

**7258**

**BOARD DIPLOMA EXAMINATION, (C-20)**

**NOVEMBER/DECEMBER—2022**

**DME – THIRD SEMESTER EXAMINATION**

**BASIC ELECTRICAL ELECTRONICS ENGINEERING**

*Time : 3 hours ]*

*[ Total Marks : 80*

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**PART—A**

3×10=30

- Instruction :** (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. State the Fleming's left-hand rule.
2. Write the relation between P, Q, S in an AC source.
3. What are the three methods of speed control of DC motors?
4. State the necessity of earthing for electrical equipment.
- \* 5. List out the applications of Universal motor and AC series motor.
6. Compare moving coil with moving iron instruments in any six aspects.
7. Define the meter constant.
8. List any two types of burns that generally occur.
9. Define the avalanche breakdown in Zener diode.
10. List the three possible transistor configurations.

**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) Draw the phasor and vector diagrams of R-L and R-C circuits.

**(OR)**

(b) Define the terms self-inductance, mutual inductance and coefficient of coupling and give the relation between them.

**12.** (a) Describe the working principle of single phase capacitor type induction motor.

**(OR)**

(b) Describe the working principle of a single phase transformer.

**13.** (a) Describe the construction and working of repulsion type moving iron measuring instrument.

**(OR)**

(b) Describe the construction of single phase energy-meter and mention the error that occurs.

\* **14.** (a) Explain the steps involved in mouth to mouth resuscitation method.

**(OR)**

(b) Explain the pipe earthing with a legible sketch.

**15.** (a) Explain V-I characteristics of PN diode under no bias and forward bias conditions.

**(OR)**

(b) Explain the formation of PNP and NPN transistors.

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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.** Suggest and explain an earthing system used for a power plant.

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