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C16–M—402

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BOARD DIPLOMA EXAMINATION, (C–16)

MARCH/APRIL—2018

DME—FOURTH 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.

2. State Kirchhoff's laws.

3. Define *(a)* magnetic field strength, *(b)* flux and *(c)* permeability.

4. Draw the connections of a welding generator.

5. State the necessity of starters in DC motors.

6. Write the relation between line and phase values of star connection.

7. Define phase and phase difference.

8. Write any three advantages of poly-phase systems over single-phase system.

9. List any six applications of 3-phase induction motors.

10. State the purpose of earthing in electrical equipments.

PART—B 10×5=50

Instructions : (1) Answer *any* **five** questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Explain dynamically and statically induced e.m.f.

12. Derive an expression for the energy stored in a magnetic field.

13. Explain the construction and working principle of DC generators.

14. Explain the working of 3-point starter with a neat sketch.

15. Define the terms *(a)* time period, *(b)* frequency, *(c)* form factor, *(d)* average value and *(e)* RMS value. 2×5=10

16. Explain the construction and working of a transformer.

17. Explain the working of single-phase induction motors with relevant circuit diagrams.

18. Draw the sketch of a single-phase induction-type energy meter and explain its working.

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