

S.No. 5331

16 SNMIEL 1

(For candidates admitted from 2016-2017 onwards)

U.G. DEGREE EXAMINATION, APRIL 2022.

Part IV — Electronics — Non-Major Elective

PRINCIPLES OF ELECTRONICS

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20)

Answer ALL questions.

1. What is Fixed Resistor? List out its types.
2. Draw the symbol of capacitor and inductor.
3. Define Extrinsic semiconductor.
4. What is a PN junction?
5. Draw the current symbols of a NPN and PNP transistors.
6. Define input characteristics of a common Emitter configuration.
7. Define the term Transfer characteristics of JFET.

8. List the advantages of FET over bipolar transistor.
9. Define Bidirectional thyristors.

10. Give any two application of TRIAC.

PART B — ($5 \times 5 = 25$)

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

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

Or

- (b) What are the different types of inductors? Give some important applications of inductors.

12. (a) What is meant by Intrinsic semiconductor.

Or

- (b) Explain forward characteristics of PN junction diode.

13. (a) With the neat diagram explain the construction of NPN transistor.

Or

- (b) Define the input and output characteristics of CE transistor.

14. (a) Explain the construction of JFET with the neat diagram.

Or

- (b) Briefly explain structure of a depletion type MOSFET.

15. (a) Explain four modes of TRIAC operation.

Or

- (b) List out some application of DIAC.

PART C — ($3 \times 10 = 30$)

Answer any THREE questions.

16. Briefly explain the types of fixed capacitor.

17. With the neat energy band diagram explain the P-type semiconductor.

18. Describe the operation of PNP transistor.

19. Define the following terms of a JFET.

- (a) The pinch off voltage

- (b) Channel ohmic region

- (c) Drain resistance

- (d) Transconductance

- (e) I_{DSS}

20. Explain the construction and working of a DIAC.