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C16-RAC-M-305

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BOARD DIPLOMA EXAMINATION, (C-16)

JUNE/JULY—2022

DME - THIRD SEMESTER EXAMINATION

BASIC ELECTRICAL ENGINEERING AND ELECTRONICS

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. State the laws of resistance.
2. State Lenz's law.
3. Write any six main parts used in DC generators.
4. List any six applications of DC motors.
5. What is the power and power factor in a pure inductive AC circuit?
6. Write the types of starters used for AC motors.
7. List any six applications of single-phase induction motors.
8. What are the majority and minority carriers in P-type and N-type materials?
9. Draw the connection diagram of single-phase energy meter with load.
10. What is the purpose of earthing of electrical equipment?

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PART—B

10×5=50

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

11. Explain statically induced EMF and dynamically induced EMF.
12. Explain the phenomenon of storing of energy in a magnetic field.
13. Explain the principle of operation of DC motor.
14. Explain the construction and working principle of alternator.
15. Explain the working principle of single-phase induction motor.
16. Explain the working of PN junction diode in forward bias and reverse bias.
17. Explain the construction and working principle of moving coil voltmeter.
18. (a) Draw the schematic diagram of DC short shunt compound generator and write the relation between voltages and currents in it.
(b) Explain RMS value and average value.

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