D 53653 **(Pages : 2)** **Name.....**

Reg. No.....

FIRST SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2023

Electronics

ELE 1C 01—ELECTRONIC DEVICES

(2019—2023 Admissions)

Time : Two Hours Maximum : 60 Marks

Section A

Answer the following questions.
Each question carries 2 *marks.*

1. What is an Inductor ? What is the unit of inductance ?
2. Give the primary uses of capacitors.
3. Why the temperature coefficient of resistance of semi-conductor is negative ?
4. How depletion region is formed in a PN juction diode ?
5. What is Doping ? Why is it important ?
6. What are LDRs ? What are their uses ?
7. Define α (alpha) of a transistor ?
8. What do you mean by collector reverse saturation current ?
9. For a PNP transistor in the active region, what is the sign of (positive or negative) of I_C, I_B, I_E and V_{CE} ?
10. Why FET is known as a unipolar device ?
11. Define transconductauce of an FET.
12. Give the typical application of UJT.

(Ceiling : 20 marks)

Turn over

Section B

Answer **all** *questions.*
Each question carries 5 *marks.*

13. Explain the colour coding of resistors.

14. What are the majority current carriers in an N-type semiconductor ? Why should there be any holes in this material ?

15. Explain with diagrams, the forward characteristics of a PN junction diode.

16. Sketch the structure of an NPN transistor. Label the different regions and the mark the two junctions.

17. Sketch the typical CE output characteristics curves of an NPN transistor.

18. Discuss the structure of an N- channel FET.

19. Explain the characteristics of a UJT.

(Ceiling : 30 marks)

Section C

Answer any **one** *question.*
The question carries 10 *marks.*

20. Explain the working of an PNP transistor with neat diagrams.

21. Explain the transcoductance model of an N channel JFET.

(1 × 10 = 10 marks)