GATE PRO

An Initiative by Suresh VSR
GATE COACHING for EE - EC

ONLINE CLASSES – LIVE – ZOOM and RECORDED IN APP CLASSES

OFFLINE CONTACT CLASSES

Above Helapuri Restaurant, Opposite RTC Complex,

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GATE EXAM AWARENESS SHEET cum MODEL PAPER

GRADUATE APTITUDE TEST IN ENGINEERING

- Entrance exam for M.Tech / M.S / Ph.D for IIT – NIT and all top engineering institutions in India.
- Singapore and Germany also allow GATE qualified aSspirants.

- Every GATE qualified student who takes admission into MTech is assured of stipend of Rs.12,400.
- The stipend is higher if you take TA or RA in IIT/NITs.

- All 3rd / 4th year students are eligible to write GATE Exam.
- GATE Rank/Score is valid for 3 years.
- There is no age limit and students can write GATE exam for unlimited number of times.

- Qualifying marks are 25-30 out of 100.
- GATE exam is conducted in February and notification for the exam is released in August – September.

GATE EXAM PATTERN & SYLLABUS

- **100 Marks – 65 Questions – 30 x 1 Mark – 35 x 2 Marks.**
- **Questions are of three types**
  - **1. Multiple Choice Questions**
    - **One Option among four is correct.**
    - **Negative marks of 1/3**

  - **2. Multipe Selection Questions**
    - **More than one option among four is correct.**
    - **Identify all the correct options**
    - **No negative marks**

  - **3. Numerical Answer Type Questions**
    - **Answer is a number either integer or real number**
    - **No negative marks**

- **General Aptitude / Reasoning / English – 15 Marks**
- **Engineering Mathematics – 13 Marks**
- **Core Engineering subjects – 72 Marks from 8-10 subjects.**

Electronics and Communications Engineering (ECE)

Network Theory	**Digital Electronics**
Control Systems	**Analog Electronics**
Signals and Systems	**Electromagnetics**
Electronic Devices	**Communications**

GATEPRO Subject Awareness Exam
Total Marks : 25   TIME : 30 Minutes

MULTIPLE CHOICE QUESTIONS (5 x 1 mark)

1. Two employees X and Y are paid a total of Rs. 4950 per week by their employer.

If X is paid 150 percent of the sum paid to Y, how much is Y paid per week?

a) 1250   b) 3760   c) 2405   d) 1540

2. One sixth of half of three fourth of a number is 25. What will be 30% of that number?

a) 800   b) 120   c) 340   d) 300

3. Which of the following is a property of MOSFET ?
a) Gate current controls drain current   b) Gate voltage controls drain current
c) Source current controls gate current   b) source voltage controls gate current

4. The units of Del operator $\nabla = \frac{d}{dx}\hat{\imath} + \frac{d}{dy}\hat{\jmath} + \frac{d}{dz}\hat{k}$
a) Unitless   b) 1/metre
c) metres   d) seconds / metre

5. The current across a capacitor is
a) Linear function of voltage   b) Derivative of voltage
c) Integration of voltage   d) Reciprocal of voltage

MULTIPLE CHOICE QUESTIONS (5 x 2 mark)

6. The rms value of a harmonic sine voltage is
a) 70% of its peak voltage.   b) Equal to its peak voltage.
c) 50% of its peak voltage.   d) Depends on peak and frequency values.

7. Find the approximate value of $\sqrt{0.98^2 + 2.01^2 + 1.98^2}$

a) 1.98   b) 0.98   c) 2.96   d) 3.96

8. Match the following.

a) BJT – Base   MOSFET – Gate   b) BJT – Collector   MOSFET – Gate
c) BJT – Emitter   MOSFET – Gate   d) BJT – Base   MOSFET – Substrate

9. The division of complex numbers 1+j and 1-j results in ?

a) 1   b) -1   c) j   d) -j

10. Which of the following is NOT a cause of magnetic field ?
a) DC current   b) DC voltage   c) AC current   d) Inductor

MULTIPLE SELECTION QUESTIONS (2 x 1 mark)

11. An ideal voltage source should have
a) Small internal impedance   b) Large internal impedance
c) Voltage across the load always constant   d) Voltage across the load to decrease with
current

12. Reactance of a circuit is defined as
a) Frequency dependent resistance   b) It is zero or infinite in DC analysis
c) It has the units of Henry or Farads   d) It is zero for resistive circuits.

MULTIPLE SELECTION QUESTIONS (2 x 2 mark)

13. Doping of a semiconductor results in..
a) Increase in sum of holes and electrons
b) Increase in product of holes and electrons
c) Decrease in difference of holes and electrons
d) Change in ratio of holes and electrons

14. Which of the following is strictly unidirectional conduction device for all voltages ?
a) Zener diode   b) Transistor in Saturation between collector n Emitter
c) UJT   d) PN junction diode

NUMERICAL ANSWER TYPE QUESTIONS (2 x 1 mark)

15. Find the probability of picking two numbers on after the other, in a set of 20 numbers from [1-20] and both being consecutive numbers ?

16. The cut-in voltage of a diode is ....(Silicon or Germanium)

NUMERICAL ANSWER TYPE QUESTIONS (1 x 2 mark)

17. The amplitude of an voltage drops to 70% of its initial value, the power of the voltage drops to.....% of initial value.