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Roll No.

221024/212821

**2nd Sem / ECE / Automation & Robotics,
ECE (for speech and Hearing Impaired)
Subject : Electronic Devices and Circuits -I**

Time : 3 Hrs.

M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 How many valence electrons does a trivalent impurity have?

- a) 2 b) 3
- c) 4 d) 5

Q.2 Which one is an Insulator

- a) Paper b) Copper
- c) Silicon d) None

Q.3 Semiconductor is _____ temperature coefficient of resistance

- a) Positive b) Negative
- c) Both d) None

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Q.4 Efficiency of half wave rectifier is _____.

- a) 40.6 % b) 50 %
- c) 72 % d) 65 %

Q.5 FET is a _____ driven device

- a) Current b) Voltage
- c) Power d) None

Q.6 BJT stands for _____

- a) Bipolar junction transistor
- b) Base junction transistor
- c) Bipolar junction transistor
- d) None

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Atomic number of Germanium atom is _____.

Q.8 In N types semiconductor _____ is the minority charge carriers.

Q.9 PN junction diode is a bidirectional device.
(True / False)

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Q.10 Draw the symbol of NPN transistor.

Q.11 A transistor consists of three regions : base, emitter, and collector. (True/ False)

Q.12 Write the full form of MOSFET.

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Draw the atomic structure of Germanium with its electronic configuration.

Q.14 What is intrinsic and extrinsic semiconductor?

Q.15 Differentiate between conductor, semiconductor, and insulator based on energy band diagram.

Q.16 What is drift current and diffusion current ?

Q.17 Explain the working of centre tapped full wave rectifier.

Q.18 Write a short note on zener diode.

Q.19 What is Transistor biasing ? Name different biasing circuits.

Q.20 Explain the working of PNP transistor with diagram.

Q.21 What is the need of stabilization of operating point?

Q.22 Write the applications of MOSFET

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Explain the working of PN junction diode. Draw its VI characteristics.

Q.24 Draw and explain input and output characteristics of CE configuration of transistor.

Q.25 Explain construction and working principle of P channel FET . Draw its VI characteristics.