1086

Code : 9EE-43

Register Number | | | | | | | |

IV Semester Diploma Examination, Nov./Dec., 2014

TRANSMISSION AND DISTRIBUTION

Time : 3 Hours] **[Max. Marks : 100**

Note : (i) Section – **I** is *compulsory*.

(ii) Answer any **two** full questions from each of the remaining Sections – **II, III** and **IV**.

SECTION - I

1. (a) Fill in the blanks with suitable word / words : **5**
   (i) Transposition of transmission line balances _____ and _____.
   (ii) The entry of moisture into the insulation of cable is prevented by _____.
   (iii) To insulate sub-station from HT mains the switch gear used is _____.
   (iv) For both power and lighting loads _____ system of power distribution is used.
   (v) Lightning arrester is connected between _____ and _____.

   (b) Sketch and explain Horn gap type lightning arrester. **5**

SECTION - II

2. (a) Draw the neat sketch of A.C. Power System Network and state the standard voltages used in an Electrical Power System. **5**

   (b) Broadly classify the systems of Electrical Power Transmission and explain overhead and underground systems. **5**

   (c) Compare A.C. and D.C. Transmission systems. **5**

3. (a) With a neat sketch, explain transposition of overhead line conductors. **5**

   (b) (i) List the types of O.H. lines based on length of transmission line and voltage rating. **2**
   (ii) Draw the vector diagram for short transmission lines. **3**

   (c) A 3 phase transmission line has sending end voltage 120 kV and receiving end voltage 110 kV. The line impedance per phase is (8 + j10) Ω for the load power factor of 0.707 (lag). **5**

   Determine :
   (i) Power delivered
   (ii) Sending end p.f.

[Turn over

4. (a) What is Corona ? State the factors affecting Corona. 5

(b) With a neat sketch explain the construction of single core L.T. Cable. 5

(c) Mention the advantages and disadvantages of Direct laying system of U.G. Cable. 5

SECTION - III

5. (a) Explain errection of poles by Derrick pole method with a suitable sketch. 5

(b) Draw the single line diagram of HVDC Transmission and explain. 6

(c) State the different types of HVDC links. 4

6. (a) Draw the typical layout diagram of receiving station. 5

(b) Explain the maintenance of Receiving Stations. 5

(c) Describe the functions of load dispatch stations. 5

7. (a) Compare Outdoor and Indoor substations. 5

(b) Draw the layout of MUSS and identify the various units. 5

(c) Draw the sketch of duplicate Bus-Bar arrangement in substations. 5

SECTION - IV

8. (a) Explain : 5

(i) Feeders

(ii) Distributors and

(iii) Service mains in distribution systems.

(b) Sketch and explain Radial Distribution System. 5

(c) Compare O.H. and U.G. distribution systems. 5

9. (a) Define Voltage Surge. State the causes for Over Voltages. 5

(b) What is lightning arrester ? Explain the operation of lightning arrester. 5

(c) Explain principle and list the applications of Peterson coil. 5

10. (a) What is SCADA ? State the functions of SCADA in Power Systems. 5

(b) Draw the layout diagram of Typical Distribution Automation System. 5

(c) Explain the need for Distribution Automation. 5
