

S.No. 15045

16 SCCEL 1

(For candidates admitted from 2016–2017 onwards)

B.Sc. DEGREE EXAMINATION, APRIL 2021.

Part III — Electronics — Major

ELECTRONIC DEVICES

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20)

Answer ALL the questions.

1. Specify the colour code for the following resistor values :
 - (a) $4.3 \text{ K}\Omega \pm 2\%$
 - (b) $3.6 \Omega \pm 10\%$.
2. Draw the series and parallel connection of Inductor.
3. Define Acceptor impurities.
4. Give some applications of zener diode.
5. Draw the current symbols for NPN and PNP transistor.
6. List out the methods of Biasing in BJT.

7. Give two applications of MOSFET.
8. Draw the symbol and Basic construction of DIAC.
9. Write any two advantages of Avalanche photo diode.
10. Give some applications of LED.

SECTION B — (5 × 5 = 25)

Answer ALL the questions, choosing either (a) or (b).

11. (a) Describe the important specifications of a resistor.

Or

- (b) With neat sketches, describe the constructional details of Electrolytic Capacitor.

12. (a) Explain what do you mean by donor and acceptor impurities.

Or

- (b) Sketch and explain the V-I characteristic of Zener diode.

13. (a) Why is the base of transistor made thin and is lightly doped?

Or

- (b) Give analysis of voltage-divider bias.

14. (a) With neat diagram explain the working of a Enhancement mode in MOSFET.

Or

- (b) Give the difference between SCR and TRIAC.
15. (a) Write short notes on photo electric theory.

Or

- (b) With the neat diagram explain the construction of photoconductive cell.

SECTION C — ($3 \times 10 = 30$)

Answer any THREE questions.

16. List out the classification of Inductors and give a brief account on each type.
17. Discuss the behavior of PN Junction diode under Forward and reverse biased conditions.
18. With the circuit diagram, explain the operation of an NPN bipolar junction transistor.
19. Explain the operation and V-I characteristics of SCR.
20. With the neat diagram explain how a photovoltaic cell generates electricity when irradiated by sunlight.