DIPLOMA IN VIEP-ELECTRICAL ENGINEERING (DELVI)

Term-End Examination

December, 2012

01641

BIEE-034 : ELECTRICAL POWER TRANSMISSION AND DISTRIBUTION

Time : 2 hours *Maximum Marks : 70*

Note : *Q No* **1** *is* ***compulsory.*** *Attempt* ***any four*** *question from Q No* **2** *to Q.No 8. All questions* ***carry equal*** *marks*

1. Choose the correct answer from the given alternatives. **2x7=14**

   (a) Characteristic impedance of an overhead transmission line is usually in the range of

   (i) 100 to 200 Ohms

   (ii) 200-300 Ohms

   (iii) 0 to 100 Ohms

   (iv) 400 to 500 Ohms

   (b) In a transmission system, the weight of copper used is proportional to

   (i) E^2 (ii) E

   (iii) $1/E^2$ (iv) 1/E

(c) The insulation resistance of a single-core cable is 150MΩ/km. The insulation resistance for 3km length is

(i) 16.67 MΩ (ii) 50 MΩ

(iii) 150 MΩ (iv) 450 MΩ

(d) Fault location and repairs in overhead lines as compared to underground system is

(i) easier

(ii) more difficult

(iii) both (i) and (ii)

(iv) none of the above

(e) Which of the following equipments is not installed in a substation?

(i) exciters

(ii) shunt reactors

(iii) voltage transformer

(iv) series capacitor

(f) The power factor of a open ended cable can improved by

(i) increasing its capacitance

(ii) decreasing the capacitance

(iii) increasing the conductor resistance

(iv) increasing the insulation resistance

(g) The presence of earth in case of overhead lines.

(i) increases the efficiency

(ii) increases the inductance

(iii) decreases the capacitance

(iv) decreases the inductance

2. (a) Explain the necessity of a stringing chart for a transmission line. 7

(b) What are the drawbacks of wooden poles? 7

3. (a) Discuss in brief various methods of ac distribution. 7

(b) Show that the insulation resistance of a cable is inversely proportional to its length. 7

4. Give layout of an indoor substation and describe briefly the function of each component used. 14

5. Discuss in detail the maintenance schedule of transmission lines. 14

6. (a) What are the possible reasons of poor power factor in an electric power system? 7

(b) Discuss various methods of improving power factor in electric power system? 7

7. (a) Discuss two part tariff used by electric supply companies. 7

(b) Explain any one method of earthing. 7

8. Write short notes on **any four** of the following : **3.5x4=14**

(a) erection of distribution lines

(b) hvac and hvdc transmission system

(c) Types of insulators used in transmission line

(d) Corona

(e) string insulators

(f) advantages of earthing