



C20-EC-105

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7032

**BOARD DIPLOMA EXAMINATION, (C-20)
OCTOBER/NOVEMBER—2023
DECE – FIRST YEAR EXAMINATION**

ELECTRONIC COMPONENTS AND POWER SUPPLIES

Time : 3 Hours]

[Total Marks : 80

PART—A

3×10=30

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Define the term capacitance.
2. List any three applications of R.F chokes.
3. Draw the circuit symbols of SPST, SPDT and DPST.
4. List the materials used in soldering.
5. Compare P-type and N-type semiconductors.
- * 6. Define drift and diffusion currents.
7. Distinguish between Avalanche and Zener breakdowns.
8. Draw the circuit for transistor as a switch.
9. Write classification of field effect transistors.
10. State the need for a regulated power supply.

PART—B

8×5=40

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- Instructions :** (1) Answer **all** questions.
(2) Each question carries **eight** marks.
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. (a) Explain the use of ferrites in the construction of high frequency inductors. 8

(OR)

(b) Explain colour coding of resistor with example. 8

12. (a) (i) Explain the necessity of connectors in electronic circuits. 4

(ii) List the steps involved in making double-sided PCB. 4

(OR)

(b) (i) List the specifications of relays. 4

(ii) List the steps involved in screen-printing for making PCBS. 4

13. (a) (i) Explain semiconductor materials using energy band diagram. 4

(ii) Explain reverse breakdown phenomenon. 4

(OR)

(b) (i) Compare conductors, semiconductors and insulators. 4

(ii) Explain the formation of PN junction diode. 4

* **14.** (a) Draw and explain the drain characteristics of JFET. 8

(OR)

(b) Explain the construction and working of N channel enhancement type MOSFET. 8

15. (a) Explain the working of half wave rectifier with wave form. 8

(OR)

(b) Explain the working of a simple Zener regulator. 8

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PART—C

10×1=10

- Instructions :** *
- (1) Answer the following question.
 - (2) The question carries **ten** marks.
 - (3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

16. Draw the input/output characteristics of CB, CE and CC configurations and also identify the cut off, active and saturation regions.

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