Roll No. | | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 18

B.Tech. (ECE) (2018 Batch) (Sem.–3)

ELECTRONIC DEVICES

Subject Code : BTEC-301-18

M.Code : 76444

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 FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

Write briefly :

1. Explain why extrinsic semiconductors are required? Draw the energy band diagram of extrinsic and intrinsic semiconductors.

2. Explain the difference between diffusion current and drift current.

3. Explain the working of a transistor as a switch.

4. What are different types of diode? Draw symbols of each.

5. Give the V-I characteristics of PN diode.

6. State the relation between mobility and resistivity.

7. Define Transconductance of MOSFET.

8. What is pinch off voltage?

9. What is the difference between tunnel diode and normal diode?

10. What is sheet resistance?

SECTION-B

11. What is the use of Ebers-Moll model for PNP?

12. Compare ion implantation process with diffusion.

13. What is a solar cell and how does it work?

14. What do you mean by small signal switching models?

15. What do you mean by annealing? Why it is required in IC fabrication process?

SECTION-C

16. Explain the construction and working of e-MOSFET.

17. Discuss all the steps involved in fabrication of CMOS.

18. What is etching? Explain its different types and state advantages and demerits of each.

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