

S.B. Roll No.....

### BASIC ELECTRONICS

2<sup>nd</sup> Exam/ECE/ECE-II/ETV/Comp/IT/CSc./EEE/0664/Nov'18

Duration: 3Hrs.

M.Marks:75

#### SECTION-A

**Q1. Fill in the blanks.**

**15x1=15**

- a. The value of knee voltage of a Germanium diode is \_\_\_\_\_ volts.
- b. The electrons in the outermost orbit are called \_\_\_\_\_.
- c. Holes are \_\_\_\_\_ carriers in the p-type semiconductors.
- d. MOSFET is a \_\_\_\_\_ controlled device.
- e. A zener diode is always operated in \_\_\_\_\_ region.
- f. When pn junction is heavily doped, its breakdown voltage wills \_\_\_\_\_.
- g. FET is \_\_\_\_\_ polar device.
- h. The smaller the stability factor, the \_\_\_\_\_ will be the thermal stability of the circuit.
- i. If the arrow points outward, the transistor is an \_\_\_\_\_.
- j. The best biasing method is achieved by adopting \_\_\_\_\_ biasing circuit.
- k. BJT stands for \_\_\_\_\_.
- l. CMOS stands for \_\_\_\_\_.
- m. Current amplification factor of CB is \_\_\_\_\_.
- n. The meaning of hybrid is \_\_\_\_\_.
- o. Output signal frequency of full wave rectifier is \_\_\_\_\_ of input signal.

#### SECTION-B

**Q2. Attempt any six questions.**

**6x5=30**

- i. Explain the need for Stabilization of the Operating Point.
- ii. Discuss the advantages of FET over Conventional transistor.
- iii. Explain the effect of temperature on conductivity of intrinsic semiconductor.
- iv. Write a note on tunnel diode.
- v. Draw circuit of half wave Rectifier and explain its working. Draw the output waveform.
- vi. What do you mean by thermal runaway?
- vii. Draw and explain Filter Circuits.
- viii. What is Zener Diode? Explain its Applications.

#### SECTION-C

**Q3. Attempt any three questions.**

**3x10=30**

- a. Draw and Explain the Common emitter Configurations Characteristics.
- b. Explain construction and working principle of FET. Draw the neat diagram.
- c. Write note on PN Junction and its biasing. Difference between the n-type and p-type semiconductor.
- d. Explain in detail different types of biasing.
- e. Write short notes on the following. **(any two)**
  - i. LED
  - ii. Avalanche breakdown
  - iii. Schottky Diode