

BASIC ELECTRONICS

2nd Exam/ECE/ETV/ECEII/COMP/CSE/IT/EEE/0664/2661/Nov'17

Duration: 3Hrs.

Marks:75

SECTION-A

Q1. Fill in the blanks.

1.5x10=15

- a. The input impedance of a FET is _____ than that of BJT.
- b. $I_{CEO} = \text{_____} I_{CBO}$.
- c. The process of adding impurities is called _____.
- d. The turn on voltage in a silicon diode is _____.
- e. A zener diode is always operated in _____ region.
- f. Holes are _____ carriers in N-type semiconductors.
- g. When the gate terminal of MOSFET is positive it is said to operate in _____.
- h. The unit of h_{ie} is _____.
- i. In a transistor there are _____ PN junctions.
- j. The point of intersection of dc and ac load line is called _____.

SECTION-B

Q2. Attempt any five questions.

5x6=30

- i. What is ripple factor? How it can be minimized?
- ii. Explain zener diode as a voltage regulator.
- iii. Explain intrinsic and extrinsic semiconductors.
- iv. Give construction and working of MOSFET.
- v. Explain the working of half wave rectifier.
- vi. Draw the circuit diagram of CE amplifier. Explain briefly.
- vii. What do you mean by h parameters of a transistor? Explain briefly.

SECTION-C

Q3. Attempt any three questions.

3x10=30

- a. Explain construction of NPN transistor. Explain how it can be used as amplifier.
- b. Discuss energy band structure for insulators, semiconductors and conductors.
- c. Write a short note on **(any two)**
 - i. Filter circuits
 - ii. AC and DC load line
 - iii. Avalanche breakdown
- d. What are various transistor biasing circuits? Compare their advantages and disadvantages.
- e. With the help of a diagram, explain the working of a bridge rectifier.