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2nd Sem. / ECE, Automation & Robotics

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 In the depletion region of a pn junction, there is a shortage of_____. (CO2)

a) Acceptor b) Holes and electrons

c) Donor ions d) None

Q.2 At room temperature the intrinsic semiconductor behaves as_____

a) Copper wire b) Insulator

c) Semiconductor d) Conductor

Q.3 The breakdown of PN Junction diode due to high potential gradient is called_____

a) Voltage breakdown

b) Zener breakdown

c) Current breakdown

d) None

Q.4 The common base current gain is_____.

a) Less than 1 b) Equal to 1

c) Usually 10-15 d) Usually 50-150

Q.5 For faithful amplification of signals, the transistors must be operated in ____ region

a) Active b) Saturation

c) Cutoff d) reverse

Q.6 Ideally an amplifier must have_____ input resistance.

a) Zero b) Low

c) Medium d) Infinite

SECTION-B

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

Q.7 N type semiconductor is made by doping_____ impurities.

Q.8 The small amount of AC present in filters in filters output is called_____

Q.9 In active region of operation the collector junction is_____ biased.

Q.10 The ideal value of stability factor is_____

Q.11 AC load line and DC load line intersect at_____

Q.12 FET stands for_____.

SECTION-C

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

Q.13 Explain Zener breakdown.

Q.14 Write a note on Shunt capacitor filter and LC filter

Q.15 Explain VI characteristics of diode.

Q.16 Explain the mechanism of current flow in PNP transistor.

Q.17 Explain the operation of FET and its applications

Q.18 Explain intrinsic and extrinsic semiconductor.

Q.19 Explain the working of full wave bridge rectifier.

Q.20 Explain the concept of transistor biasing and operating point.

Q.21 Explain the concept of transistor biasing and operating point.

Q.22 Explain the input and output characteristics of CE configuration.

SECTION-D

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

Q.23 Explain transistor as an amplifier in CE configuration, and calculation of current gain and voltage

Q.24 Compare JEFT and BJT.

Q.25 Difference between P and N type semiconductors and energy level diagram.