1456

Code : 15EE-01E

Register Number | | | | | | | |

I / II Semester Diploma Examination, April/May-2016

BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

Time : 3 Hours | **| Max. Marks : 100**

Note : (i) Answer any **Six** questions from Part-**A**. Each questions carries **5** marks.
(ii) Answer any **Seven** questions from Part-**B**. Each full questions carries **10** marks.

PART - A

1. List any five effects of electric current with an example. **5**

2. State Ohm's law and write the equations. **5**

3. Distinguish between statically induced and dynamically induced emf. **5**

4. Define :
   (a) Flux density, and
   (b) Reluctance.
   Mention their SI units. **5**

5. Define : (a) Frequency and (b) Time period. Mention their SI units. **5**

6. What is a transformer ? State its applications. **5**

7. Discuss the necessity of starters for three phase AC motors and list the types. **5**

8. What is a fuse ? List the types. **5**

9. What is a SCR ? Draw the symbol and list the applications of SCR. **5**

PART - B

10. (a) Define (i) Resistance (ii) Electric current mention their SI units. **4**

(b) Three resistances 4 Ω, 6 Ω and 8 Ω are connected in series across 120 V supply. Find :

(i) Effective resistance

(ii) Total current

(iii) Voltage drop across each resistance **6**

11. (a) Define electric power and write the three equations of electric power with current voltage and resistance. **4**

(b) A house consists of two bulbs of 100 W each, three bulbs of 60 W each and one fluorescent lamp of 40 W. If they are used for 4 hours a day. Find the monthly consumption charges at ₹ 2.70 per unit. **6**

12. (a) State Faraday's first and second laws of electromagnetic induction. **4**

(b) Explain the construction and working of a DC generator. **6**

13. (a) Draw a sinusoidal waveform and mark the following : **4**

(i) Maximum value

(ii) Instantaneous value

(b) The instantaneous value of current is given by i = 50 sin 520 t. Find :

(i) Maximum value

(ii) Frequency

(iii) Time period **6**

14. (a) What is an AC generator ? State its applications. **5**

(b) Explain briefly the selection of AC motors. List their industrial applications. **5**

15. (a) Explain the need for mechanical enclosures for motors. List the different types of mechanical enclosures. **5**

(b) What is FHP motor ? List the application of FHP motors. **5**

16. (a) State the advantages of 3ϕ AC motor. **5**

(b) Explain the necessity of protective device. List the types. **5**

17. (a) List any five general electrical safety precautions. **5**

(b) Explain the necessity of electrical earthing. List the types of earthing. **5**

18. (a) Differentiate primary and secondary batteries. **5**

(b) Explain P and N type semiconductors. **5**

19. (a) Define diode ? List the types and their applications. **4**

(b) Explain with neat sketch, working of half wave rectifier. **6**