

7258

BOARD DIPLOMA EXAMINATION, (C-20)

MAY—2023

DME - THIRD SEMESTER EXAMINATION

BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

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 Ohm's law and state the laws of resistance.
2. State Fleming's Right-hand rule.
3. Classify DC generators on the basis of excitation.
4. List any six applications of 3-phase induction motors.
5. Compare moving coil and moving iron type measuring instruments in any three aspects.
6. What are the essential torques of indicating instruments?
7. State the effects of electric shock and burns.
8. State the need for earthing of electrical equipment and machinery.
9. Distinguish between intrinsic and extrinsic semiconductors in any three aspects.
10. Draw the symbol of NPN and PNP transistors.

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PART—B

8×5=40

- 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) State and explain Kirchhoff's laws with legible sketch.

(OR)

(b) Explain single-phase AC series RC circuit and draw a vector diagram.

12. (a) Explain the working of welding transformer with a circuit diagram.

(OR)

(b) Explain the construction and working principle of DC generator with a neat sketch.

13. (a) Explain the construction and working of induction type single-phase energy meter with a neat sketch.

(OR)

(b) Describe the construction and working of attraction type moving iron measuring instrument with a neat sketch.

* **14.** (a) Describe the procedure of pipe earthing with a neat sketch.

(OR)

(b) Explain the first aid methods to be followed after electrocution.

15. (a) Explain and draw the input and output characteristics of common emitter configuration.

(OR)

(b) Explain the working of PN junction diode with forward and reverse bias. Draw its characteristics.

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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.** Explain the construction and working principle of DC motor with a neat sketch.

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