

**DIPLOMA IN ELECTRICAL ENGINEERING  
(DELVI)**

**Term-End Examination**

00233

**December, 2016**

**BIEE-036 : ELECTRICAL INSTALLATION  
AND SYSTEMS**

*Time : 2 hours*

*Maximum Marks : 70*

---

*Note : Attempt any five questions. All questions carry equal marks. Use of scientific calculator is allowed.*

---

1. (a) What are the different types of wirings ?  
Give a brief comparison among them. 7
- (b) Explain the various factors affecting the selection of wiring schemes for domestic applications. 7
  
2. The maximum demand of a consumer is 20 A at 220 V and his total energy consumption is 8760 kWh. If the energy is charged at the rate of 20 paise per unit for 500 hours use of the maximum demand per annum plus 10 paise per unit for additional units (assume unity power factor), calculate
  - (a) the annual bill, and
  - (b) the equivalent flat rate. 14

3. (a) Explain staircase wiring in detail. 7
- (b) Explain the standard IS and IE rules for domestic installation. 7
4. (a) Why is fixed cost independent of maximum demand and units generated ? 7
- (b) Explain the effect of power factor on the cost of generation. 7
5. (a) Compare briefly the terms Domestic Service Connection and Industrial Service Connection. 7
- (b) Classify Substations. Draw the layout of any one. 7
6. (a) Explain single-line and multi-line wiring schemes in detail. 7
- (b) Discuss the various types of line support systems. 7

7. (a) What is the importance of estimation and costing? 4
- (b) Discuss the estimation and costing exercise for the installation of single-phase motors of different ratings in an industry. 10
8. Write short notes on any *two* of the following :  $2 \times 7 = 14$
- (a) Tenders and their Constituents
- (b) The Necessity of Earthing
- (c) Different types of Fans and their sizes
-