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7258

BOARD DIPLOMA EXAMINATION, (C-20)

OCTOBER/NOVEMBER—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. State the laws of resistance.
2. State Fleming's right hand rule.
3. State the methods of speed control of DC motors.
4. List any six applications of single-phase induction motor.
5. List the types of electrical measuring instruments.
6. Define controlling torque and damping torque in indicating instrument.
7. List any three reasons for electric shock.
8. What are the effects of electric shock in a human body?
9. Draw the symbols of diode, Zener diode and LED.
10. List the different transistor configurations.

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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) State and explain Kirchhoff's laws.

(OR)

(b) Explain statically induced EMF and dynamically induced EMF.

12. (a) Explain the construction and working of welding transformer with a neat sketch.

(OR)

(b) Explain the construction and working of single-phase induction motor.

13. (a) Explain the construction and working of repulsion type moving iron instrument.

(OR)

(b) Explain the working of dynamometer type wattmeter.

14. (a) Explain the procedures to be adopted to avoid electric shock.

(OR)

(b) Explain the procedure of plate earthing with a neat diagram.

15. (a) Explain the working of LED.

(OR)

(b) Explain the input and output characteristics of common collector configuration.

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PART—C

10×1=10

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- 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 nature of power factor for pure resistor, pure inductor and pure capacitor.

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