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C09–M–304/C09–CHST–**304**

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BOARD DIPLOMA EXAMINATION, (C–09)

OCT/NOV—2016

DME—THIRD SEMESTER EXAMINATION

ELECTRICAL ENGINEERING AND BASIC ELECTRONICS

Time : 3 hours] [*Total Marks* : 80

PART—A 3×10=30

Instructions : (1) Answer **all** questions.

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

(3) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define electric flied intensity.

2. State Fleming's right-hand rule.

3. State Ohm's law.

4. Classify d.c. generators on the basis of excitation.

5. What is the significance of back e.m.f. in a d.c. motor?

6. Define RMS value.

7. State the working principle of alternator.

8. What are the indications of fully charged battery?

9. Distinguish between intrinsic and extrinsic semi-conductors.

10. What is the need of earthing of electrical equipment?

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. *(a)* State and explain Kirchhoff's laws.

(b) State the laws of resistance.

12. *(a)* If a coil of 1000 turns is linked with a flux of 2 Wb, when carrying a current of 5 A, calculate—

(i) self inductance of the coil;

(ii) energy stored in a magnetic field.

(b) Explain the speed control methods of d.c. motor.

13. *(a)* State the e.m.f. equation of d.c. generator. Write the notations.

(b) Explain 3-point starter with a neat sketch.

14. Explain the DOL starter of three-phase induction motor with a neat sketch.

15. Define the following terms for alternating quantity :

(a) Amplitude

(b) Cycle

(c) Time period

(d) Frequency

(e) Instantaneous value

(f) Average value

16. *(a)* Explain the working principle of single-phase induction motor.

(b) Compare the features of primary and secondary cells.

17. Explain in brief the working of PN junction with forward biased mode.

18. Draw a neat diagram of single phase induction type energy meter and explain.

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