S,T,U,V participated in 100m & 200m race...P is above and below U...and some more conditions.....sorry I don't remember.
- 2) 6-10 questions: Find the odd one out from a sequence of 5 choices.
- 3) 10-15 questions: Data sufficiency questions.
- 4) 15-20 questions: Data interpretation, a line graph was given and questions related to that were asked.
- 5) 20-25 questions: Another reasoning paragraphA,B,C,D,E,F ordered vanilla,burger,pastry,strawberry...they wear different color TShirts.....green,white,black,yellow.....and some more conditions based on their T-shirt color ..this was lengthy Para....sorry I don't remember.....
- 6) 25-30 questions : 6 statements were given and following that will b five choices of 3 sequences ,we need to pick up the right choice (logical order).

Verbal Section:

- 1) 1-5 & 6-10 questions –two reading comprehension passages.(the passage was one and half page long).
- 2) 11-20 questions-Find the right option from the choices given below.
- 3) 21-30 questions-Underlined word has to be replaced by an appropriate line in the sentence well.
- 4) 31-40 questions-Inferences from the passages(para is about 3 to 4 lines).

Refer verbal and non verbal reasoning by R.S.Agarwal

For Placement



INTERVIEW

INFOSYS NEW PATTERN: LOGICAL QUESTIONS (45 Min)

- 1-5 critical reasoning
- 6-10 odd one out
- 11-15 data sufficiency
- 16-20 data interpretation
- 21-25 critical reasoning
- 26-30 statements & conclusion

VERBAL QUESTIONS (30 Min)

- 1-10 comprehension
- 11-20 choose the right option
- 21-30 replace the sentence
- 31-40 influence from the passage
- If **technical round** is there, questions will be asked from these...

C

DATA STRUCTURES
DATA BASE MANAGEMENT SYSTEM
OPERATING SYSTEM-WINDOWS, UNIX

The new paper pattern is like this.....

1st Paper consisted of 30 Questions to be solved in 45 Minutes of time. (Multiple Choice)

2nd Paper consisted of 40 Questions to be done in 30 Minutes of time. (Multiple Choice)

The given time is not at all sufficient to do all the questions in both the papers. First paper consisted of the questions of the type Logical Reasoning with multiple choice. No Puzzles. None of the questions are from Shakunthala Devi, George J Summers, Brain Teasers or any thing as such. None of the questions are from previous papers. If you have done R.S. Aggarwal's Verbal as well as Non Verbal Reasoning, it will be easy for you, I guess.

For Placement

30 Questions
Minutes

45

For the Question numbers 1 through 5, Answer by reading the following.

There is a 100meters and 200meters running race to be held and the participants are P, Q, R, S, T, U and V.

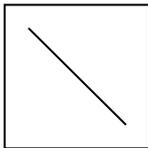
- a) S is just below P in the 100 meters race and just above P in 200 meters race.
 - b) R is not the first in both the races.
 - c) U's position is better than V in both the races
 - d) There is none between S and P in any race.
- (Two more conditions given)

- 1. Who is the first position in 100 meters race?
- 2. Who is the first position in 200 meters race?
- 3. Who occupies the same position in both the races?
- 4. (Sorry friends, I 4got)
- 5. (" ") (All are Multiple Choice Questions)

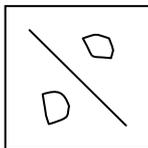
For the questions 6 through 10, choose the option from a through e which looks least like the others.

(Here some figures are given, which are of the type given in RRB and Bank examinations. These type of questions could be found in RS Aggarwals' NON VERBAL REASONING Book)

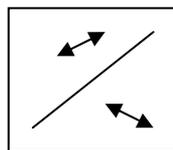
6.



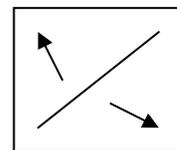
a)



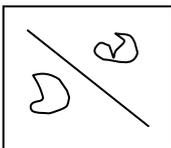
b)



c)



d)



e)

e-INTERVIEW

The above Question is not exactly the same, but just to give you an idea. The questions from 6 to 10 are of the above type.(Figures may not appear while posting this paper)

For the Questions 11 through 15, use the following

Mark 1 if A only is sufficient

Mark 2 if B only is sufficient

Mark 3 if A and B both are necessary

Mark 4 if neither is sufficient

Mark 5 if any of the two is sufficient

11. $(a^b) > (b^a)$

A) $a \neq b$

B) $b > a$

12. $(2/x) > 1$

A) $x < 1$

B) $x > 1$

For the Questions 16 through 20, use the following Data

A Company produces a product. In the course of its production, it also produces some defective items. If the company sends these products to the shops along with the defective items, it has to pay some money to the shop owners. But if the company wants to make the defective items into defect less items, it has to spend some amount of money. The company has to decide any one of these choices. Based on this, predict what the company has to do for the following.....

(A Graph is given, I am giving it here, but **it is not the same as appeared in the Exam**, just to give you an idea.....)

COST

DEFECTIVE ITEMS

Based on the above figure, five questions were asked (A bit tough) like.....

16. if $x=0.2$, what should be done?

1. A only

2. B only

3. A and B both

4. Can't say

17. If $x=0.5$, what should be done?

1. A only

2. B only

3. A and B both

4. Any one

Like this another three questions were asked.

For Placement

e-INTERVIEW

For the Questions 21 through 25, use the following data to Answer.

Six friends A, B, C, D, E and F went to a restaurant. All the six wore different T-Shirts like Blue, Black, White, Green, Yellow and Red. They all want to sit in the form of a circle facing each other. They all ordered different items. The person who wore Green T-Shirt ordered Strawberry. The other five people ordered Pizzas, Pastries, Patties, Vanilla and Chocolate. The person who wore Blue T-Shirt is not sitting to the left of the person who ordered Vanilla. (Few more conditions were given)

21. Who wore Black T-Shirt?

1. A 2. B 3. C 4. F

22. Who ordered Pastries?

1. E 2. F 3. B 4. D

23. What is the color of the T-Shirt of the person who ordered Patties?

1. Black 2. Blue 3. Yellow 4. Red

24. Who is sitting opposite to E?

1. A 2. B 3. C 4. F

Like these one more question was asked.....

For the questions 26 through 30, choose the one that correctly matches from the given six conditions

26.

- A) All roses are flowers.
- B) All flowers are not roses.
- C) Some flowers are roses.
- D) Some flowers are lilies.
- E) All lilies are flowers.
- F) Some roses are lilies

1. ADF 2. BCE 3. BEF 4. ABF

(The question is not exactly same, but it's almost of that type. They have given six conditions in the question like A, B, C, D, E, F and in the **Answer** choices, a combination of three is given as shown above.)

The remaining four questions are also of the same type as shown above.

For Placement

e-INTERVIEW

ENGLISH PAPER

40 Questions
Minutes

30

It consisted of Two Reading Comprehensions with a very big passage (almost one and half page of A4 size, each passage) following that are 5 questions for each RC. So, a total of 10 questions for two Reading Comprehensions. Some are correcting the sentences Some are to fill up the blanks with appropriate tense forms. Some are to substitute a sentence for a given sentence.

(All the Questions are of Multiple Choice Type)

For Placement

e-INTERVIEW

QUESTIONS ON APPTITUDE TEST:

- 1) $X^{1/3} - X^{1/9} = 60$. then find X? (3marks)
- 2) There was a cycle race going on. $\frac{1}{5}^{\text{th}}$ of those in front of a person and $\frac{5}{6}$ of those behind him gives the total number of participants. How many people took part in the race? (3 marks).
- 3) Samantha younger than jack and older than Louise, Louise older than Edward and younger than Jim and some more conditions are given. Then who is the youngest person? (5 marks)
- 4) A man starts from xyz city & drive a constant speed. After some time he sees a milestone with two digits written on it. After he drives for an hour, he sees another milestone with the same digits, but in reversed order. After another hour of juniorny, he sees another milestone with original digits with zero b/w them. Wht was the speed of the car if milestone show in KM? (3 marks)
- 5) A five digit no whose third digit is one greater than the sum of the 1st two digits and the 3rd digit is double the 4th digit and 4th digit is double the 5th digit and 2nd digit is greater than the 1st by 5 nd if we multiply 4th nd 5th digit we get 3rd digit. Then the no is? (6 marks)
- 6) There are 100 countries are playing in knockout football match. At every match one team which loss the game is omitted from the tournament. hw many matches have to conduct to decide the winner? (4 marks)
- 7) There r five persons w,x,,y,z & v five languages are English,French,Spanish,Italian,Portuguese.conditions are Spanish is the mostly commonly spoken langauage.3 of them speak Portuguese.x&z can talk in Spanish but when y arrives they start talking in English..x&y speak in italin.Out of them one person speaks 1 language,1 person speaks 2 langauage,1 persons speaks 3 language ,1 persons speak 4 language. 1 person speaks 5 languages &so on. I could not remember entire qsn.but qsn is like this. And there 4 qsns from these data? (8 marks)
- 8) These is very easy qsn from cubes. the surface of the cube is painted with red colour.By six straight cuts 27 cubes are formed then.
 - a)hw many cubes are there with 0 side red color?
 - b)1 side red color?
 - c)2 sides red color?
 - d)3 sides red color? (8 marks)

For Placement



INTERVIEW

9) 7. Uncle Reuben and aunt Cynthia came to town to shop. Reuben bought a suit and hat for \$15. Cynthia paid as much as for her hat as Reuben did for his suit. Then she spent the rest of her money for her dress. Then uncle said if we had divided our hat money differently such that we bought a different hats mine costing 1 and $\frac{1}{2}$ times cost of yours then we would have spent the equal amount of money.

(i) How much the hat would cost in that case?

(ii) What is the total amount spent? (5 marks)

10) There were totally 100 men. 85 are married. 75 have T.V, 85 have radio, 70 have A.C. How many men have T.V, radio, A.C and also married? (4 marks)

SOLUTIONS:

1) let us take $X = a^9$

$$\text{then } (a^9)^{1/3} - (a^9)^{1/9} = 60$$

$$a^{9/3} - a^{9/9} = 60$$

$$a^3 - a = 60$$

$$a(a^2 - 1) = 60$$

by sol. this

$$a = 4$$

Ans: $X = a^9 = 4^9$ (sure)

2) let us assume no. of participants = x

$$\text{from the condition } x \cdot \frac{1}{5} + x \cdot \frac{6}{5} = x + \frac{1}{5} + \frac{1}{6}$$

$$(x-1) \frac{1}{5} + (x-1) \frac{6}{5} = x$$

$$x = 31$$

Ans: 31 (sure)

3) This is very simple don't worry about no. of conditions are given have to arrange sequence of relation using < or > symbols. After one arranging one Lange sequence u can Answer any qsn. I am not remember total qsn tht's way I am unable to give realeason. But

Ans: Edward (sure)

4) At 1st milestone the distance = xy.

At 2nd milestone the distance = yx

This diff. will give the speed of car = $xy - yx$

The diff. Of one number and reverse number must be divisible by 9.

From this we have to check all multiples of 9 which satisfy all conditions in the problem. 45 will do that condition..

Suppose at first the distance = 16 km

At 2nd ms distance = 16 + 45 = 61 km

At 3rd ms distance = 61 + 45 = 106 km

Ans: 45 KM/hr (sure)

5) LET US take last no = x

Then 4th digit = 2x

And 5th digit = 4x

3rd digit = 4th digit · 5th digit

4x = x · 2x

4x = 2x²

x = 2

4th = 4

3rd = 8

1st + 2nd > 3rd fm condition

let take 1st = a

a + a + 5 > 8 fm condition

a = 1

2nd = 6

Ans: 16842 (sure)

6) At every match one team is eliminated from the tournament. There are 100 teams. So 99 matches are required to eliminate 99 teams to decide the winner.

Ans: 99 matches (sure)

7) This is a little bit lengthy but easy if you analyze. I am unable to solve this now because I am not remembering the total question. Draw a table against persons versus language then you can get the answer. From this table you can attempt all questions.

8) Remember these formulas, if no. cubes in one side = n

a) no. of 3 sides color cubes = no. of corners $(n-2)^0 = 8$

b) no. of 2 sides color cubes = no. of edges $x(n-2)^1 = 12x(n-2)^1$

c) no. of 1 side color cubes = no. of faces $x(n-2)^2 = 6(n-2)^2$

d) no. of no color cubes = $(n-2)^3$

in our pblm. $N=3$ ($27=3 \times 3 \times 3$)

Ans: a)1

e)6

f)12

g)8 (sure)

9) **reuben hat cost = x**

suit cost = y

$$x + y = 15$$

synthin hat cost = y

synthin dress cost = b

hats cost ratio = $x:a = 3/2 : 1 = x:y = 3:2$

so $x = 3 \times 15/5 = 9$

$y = 15 - 9 = 6$

$a = 6$

$b = 9$

Ans: 1) hat cost = 9

2) total = 30

10) those who don't married = $100 - 85 = 15$

those who don't have T.V = $100 - 75 = 25$

those who do not have radio = $100 - 85 = 15$

those who don't have A.C = $100 - 70 = 30$

total no. of men those who do not have any one of the above = 85

no. of men those who are under all of the above = $100 - 85 = 15$



INTERVIEW

I have solved 8 out of 10 & i got selected for interview. morning at 11:20 am.the.. the interview was good but they didn't ask me typical quest like tell me abt urself.they ask me:

- 1.family background
- 2.what role u played in ur final year project.for this question be prepared if u rgoing to Answer as u where team leader.bcoz i did the same & they she ask me who selected u as team leader & why. when u was team leader dose ur friend in ur group feel bad?.
- 3.what problem u face in ur project?
4. as u r telecomm engg why u want to go for software?
- 5.what kind of books u read?
- 6.then she gave me 2 puzzles 1> there r 10 candels .u need to arrange them in 5candels in 1 row & 4 candels in own row?
 2> 0
 0 0
 0 0 0
 0 0 0 0.....make it up side down by shifting only 3 circles
- 7.then ,,there was a bottle ,how can i use that plastic bottle other than for drinking?
- 8.where can i use the ring present on the cap of the bottle?

1) What are the ways that 6&1 n 2&4 and 3&5 can be put on exactly opposite faces?

Remember its Ans is 48(2!*2!*2!*3!) not 24 so plz don't confuse.

$$\begin{array}{r}
 2) \quad X \ Y \ Z \qquad \qquad \qquad X \ Y \ Z \\
 + \ A \ B \qquad \quad \text{AND} \qquad \quad - \ A \ B \\
 \hline
 C \ D \ E \ F \qquad \qquad \qquad B \ G \ A \\
 \text{Find X,Y,Z,G.}
 \end{array}$$

$$\begin{array}{r}
 \text{Ans:} \\
 \begin{array}{r}
 9 \ 4 \ 5 \\
 + \ 7 \ 8 \\
 \hline
 1 \ 0 \ 2 \ 3
 \end{array}
 \qquad \text{AND} \qquad
 \begin{array}{r}
 9 \ 4 \ 5 \\
 - \ 7 \ 8 \\
 \hline
 8 \ 6 \ 7
 \end{array}
 \end{array}$$

X=9, Y=4, Z=5, G=6.

3. I don't remember the exact problem but it is dam easy n we have to just find lcm of 3,5,7,9 add 1 in it at find that no which is divisible by 11. **Ans** 746.

5. Its problem abt age u need not worry for that it was dam easy. I forgot. But only two simple equations was there n we just have to solve them. **Ans** 18 years.

6. A person buy sum potatoes , its weight is 100 kg. N there is 99% water in that. He put that for 1 day in sun . n after that day it have 98% water. Now what is the weight of potatoes now?

Ans now word is very imp in this prob let assume weight of remaining water is x kg. And if initially water is 99% than weight of only potatoes is 1kg,

So $98(x+1)/100=x$

X=49. total weight x+1=50.kg **Ans**.

e-INTERVIEW

INTERVIEW:

Myself : may I come in

Both:yes

Man :tell us abt sumthing which is not in that paper.

As soon as I started he cut me short n ask do you read?

I: No sir, I hav completed b.tech. (notice frnds this was my first silly mistake.)

Man: no no saumya I m asking abt anything?

Yes sir newspaper, magazines.

Which types? I tell name.

Why only that particular?

I said in that I find philosophy of life.

Ok saumya, r u fond abt reading philosophy of life.

What is your philosophy of life?

I told about.

Again he cut me short. And asking me about the editorial and editor.

It was my second blunder .I had so say sorry sir.

After that much time lady comes into active decision. She asked. A puzzle to me. I could not do that. Even I started with a wrong logic.

Then they entered into photography. It was my hobby and I had prepared a lot but still iwas not able to **Answer** them.

Then again a puzzle. Thank god. I made that. Then sum discussions about my trade.

It was ok kinds. They asked about the cultural fest that I had organized. I told.

Then my turn they ask about question?

I think I did only this section well.

Exercise 1:

**The passage given below is followed by questions based on its content.
Read the passage & choose the best Answer 4 the questions**

The Death Car

It was cold night in September. The rain was drumming on the car roof as George & Marie Winstion drove through the empty country roads towards the house of their



INTERVIEW

friends, the Harrissons, where they were going to attend a party to celebrate the engagement of the Harrissons daughter, Lisa. As they drove, they listened to the local radio station, which was playing classical music. They were about 5 miles from the destination when the music on the radio was interrupted by a news announcement: “The Cheshire police have issued a serious warning after a man escaped from Colford Mental Hospital earlier this evening. The man, John Downey, is murderer who killed 6 people before he was captured 2 years ago. He is described as large, very strong & extremely dangerous. People in the Cheshire area are warned to keep their doors & windows locked, & to call the police immediately if they see anyone acting strangely.” Marie shivered, “A crazy killer. And he’s out there somewhere. That’s scary.” “Don’t worry about it,” said her husband. “We’re nearly there now. Anyway, we have more important things to worry about. This car is losing power for some reason—it must be that old problem with the carburetor, If it gets any worse, we’ll have to stay at the Harrissons’ tonight & get it fixed before we travel back tomorrow,” As he spoke, the car began to slow down, George pressed the accelerator, but the engine only coughed. Finally they rolled to a halt, as the engine died completely, Just as they stopped, George pulled the car off the road, & it came to rest under a large tree. “Blast!” said George angrily. “Now we’ll have to walk in the rain.” “But that’ll take us an hour at least,” said Marie. “And I have my high-held shoes & my nice clothes on. They’ll be ruined!” “Well, you’ll have to wait while I run to the nearest house & call the Harissons. Someone can come out & picks us up,” said George. “But George! Have you forgotten what the radio said? There’s a homicidal maniac out there! You can’t leave me alone here!” “You’ll have to hide in the back of the car. Lock all the doors & lie on the floor in the back, under this blanket. No-one will see you, when I come back, I’ll knock 3 times on the door. Then you can get up & open it. Don’t open it unless you here 3 knocks.” George opened the door & slipped out into the rain. He quickly disappeared into the blackness. Marie quickly locked the doors & settled down under the blanket in the back for a long wait. She was frightened & worried, but she was a strong-minded woman. She had not been waiting long, however, when she heard a strange scratching noise. It seemed to be coming from the roof of the car. Marie was terrified. She listened, holding her breath. Then she heard 3 slow knocks, one after the other, also on the roof of the car. Was it her husband? Should she open the door? Then she heard another knock, and another. This was not her husband. It was somebody--or something--else. She was shaking with fear. But she forced herself to lie still. The knocking continued-- bump, bump, bump, bump Many hours later, as the sun rose, she was still lying there. She had not slept for a moment. The knocking had never stopped, all night long. She did not know what to do. Where was George? Why had he not come for her?

Suddenly, she heard the sound of 3 or 4 vehicles, racing quickly down the road. All of them pulled up around her, their tires screeching on the road. At last! Some one had come! Marie sat up quickly & looked out the window.

The 3 vehicles were all police cars, & 2 still had their lights flashing. Several policemen leap out. One of them rushed towards the car as Marie opened the door. He took her by the hand.

“Get out of the car & walk with me to the police vehicle. miss. You’re safe now. Look straight ahead. Keep looking at police car. Don’t look back. Just don’t look back.”

For Placement



INTERVIEW

Something in the way he spoke filled Marie with cold horror. She could not help herself. After 10 yards from the police car, she stopped, turned & looked back at the empty vehicle.

George was hanging from the tree above the car, a rope tied around his neck. As the wind blew his body back & forth, his feet were bumping gently on the roof of the car - bump, bump, bump, bump

- 1) What was the reason for the news announcement on the radio?
 - a) 6 people. Including John Downey, had been murdered?
 - b) A dangerous prisoner had escaped
 - c) The police were warning of accidents on the roads in the bad weather
 - d) Some people had been acting strangely in the Cheshire area
- 2) What did George think was causing trouble with the car?
 - a) The carburetor
 - b) The rain drumming on the roof
 - c) The accelerator
 - d) He had no idea
- 3) Why did he pull the car off the road?
 - a) To have a rest
 - b) To go for a walk
 - c) To walk to the nearest house
 - d) It broke down
- 4) Why did Marie stay in the car when George left?
 - a) She was afraid to go out in the dark
 - b) So no one could steal the car
 - c) Her clothes weren't suitable for the rain
 - d) She wanted to get some sleep
- 5) Where did George set off to walk?
 - a) The mental hospital
 - b) The nearest house
 - c) The Harrison's house

For Placement

e-INTERVIEW

- d) The police station
- 6) What made Marie so frightened as she waited in the car?
- a) There was a strange sound coming from the roof
 - b) She could see a man strangely outside the car
 - c) Some police cars came racing down the road
 - d) She was afraid of the rain and the dark

For Placement

e-INTERVIEW

Exercise 2:

Each sentence below has 1 or 2 blanks – each blank indicating that something has been omitted. Beneath the sentence are some words. Choose the word for each blank that best fits the meaning of the sentence as a whole

7) Athletes have so perfected their techniques in track and field events that the _____ becomes _____ before record books

- a) Announcementpublic
- b) Meet.....official
- c) Time.....authentic
- d) Fantastic.....common place

8) A _____ child, she was soon bored in class; she already knew more mathematics than her junior school teachers

- a) Obdurate
- b) Precocious
- c) Recalcitrant
- d) Contemporary

9) The subtle shades of meaning, & still subtler echoes of association, make language an instrument which scarcely anything short of genius can wield with _____ & _____

- a) Confidence-----aloofness
- b) Definiteness-----certainty
- c) Sincerity-----hope
- d) Eloquence-----ruthlessness

10) Unwilling to admit that they had been in error, the researchers tried to _____ tried case with more data obtained from dubious sources

- a) Ascertain
- b) Buttress
- c) Refute
- d) Dispute

11) His one vice was gluttony & so it is not surprising that as he aged he became increasingly _____

e-INTERVIEW

- a) Despondent
- b) Corpulent
- c) Carping
- d) Lithe

For Placement



INTERVIEW

Exercise 3:

Please read all the questions in the table below (12-21) as one continuous passage. Tick the verb with right tense or the correct word to fill in the gaps in each of the sentences.

Statement	Options
12) A famous singer had been contracted to sign at a Paris opera house & ticket sales _____ booming.	a) is b) are c) were d) have been
13) In fact, the night of the concert, the house was packed; every ticket _____	a) is selling b) was selling c) sold d) had been sold

14) The feeling of anticipation & excitement was in the air as the house manager _____ the stage & said, "Ladies & gentlemen, thank you for your enthusiastic support!"	a) took b) takes c) had taken d) was taking
15) I am afraid that due to illness, the man whom you've all come to hear _____ performing tonight	a) will not be b) has not been c) had not been d) was not
16) However, we _____ a suitable substitute who, we hope, will provide you with comparable entertainment."	a) are finding b) were finding c) had found d) have found
17) The crowd _____ in disappointment & failed to hear the announcer mention the stand-in's name	a) groAns b) groaned c) had groaned

	d) were groaning
<p>18) The environment turned from excitement to frustration</p> <p>The stand-in performer _____ the performance everything he had.</p>	<p>a) will give</p> <p>b) had given</p> <p>c) gave</p> <p>d) gives</p>
<p>19) When he had finished, there was nothing but an uncomfortable silence. No one _____</p>	<p>a) Applauded</p> <p>b) Applauds</p> <p>c) Was applauding</p> <p>d) Has applauded</p>
<p>20) Suddenly, from the balcony, a little boy stood up and _____, "Daddy, I think you're wonderful!"</p>	<p>a)shouts</p> <p>b) was shouting</p> <p>c) had shouted</p> <p>d) shouted</p>
<p>21) The crowd _____ into thunderous applause</p>	<p>a) breaks</p> <p>b) broke</p> <p>c) had broken</p> <p>d) was breaking</p>

e-INTERVIEW

Exercise 4:

From each group of sentences given below, indicate the sentence that contains the error:

22) Group 1

- a) Driving long distances causes sleepiness, & sleepiness causes serious accidents.
- b) On a table at the rear of the room was a notebook, a pair of scissors, & a biology textbook
- c) Finally, there seems to be a growing interest in vegetarianism in this country
- d) Either the local chief of police or his officers are guilty of violating the rights of prisoners

23) Group 2

- a) Simple cookbooks for inexperienced cooks have become quite popular in recent years they are available at many bookstores
- b) Some cookbooks, such as The Joy of cooking, have been classics for generations
- c) One popular cookbook is The Art of French Cooking, by Julia Child, a colorful character who charmed television audiences for many years
- d) The Art of French Cooking blends classic recipes with meticulous explanation; ordinary cooks find the recipes manageable

24) Group 3

- a) Around 50% of the forest are destroyed every year
- b) The bus leaves tomorrow morning
- c) A tiger is a dangerous animal
- d) Can you please the sugar?

25) Group 4

- a) There must be some mistake. I should have scored more marks
- b) The number of trainees are hundred

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c) 50% of the houses need repairs

d) The Commissioner, along with his family members was seen the party

26) Group 5

a) The scissors is very sharp

b) Congratulations are in order

c) One of the cases is open

d) She plays tennis well but she'll never be a Steffi Graf

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Exercise 5:

Please mark the correct statement from the pairs given below:

27) Pair 1

- a) Repeated occurrences cannot be ignored
- b) Repeated occurrences cannot be ignored

28) Pair 2

- a) We need to get a consensus on the decision
- b) We need to get a concensus on the decision

29) Pair 3

- a) Only authority personnel are allowed in this area
- b) Only authorized personnel are allowed in this area

30) Pair 4

- a) The actress decided to sue the sleazy tabloid for deformation of her character
- b) The actress decided to sue the sleazy tabloid for defamation of her character

31) Pair 5

- a) Everyone knows that Hogwarts in the Harry Potter series is a mythical school
- b) Everyone knows that Hogwarts in the Harry Potter series is a legendary school

32) Pair 6

- a) Most people think caffeine is not good for health
- b) Most people think caffiene is not good for health

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Exercise 6:

Select the best word/phrase/line to complete each sentence in the most appropriate manner

33) 'Reema's bad-mouthing Peter only because she is jealous of him.'
Means _____

- a) Peter really is a nice person
- b) Peter really is a mean person
- c) Peter really is a difficult person
- d) Peter really is a tough person

34) If some one is "gung ho", they are _____

- a) stupid
- b) Childish
- c) Enthusiastic
- d) Loud

35) Mr. Hughes has been asked to _____ this difficult project because of his experience working for many years in Iran

- a) undergo
- b) understand
- c) undervalue
- d) undertake

36) 'Stop talking to those angry men, you are just adding fuel to the fire' is the same as _____

- a) Stop talking to those angry men, you are just coming in the way
- b) Stop talking to those angry men, you are just making it worse
- c) Stop talking to those angry men, you are just adding to the noise
- d) Stop talking to those angry men, you are just talking too much

37) 'Sudhir's work is behind schedule – I think he bit more than he could chew' is the same as _____

- a) Sudhir has taken too much of work
- b) Sudhir takes very long breaks

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c) Sudhir does not know how to do the work

d) Sudhir is a lazy person

38) There are many _____ to our rules, and I do not think that's fair.

a) examples

b) exceptions

c) instances

d) provisions

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Exercise 7:

Choose the correct / most appropriate word/s to fill in the gap in the sentences given below.

- 39) I didn't set _____ to do this but I'm pleased with the result.
- a) in
 - b) out
 - c) on
 - d) down
- 40) This looks too heavy, _____ pick it up?
- a) Can I
 - b) may I
 - c) need I
 - d) would I
- 41) I am glad so many people have passed the test. In fact, there were _____ who haven't.
- a) little
 - b) a little
 - c) few
 - d) a few
- 42) Pope John Paul II _____ more than 90 countries.
- a) has visited
 - b) was visited
 - c) visits
 - d) has been visiting
- 43) I _____ Carl since I _____ a little child.
- a) have known, have been
 - b) have known, was
 - c) knew, have been
 - d) knew, was

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44) I wonder if _____ will show up at the meeting?

- a) someone
- b) anyone
- c) one
- d) everyone

45) Have you given up_____.

- a) to smoke
 - b) smoke
 - c) some smoking
 - d) smoking
-

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