



C09-M-304/C09-CHST-304

3248

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 field 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?

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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 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

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- * **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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