

**1301****Code : 15EE01E**Register  
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**I/II Semester Diploma Examination, Nov./Dec. 2018****BASIC ELECTRICAL & ELECTRONICS ENGG.****Time : 3 Hours |****| Max. Marks : 100**

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

**PART – A**

1. Define : (i) Electric Current (ii) Resistance and mention their S.I. units. 5
2. State and explain Ohm's law. 5
3. Define with SI units : (i) Flux density (ii) Reluctance 5
4. Draw a sinusoidal waveform and mark the following on it. 5
  - (i) Maximum Value
  - (ii) Instantaneous Value
  - (iii) Cycle
  - (iv) Time Period
5. State five advantages of three phase power supply over single phase power supply. 5
6. What is DC motor ? List the types of DC motor. 5
7. Explain the necessity of earthing an Electrical Equipment. 5
8. List out different type switches with their symbols. 5
9. Draw the Logic symbol, write the truth table and Boolean Expression for the following logic gates : 5
  - (i) OR Gate (ii) NAND Gate

## PART - B

10. (a) State the sources of Electrical Energy. 4  
 (b) A 100 watt lamp is used for 6 hours a day and 40 watt lamp is used for 5 hours a day 6  
 Find : (i) Energy consumed per month  
 (ii) Cost of Energy if each unit costs ₹ 3.80
11. (a) Define : (i) Electric Power (ii) Electric Energy and mention the meters used to measure them. 4  
 (b) Three resistances of 8 ohms, 2 ohms and 6 ohms are connected in series across 50 V supply, 6  
 Find : (i) Effective Resistance  
 (ii) Total Current  
 (iii) Current in each Resistance  
 (iv) Voltage drop across each resistance.
12. (a) State Faraday's first and second laws of electromagnetic Induction. 4  
 (b) Explain the construction of DC Generator with a neat sketch. 6
13. (a) Define : (i) RMS Value (ii) Average Value 4  
 (b) Distinguish between self induced and mutually induced emf. 6
14. (a) Explain the construction of a Transformer. 5  
 (b) A Resistance of 10 ohms is connected in series with an inductance of 0.1 Henry. If this is connected across 200 V, 50 Hz, Ac supply. 5  
 Find : (i) Inductive reactance (ii) Impedance (iii) Power factor (iv) Current
15. (a) What is the importance of Name plate details of an AC Motor ? Give One example each for single phase and three phase AC motor. 5  
 (b) State five applications of DC motors. 5
16. (a) State the necessity of starters for three phase induction motors and list the types of starters. 5  
 (b) What is FHP motor ? List the applications of FHP motors. 5
17. (a) What is a fuse ? List the types. 4  
 (b) What is an UPS ? List the different types and give it's Rating. 6
18. (a) Mention the conditions of fully charged and discharged Lead Acid Battery. 4  
 (b) With a neat diagram explain the working of half wave rectifier. 6
19. (a) Explain the VI characteristics of Diode with suitable circuit. 5  
 (b) What is a Transistor ? Mention their types with their symbols. 5