

Roll No.

3035

**B. Tech. (ECE) 3rd Semester
Examination – February, 2022**

ELECTRONIC DEVICES

Paper : PCC-ECE-201-G

Time : Three Hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt five questions in all, selecting one question from each Unit. Question Number 1 is compulsory. All questions carry equal marks.

1. Write note on the following : 2.5 × 6 = 15

- (a) Explain Band Theory of semiconductors.
- (b) What do you mean by drift current ?
- (c) Explain unbiased transistor.

- (d) Describe circuit for +ve clampper.
- (e) Describe the need of biasing a transistor.
- (f) Explain photo-diode.

UNIT - I

- 2. (a) Explain Law of Mass Action. 7.5
- (b) Explain Poisson and Continuity equation. 7.5
- 3. (a) Explain switching characteristics of diode. 8
- (b) Describe Zener and Avalanche Breakdown in diodes. 7

UNIT - II

- 4. Describe any full wave rectifier and calculate ripple factor & rectification efficiency for the same. 15
- 5. (a) Explain CE, configuration in detail; giving its i/p & o/p V-I curves. 10
- (b) Explain transistor as an oscillator. 5

UNIT - III

- 6. (a) Explain the Voltage Divider Biasing circuit. 8
- (b) Describe Miller's theorem. 7

- 7. What are the importance of H-parameters. Convert & explain CE configuration to equivalent hybrid model.

15

UNIT - IV

- 8. (a) Explain transfer characteristics of FET. 5
- (b) Explain completely enhancement mode of MOSFET. 10
- 9. Write a short note on : 5 × 3 = 15
 - (a) Optocoupler
 - (b) Laser Diodes
 - (c) TRIAC