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BIEE-036

DIPLOMA IN ELECTRICAL ENGINEERING (DELVI)

Term-End Examination

December, 2015

BIEE-036 : ELECTRICAL INSTALLATION AND SYSTEMS

Time : 2 hours *Maximum Marks : 70*

Note : *Question no. 1 is* ***compulsory****. From questions no. 2 to 8 answer any* ***four*** *questions. All questions carry equal marks. Use of scientific calculator is allowed.*

1. (a) What is VIR wiring ? Where is it used ?

(b) In the domestic wiring, under what circumstances is the concealed wiring adopted ?

(c) What is ELCB ? What does it do ?

(d) Why are light/fan sub-circuit and power sub-circuit kept separate ?

(e) What should the clearance of overhead service line be from the ground level ?

(f) State why copper conductors are not used for transmission lines.

(g) Where are shackle insulators used ? *7×2=14*

2. (a) What is the importance of estimation and costing ? Discuss the types of estimation.

(b) With the help of examples, explain (i) electrical point method, and (ii) fixed percentage method. *7+7=14*

3. Make a comparison of different types of wiring on the basis of their salient features and applications. *14*

4. (a) State the importance of the layout of electrical installation.

(b) A consumer has annual consumption of 80,000 kWh. The charge is ₹ 125 per kW of maximum demand plus 10 paise per kWh.

(i) Find the annual bill and the overall cost per kWh, if the load factor is 40%.

(ii) What will be the overall cost per kWh, if consumption is increased by 20% with the same load factor ? *4+10=14*

5. (a) What is the importance of the wiring diagram ? Explain single line and multi-line wiring diagrams.

(b) Explain how a 2-wire d.c. distributor with concentrated loads fed at one end can be represented by a single line diagram. *7+7=14*

6. (a) Explain the term 'service connection'. Make a comparison of domestic service connection and industrial service connection.

(b) A factory has a distance of 35 m from the service pole and its load demand is 50 kW. What type of service connection should be provided to the factory ? Give reasons for your choice. *8+6=14*

7. (a) Classify substations. Explain each type of substation. Draw a layout of any one.

(b) What are the main items that comprise an overhead line ? *10+4=14*

8. Write short notes on any ***four*** of the following : $4 \times 3\frac{1}{2} = 14$

(a) Earnest money and Security deposits

(b) Preparation of comparative statement

(c) Necessity of earthing

(d) Various types of fans and their sizes

(e) Overhead vs Underground feeders