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

Total No. of Questions : 09

B.Tech.(ECE) (Sem–3)

ELECTRONIC DEVICES

Subject Code : BTEC-301-18

M.Code : 76444

Date of Examination : 01-06-2023

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

1. Write Briefly :

a) Distinguish between Intrinsic and Extrinsic semiconductors.

b) What is the atomic structure of silicon?

c) What is meant by 'static resistance' and 'dynamic resistance' of a junction diode?

d) What is meant by avalanche breakdown?

e) What is a P-N junction?

f) What is thermal runaway in BJT?

g) What is solar cell?

h) How Zener diode can be used as a voltage regulator?

i) Why emitter is always forward biased?

j) What is annealing in fabrication?

SECTION-B

2. What is varactor diode and draw its symbol? Explain its V-I characteristics.
3. Explain the diffusion current and drift current.
4. Explain how ideal diode work as switch. Draw its equivalent circuit.
5. What is construction process of Depletion-type MOS?
6. Explain the process of photolithography.

SECTION-C

7. Compare the three configurations of transistor: CE, CB and CC.
8. Explain the construction and working of I-V characteristics of MOSFET.
9. Write short note on the following :
   a) Ebers Moll model
   b) Tunnel diode

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.