

1165**Code : 15EE-01E**Register
Number

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I Semester Diploma Examination, April/May-2017**BASIC ELECTRICAL AND ELECTRONICS
ENGINEERING****Time : 3 Hours]****[Max. Marks : 100**

- Note :** (i) Answer any **six** questions from Part-A. Each question carries **5** marks.
(ii) Answer any **seven** questions from Part-B. Each question carries **10** marks.

PART-A

1. List the effects of electric current. **5**
2. Define (i) Electric power (ii) Electrical Energy and mention their units. **5**
3. State Faraday's laws of Electro Magnetic Induction. **5**
4. Define (i) Time period (ii) Frequency w.r.t. an ac sine wave and mention their units. **5**
5. Explain the working principle of an A.C. Generator. **5**
6. What is a D.C. motor ? List the types of D.C. motors. **5**
7. Explain the necessity of Electrical Earthing. **5**
8. List the conditions of a fully-charged lead acid battery. **5**
9. What is a transistor ? Name the different types of transistors and write their symbols. **5**

PART - B

10. (a) State and explain Ohm's law. **4**
(b) Three resistances of 6Ω , 4Ω and 10Ω are connected in series, across a supply of 100 V, calculate
(i) Effective resistance of the circuit.
(ii) Total current in the circuit.
(iii) Current through each resistance. **6**

11. (a) Compare conductors and insulators. 5
 (b) A 100 watt lamp is used for 6 hours a day. Calculate 5
 (i) Energy consumed per month
 (ii) Cost of energy, if each unit costs ₹ 2.
12. (a) Define : 5
 (i) magnetic field
 (ii) magnetic flux
 (iii) magneto motive force
 (iv) flux density
 (v) Reluctance
 (b) Define the following terms :
 (i) Self induced emf
 (ii) Mutually induced emf
13. (a) Explain the construction of Transformer. 5
 (b) Define (i) capacitance (ii) impedance and state their units. 5
14. (a) What are the advantages of three phase power over single phase power. 5
 (b) Explain the construction of D.C. Generator ?
15. (a) What is the necessity of starter for 3-phase induction motor ? List the different types of starters. 5
 (b) What is an A.C. motor ? List the types of A.C. motors. 5
16. (a) Name the different types of mechanical enclosures and the importance of each. 5
 (b) What is a Fractional HP (FHP) Motor ? List any three application of a FHP motor. 5
17. (a) State any five general electrical safety precautions. 5
 (b) Explain the need of 5
 (i) MCB
 (ii) ELCB
18. (a) Explain the selection criteria of an Un-interrupted Power Supply (UPS). 4
 (b) Explain the working of a half wave rectifier with a neat diagram. 6
19. (a) Draw the logic symbol and write the truth table for
 (i) AND gate
 (ii) OR gate 6
 (b) What is a Relay ? List the types. 4

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