



C20-BM-106

7015

**BOARD DIPLOMA EXAMINATION, (C-20)
OCTOBER/NOVEMBER—2023**

DBME – FIRST YEAR EXAMINATION

ELECTRONIC COMPONENTS AND DEVICES

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. List the ratings of resistor.
2. Write any three differences between conventional circuits and PCBs.
3. Classify the switches.
4. Define drift current.
5. State the effect of temperature on semiconductor.
6. Define PIV of a diode.
7. State the need for filters in rectifier circuits.
8. Write the specifications of a transistor.
9. Define stability factor.
10. List the applications of FET.

- 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 resistor colour coding for carbon resistors.

(OR)

(b) Define the terms (i) mutual inductance, (ii) self-inductance, (iii) dielectric strength and (iv) dielectric constant.

12. (a) Draw and explain the formation of P-N junction.

(OR)

(b) Draw and explain V-I characteristics of Zener diode.

13. (a) Draw and explain working of half wave rectifier.

(OR)

(b) Derive the expression for ripple factor and efficiency for full wave rectifier.

14. (a) Explain the construction and working of NPN transistor.

(OR)

(b) Compare the characteristics of transistor in CB, CE and CC configurations.

15. (a) Draw and explain the drain characteristics of JFET.

(OR)

(b) Explain the working of enhancement MOSFET.

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. How to stabilize the output of transistor amplifier circuit? Justify your answer.

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