

No. of Printed Pages : 4
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 pentavalent impurity have?
a) 2 b) 3
c) 4 d) 5
- Q.2 At absolute zero, intrinsic semiconductor behave as?
a) conductor b) insulator
c) metal d) none
- Q.3 A zener diode is used as a _____
a) rectifier b) amplifier
c) regulator d) none

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- Q.4 Efficiency of bridge full wave rectifier is _____
a) 81.2% b) 50%
c) 72% d) 65%
- Q.5 Rectifier convert _____ into _____
a) AC, AC b) AC, DC
c) DC, AC d) DC, DC
- Q.6 FET stands for _____
a) field effect transformer
b) Force effect transistor
c) field effect transistor
d) none

SECTION-B

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

- Q.7 Atomic number of Si atom is _____
- Q.8 In P type semiconductor _____ is the majority charge carriers.
- Q.9 PN junction diode is a unidirectional device. (True/False)
- Q.10 Draw the symbol of Zener diode.

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- Q.11 A transistor consists of three regions: base, emitter, and collector. (True/False)
- Q.12 Write the full form of BJT.

SECTION-C

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

- Q.13 Draw the atomic structure of Silicon with its electronic configuration.
- Q.14 Explain extrinsic semiconductor with its types.
- Q.15 What is the effect of temperature on the conductivity of intrinsic semiconductor?
- Q.16 What is drift current and diffusion current?
- Q.17 Explain the working of half wave rectifier.
- Q.18 List the applications of Zener diode.
- Q.19 What is filter? Name the types of filter.
- Q.20 Explain the working of NPN transistor with diagram.
- Q.21 Write a short note on CB configuration of transistor.
- Q.22 Explain the working of N channel FET in detail.

SECTION-D

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

- Q.23 Differentiate between conductor, semiconductor, and insulator based on energy band diagram.
- Q.24 With a neat diagram explain the working of a full wave bridge rectifier.
- Q.25 Compare BJT, JFET and MOSFET