No. of Printed Pages : 4

BIEE-034

DIPLOMA IN ELECTRICAL ENGINEERING (DELVI)

Term-End Examination

00486

June, 2016

BIEE-034 : ELECTRICAL POWER TRANSMISSION AND DISTRIBUTION

Time : 2 hours *Maximum Marks : 70*

Note : *Attempt any* ***five*** *questions. Question no.* ***1*** *is* ***compulsory****. Use of scientific calculator is allowed.*

1. Attempt the following objective type questions : *7×2=14*

(a) Transmission efficiency increases as

(i) voltage and power factor both increase

(ii) voltage and power factor both decrease

(iii) voltage increases but power factor decreases

(iv) voltage decreases but power factor increases

(b) Corona effect can be detected by

(i) Hissing sound

(ii) Bluish glow around the conductor

(iii) Odour of ozone formation

(iv) All of the above

(c) Which of the following is ***not*** a form of tariff ?

(i) Two part tariff

(ii) Power factor tariff

(iii) Six part tariff

(iv) Flat rate tariff

(d) Bedding and serving term is associated with

(i) transformer

(ii) circuit breaker

(iii) underground cable

(iv) ACSR conductor

(e) In a short transmission line, which is ***not*** true ?

(i) Inductance is neglected

(ii) Resistance is neglected

(iii) Capacitance is neglected

(iv) All of the above

(f) Pole mounted distribution 11/0·4 kV transformer is usually connected in

(i) Delta / Star

(ii) Delta / Delta

(iii) Star / Delta

(iv) Star / Star

(g) Which of the following is ***not*** a type of earthing ?

(i) Flat earthing

(ii) Pipe earthing

(iii) Plate earthing

(iv) None of the above

2. (a) Compare the single-phase with the three-phase system. *7*

(b) Discuss the effect of wind and ice on sag in brief with the help of a diagram and expressions. *7*

3. (a) With the help of a neat cross-sectional view of an underground cable, explain the various sections of a cable. *7*

(b) Write an estimate of a 11 kV/440 V pole mounted substation. *7*

4. (a) What are the various faults that occur in an overhead and underground distribution line ? Which is the most common fault ? *6+1*

(b) Discuss the causes and disadvantages of low power factor. What are the methods of improvement of power factor ? *7*

5. (a) What is earthing ? State the various types of earthing and explain any one type of earthing with the help of a neat sketch. *2+2+3*

(b) The annual consumption of an undertaking is 5×10^6 kWh with a maximum demand of 1500 kW. Calculate the annual cost of energy, if tariff is a flat rate of ₹ 4·70/kWh. *7*

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

(a) HVDC transmission line

(b) Regulation of short transmission line

(c) LT distributor

(d) Stringing of transmission line

(e) Layout of 33/11 kV distribution substation