GATE 2015 – A Brief Analysis
(Based on student test experiences in the stream of EE on 7th February, 2015 – (Forenoon Session)

### Section wise analysis of the paper

Section Classification	1 Mark	2 Marks	Total Number of Questions
Engineering Mathematics	3	4	7
Networks	2	2	4
Analog Circuits	3	2	5
Digital Circuits	1	3	4
Signals and Systems	2	2	4
Control Systems	3	3	6
Electrical Machines	3	3	6
Power Systems	3	2	5
Measurements	2	3	5
Power Electronics	2	3	5
Field Theory	1	3	4
Verbal Ability	3	2	5
Numerical Ability	2	3	5
	30	35	65

Questions from the Paper

1. The word resembles to what as shirt, pair of trousers and a shirch
   (A) fabric   (B) textile   (C) fibre   (D) apparel

2. P, R, S, T, U are in arithmetic sequence then which of the following are in sequence
   a. 2P, 2R, 2S, 2T, 2U
   b. $P-3, R-3, S-3, T-3, U-3$
   c. P^2, R^2, S^2, T^2, U^2
   (A) only a & b
   (B) only b & c
   (C) only a & c
   (D) only a

3.
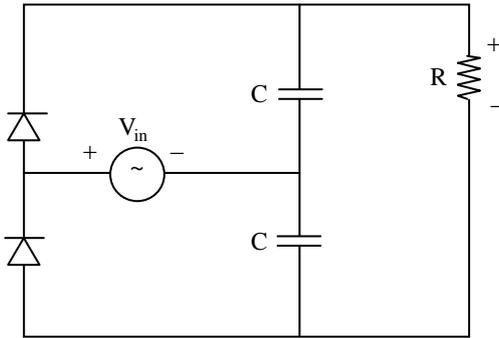
$V_{in} = 100\sin(100\pi t)$, $100\pi RC = 50$, then voltage across the resistor is _____.

(A) 100   (B) 200   (C) 31.8   (D) 63.6

4. $G(S) = \dfrac{K}{S(S+1)(S+2)}$

For unity feedback system, the breakaway point on real axis occurs at
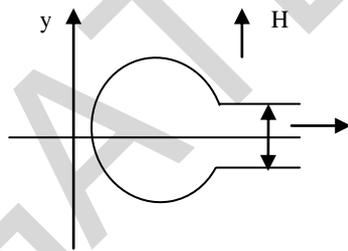
(A) -0.42   (B) -1.58

(C) Both -0.42 and -1.58   (D) None

5. In a 3-bus power system, three transmission line shunt capacitance is 50%. The third row and third column bus admittance is what after compensation

$$\begin{bmatrix} -j6 & j3 & j4 \\ j3 & -j7 & j5 \\ j4 & j5 & -j8 \end{bmatrix}$$
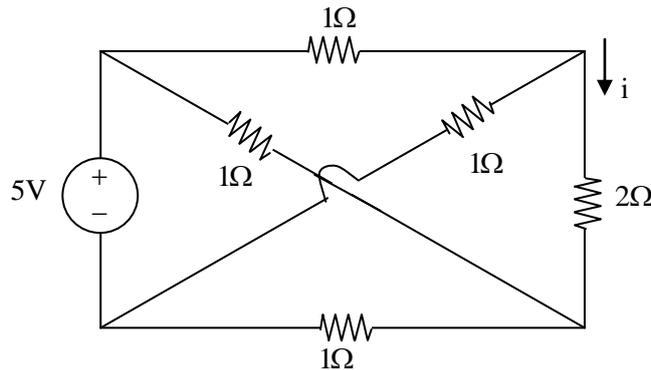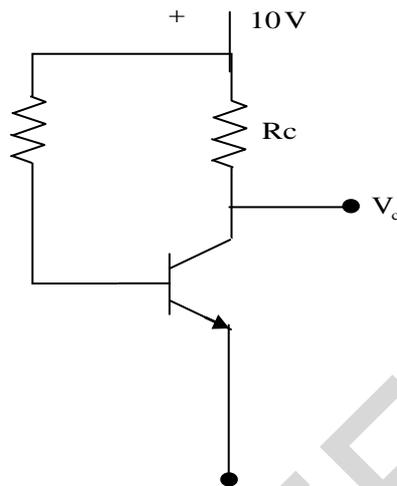
6.

$\mu = 4\pi \times 10^{-7}$

$\overline{H} = 10^7 \hat{z}$

r = 1m revolves at 60 rpm along x-axis peak value induced voltage V_{turn} is _____.

7.   Current through i in 2Ω is _____

8.

Here V_c is given as 2V, if it is required to increase to 4V then replace R_c with $R_c^{'}$ then the ratio of $\dfrac{R_c^{'}}{R_c}$ is _____ .

9.   Laplace transform of $f(t) = 2\sqrt{\dfrac{t}{\pi}}$ is $S^{-3/2}$ then laplace transform of $g(t) = \sqrt{\dfrac{1}{\pi t}}$ is _____ .

10. Sum of products

$f = ABC + \overline{A}\overline{B}C + A\overline{B}C + \overline{A}BC + \overline{A}B\overline{C}$

Then its equivalent product of sums is _____.

11. Bipolar junction transistor in saturation mode of common Base & Emitter Base is _____.

(A) Both Common Base & Emitter Base are forward biased

(B) Both Common Base & Emitter Base are reverse biased

(C) only Common Base is forward biased & Emitter Base is reverse biased

(D) only Common Base is reverse biased & Emitter Base is forward biased.