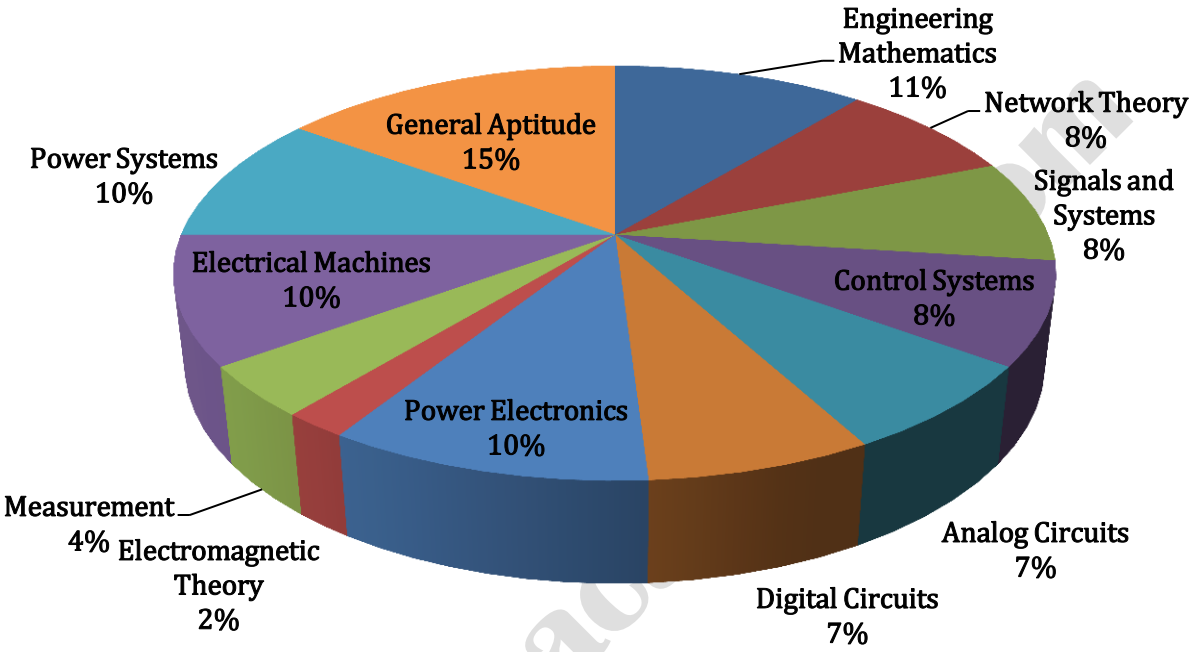
ANALYSIS OF GATE 2018* (Memory Based)

Electrical Engineering



EE ANALYSIS-2018_10-Feb_Afternoon

SUBJECT	No. of Ques.	Topics Asked in Paper(Memory Based)	Level of Ques.	Total Marks
Engineering Mathematics	1 Marks: 3 2 Marks: 4	Statistics and Probability Calculus; Differential Equations; Complex Variables;	Tough	11
Network Theory	1 Marks: 2 2 Marks: 3	Basic Components and types of circuits; Steady state analysis of AC Circuits; Two Port Networks	Medium	8
Signals and Systems	1 Marks: 2 2 Marks: 3	Linear Time Invariant(LTI) Systems; Fourier Representation of Signals; Z-Transform; Laplace Transform;	Tough	8
Control Systems	1 Marks: 4 2 Marks: 2	Basics Of Control System; Time Domain Analysis; Stability Analysis; Frequency Domain Analysis;	Tough	8
Analog Circuits	1 Marks: 3 2 Marks: 2	Diode Circuits-Analysis and Application; AC & DC Biasing-BJT and FET; Operational Amplifiers	Tough/ Easy	7
Digital Circuits	1 Marks: 1 2 Marks: 3	Boolean Algebra and Karnaugh Maps; Logic Gates; Combinational and Sequential Digital Circuits;	Easy	7
Power Electronics	1 Marks: 2 2 Marks: 4	Power Semiconductor Devices; Choppers; Inverters	Tough	10
Electromagnetic Theory	1 Marks: 2 2 Marks: 0	Electromagnetic Field	Moderate	2
Measurement	1 Marks: 2 2 Marks: 1	Basics of Measurements and Error Analysis; Electronic Measuring Instruments	Moderate	4
Electrical Machines	1 Marks: 2 2 Marks: 4	Transformer; Three Phase Induction Motors; D.C. Machine; Synchronous Machine;	Tough/Easy	10
Power Systems	1 Marks: 2 2 Marks: 4	Transmission & Distribution; Economics of Power Generation; Symmetrical Components & Faults Calculations; Power System Stability;	Tough	10
General Aptitude	1 Marks: 5 2 Marks: 5	Probability; Time Distance; Permutation	Easy	15
Total	**65**			**100**
Faculty Feedback	Majority of the question were concept based. General Aptitude And Mathematics is Very Easy. Core Subject Questions were 50% easy, 30% medium and 20% tough.			

GATE 2018 Examination*

Electrical Engineering

Test Date: 10-Feb-2018

Test Time: 2:00 PM 5:00 PM

Subject Name: Electrical Engineering

General Aptitude

Q.1 - Q.5 Carry One Mark each.

1. If $f(x) = 0$ for $x = \{-2,0,3\}$
Then, find the roots of $f(x-3) = 0$.
[Ans. $x = \{1, 3, 6\}$]

2. Find the value of k for which $\frac{(k+2)^2}{k-3}$ becomes an integer
[Ans. k = 4, 8, 28]

3. If $f(a,b) = (a-b)^2$
$g(a,b) = |a-b|$
Then find $g\big(f(1,3), g(1,3)\big)$
[Ans. 2]

4. Some of the writers assume that the sentence structure mirrors the thoughts.
It means that more _____the structure the more complicated the idea.
(A) detailed (B) clear
(C) complex (D) convoluted
[Ans. C]

5. Since you have gone off the _____the _____ sand is likely to damage the boat.
[Ans. Course, Coarse]

Q.6 - Q.10 Carry Two Mark each.

6. A class of 12 students has two boys more than girls. 3 students are randomly picked to accompany the class teacher on a trip. What is the probability that there will be more number of girls than boys in the group selected?
[Ans. $^4/_{11}$]

7. "An e-mail id has three character password it must contain one numeric digit, one upper case alphabet and one lower case alphabet. How many different passwords can be formed?"
[Ans. 40560]

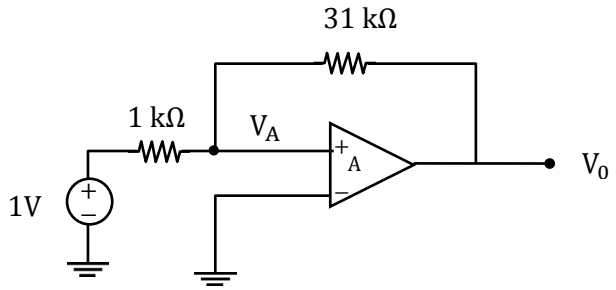
8. If AMCF is coded as EQGJ and
NKUF is coded as ROYJ then
DHLP is coded as _____
[Ans. HLPT]

9. Coming soon

10. Coming soon

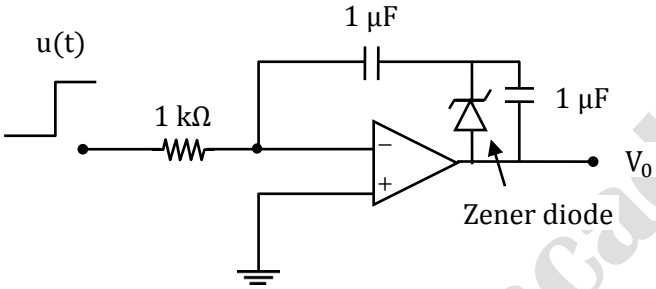
Technical

1. OP-AMP is ideal .Find the voltage V_A



[Ans. *]Will update soon

2. The breakdown voltage of zener diode is 2.5V. The input applied is a step signal x(t)=u(t). Find the time in milliseconds required for the output to cross −10V.



[Ans. *]Will update soon

3. "In power system there are 8 nodes and 5 loop, find the number of branches.

(A) 11 (B) 12

(C) 13 (D) 14

[Ans. *]Will update soon

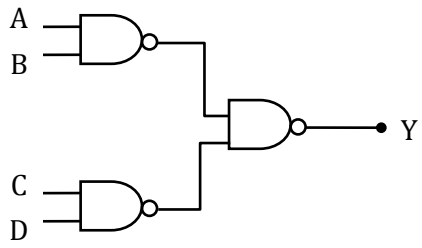
4. In a salient pole alternator, power output is given by $P = 1.4 \sin x + 0.15 \sin 2x$. The power output is 0.8 p.u. An initial guess of x is 30 degree. Using NR method, the value of x at the end of 1st iteration?

[Ans. *]Will update soon

5. In a salient pole synchronous machine, for what value of load angle, is the reluctance power maximum?

[Ans. *]Will update soon

6. Find output of Y?



(A) Y=ABCD
(B) Y=A+B+C+D
(C) Y=(A+B)(C+D)
(D) Y=(AB)+(CD)

[Ans. B]

7. A bus system of 1000×1000 contains 8000 non-zero elements. Calculate minimum number of transmission lines.

[Ans. *]Will update soon

8. $G(s)H(s) = \frac{1}{(s+1)(s+2)}$. Find steady state error for Unit step input if $G(s) = \frac{k}{(s+1)^2(s+2)}$, find k =?

[Ans. *]Will update soon

9. $f(x) = x^2 \quad x \geq 0$
$\quad\quad -x^2 \quad x < 0$

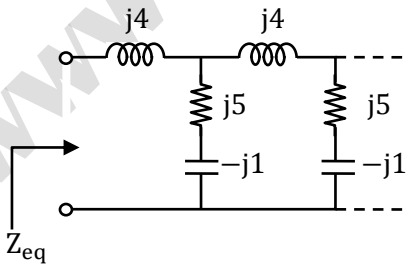
(A) Continuous at $x = 0$
(B) Continuous but not differentiable
(C) Neither continuous nor differentiable
(D) First derivative not differentiable

[Ans. *]Will update soon

10. A password of 3 words to be formed it can 0-9 number, an upper case letter, a lower case, letter calculate number of distinct passwords.

[Ans. *]Will update soon

11. Find $z_{eq} = ?$



[Ans. *]Will update soon

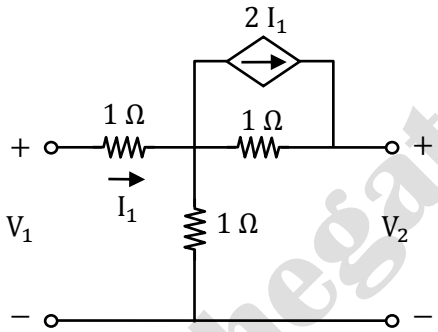
12. In two wattmeter method, if $w_2 = \frac{w_1}{2}$
Find the power factor.
[Ans. *] Will update soon

13. $Tr(A) = 4$
$Tr(A^2) = 5$
A is a 2×2 matrix
Then find $|A|$
[Ans. *] Will update soon

14. Number of nodes $= 8$
Number of independent loops $= 3$
Find the number of branches.
[Ans. *] Will update soon

15. $A = \begin{bmatrix} 1 & 0 & -1 \\ -1 & 2 & 0 \\ 0 & 0 & -2 \end{bmatrix}$ and $B = A^3 - A^2 - 4A + 5I, I_{3\times3}$, Then $|B| = ?$
[Ans. *] Will update soon

16. In a two port network given,



Find $h_{11} = \left.\frac{V_1}{I_1}\right|_{V_2=0}$?
[Ans. *] Will update soon

More Questions Update Soon