No. of Printed Pages : 4

BIEE-034

DIPLOMA IN ELECTRICAL ENGINEERING (DELVI)

00885

Term-End Examination

December, 2014

BIEE-034 : ELECTRICAL POWER TRANSMISSION AND DISTRIBUTION

Time : 2 hours *Maximum Marks : 70*

Note : *Attempt any* ***five*** *questions. Question no.* ***1*** *is* ***compulsory.***

1. Attempt the following multiple choice questions : *7×2=14*

(a) In India the transmission of electric power is done by

(i) 3-ϕ, 3 wire system

(ii) 3-ϕ, 4 wire system

(iii) 1-ϕ system

(iv) None of the above

(b) As a matter of economy, voltage for power transmission should be

(i) low

(ii) medium

(iii) high

(iv) None of the above

(c) When transmission voltage is increased, line losses are

(i) decreased

(ii) increased

(iii) same

(iv) None of the above

(d) The term 'service mains' refers to

(i) Primary transmission

(ii) Secondary transmission

(iii) Primary distribution

(iv) Secondary distribution

(e) A 3 wire d.c. distribution system makes available

(i) one voltage

(ii) two voltages

(iii) three voltages

(iv) None of the above

(f) A line which connects a consumer to the distributor is called

(i) feeder

(ii) distributor

(iii) service mains

(iv) None of the above

(g) The distribution transformer is generally connected in

(i) Delta/Delta

(ii) Delta/Star

(iii) Star/Star

(iv) Star/Delta

2. (a) Draw and explain the single line diagram of the layout of electric power system. 7

(b) Discuss overhead versus underground system for the distribution of electric power. 7

3. (a) Compare the HVDC and HVAC transmission system. 7

(b) A single-phase 10 km line is 8 m above the ground. The diameter of conductors is 2 cm and separated by 4 m horizontally. Find the

(i) Capacitance between the two conductors.

(ii) Capacitance between phase and neutral plane.

(iv) Capacitance when effect of ground is neglected. 7

4. (a) What are the different types of tariffs ? Discuss two part tariff. 7

(b) Draw and explain the layout of HT and LT distribution system. 7

5. (a) Estimate an 11 kV/440 V pole mounted substation. 7

(b) With the help of neat sketches explain the different types of distribution systems. 7

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

(i) 3-ϕ – 4 wire system

(ii) HVDC transmission

(iii) Disadvantages of low power factor

(iv) Corona

(v) Advantages of earthing