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Total No. of Pages : 02

Total No. of Questions : 07

B.Sc.(CS) (2013 &amp; Onwards) (Sem.-5)

**ELECTRONICS**

Subject Code : BCS-504

M.Code : 72577

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

**SECTION-A****1. Answer briefly :**

- a. Give the difference between Intrinsic and Extrinsic Semiconductors.
- b. Draw the V-I characteristics of PN diode.
- c. What is the need for modulation?
- d. What is ripple factor?
- e. Why CE configuration is most popular in amplifier circuits?
- f. What is the need of biasing?
- g. What are hybrid capacitances?
- h. What is the Barkhausen criterion of sustained oscillation?
- i. Give the comparison between AM and FM.
- j. Why positive feedback is necessary to produce oscillation?

### SECTION-B

2. Differentiate between P-type and N-type Semiconductors. Also name the doping materials used for their formation.
3. Explain the construction and working of MOSFET.
4. Compare Characteristics of Transistors in its various modes of Operation. Also state which is best Configuration among these?
5. Explain the principle of the working of RC Oscillator Circuit.
6. Draw the voltage divider bias circuit and derive the expression for its stability factor.
7. A sinusoidal carrier voltage of frequency 1.2 MHz is amplitude modulated by sinusoidal voltage of frequency 20KHz resulting in maximum and minimum modulated carrier amplitude of 110V and 90V respectively. Find :
  - a. Frequency of lower & upper side bands
  - b. Modulation Index
  - c. Amplitude of each side band

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**