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Total No. of Pages : 02

Total No. of Questions : 18

**B.Tech. (EE) PT (Sem.-2)**  
**ELECTRONICS DEVICES AND CIRCUITS**  
**Subject Code : BTEE-304**  
**M.Code : 71537**

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 & C. have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying EIGHT marks each.
4. Select atleast TWO questions from SECTION - B & C.

**SECTION-A**

**Write briefly :**

1. What do you mean by ripple factor? Explain.
2. Define the term diffusion.
3. Compare BJT and MOSFET.
4. Why depletion layer is developed in a diode?
5. Define ICBO and ICEO. HOW they are different?
6. Write down the basic requirements for the oscillation to occur.
7. List the ideal characteristics of an Op-Amp.
8. What do you mean by feedback? List the effects of negative feedback.
9. How power amplifier is different from voltage amplifier? Discuss.
10. What do you mean by integrated circuit? Explain.

### SECTION-B

11. Draw the circuit diagram and explain the working of full wave rectifier using bridge connections. Explain why a bridge rectifier is preferred over centre-tap rectifier.
12. Describe the basic structure and operation of an FET. Also draw and explain the V-I characteristics of FET.
13. Discuss the working of voltage to current and current to voltage converter using operational amplifier.
14. Draw the circuit diagram and explain in detail first order high pass and band stop active filters.

### SECTION-C

15. Discuss in detail the working of switched mode power supply.
16.
  - a) Draw and discuss CB transistor configuration. Also draw and explain its input and output characteristics.
  - b) Discuss the circuit diagram and working of Astable multivibrator.
17. Draw and explain the basic principle, construction and characteristics of :
  - a) Zener Diode
  - b) Varactors Diode
18. Discuss the following :
  - a) Colpitts oscillator
  - b) Operational amplifier as an integrator and Schmitt trigger.

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