

3248
BOARD DIPLOMA EXAMINATION, (C-09)
MARCH/APRIL - 2019
DIPLOMA IN MECHANICAL ENGINEERING
ELECTRICAL ENGG & BASIC ELECTRONICS
THIRD SEMESTER EXAMINATION

Time: 3 Hours

Total Marks: 80

PART - A (10 x 3 = 30 Marks)

Note 1: Answer all questions and each question carries 3 marks

2: Answers should be brief and straight to the point and shall not exceed 5 simple sentences

1. Define mutual inductance and state its units.
2. Define electric field.
3. State Ohm's law.
4. State e.m.f equation of a DC generator.
5. State the working principle of a D.C. Generator.
6. State the working principle of a transformer.
7. State any 3 applications of a 3- phase induction motor.
8. State the indications of a fully charged lead acid battery.
9. List the materials used for making LED.
10. Draw the connection diagram of single- phase energy meter with load.

PART - B (5 x 10 = 50 Marks)

Note 1: Answer any five questions and each question carries 10 marks

2: The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer

11. A conductor is moving at 90° in a magnetic field of flux density 1.4 wb/m^2 . The length of the conductor is 125 cm and the velocity of conductor is 2.3m/sec. Find the emf produced in the conductor. Also find emf when velocity is 2.5m/sec.
12. Explain DC 3- point starter with a neat sketch.
13. a) Explain the working principle of a 1-phase induction motor.
b) List the types of 1-phase induction motor.
14. Explain phase and phase difference of alternating quantities.
15. Explain the working of a PN junction diode with forward bias and reverse bias.
16. Explain the construction and working principle of moving coil ammeter.
- 17A. Define
 - a) Magnetic Flux
 - b) Magnetic field strength and also Mention their unit.
- B. Draw a schematic diagram of a DC shunt motor and state the relation between voltages and currents.
- 18A. Explain the method of calculation of impedance, current, and power in R-C series circuit.
- B. Explain the construction of a lead- acid cell.