24141

B. Tech. 4th Semester (EEE) F. Scheme Examination,

May–2014

TRANSMISSION & DISTRIBUTION

Paper–EE–212–F

Time allowed : 3 hours] *[Maximum marks : 100*

Note : *Attempt **five** questions in all, selecting **one** question from each unit. **Question No. 1 is compulsory.** All questions carry equal marks.*

1. (a) Explain indoor substation. 20

(b) Explain proximity effect.

(c) Explain different insulating materials.

(d) Explain the advantages and limitations of DC links.

Section–A

2. (a) Explain the comparison between AC & DC system. 10

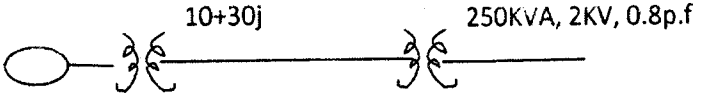
(b) Explain radial distribution system. 10

3. Draw neat and clean layout of 11 kV sub-station and explain the equipments in brief. 20

Section–B

4. Derive an expression for the flux linkages of one conductor in a group of n conductors carrying currents whose sum is zero. Hence derive an expression for inductance of composite conductors of a 1-phase line consisting of m strands in one conductor and n strands in the other conductors. 20

5. Determine the voltage at the generating station and the efficiency of transmission for the following 1-phase system :



Transformation ratio 2 kV/11 kV. The resistance on l.v. side is 0.04 ohm and h.v. side 1.3 ohm. Reactance on l.v. side and h.v. side is 0.125 ohm and 4.5 ohm. 20

Section–C

6. Explain the potential distribution over a string of suspension insulators. 20

7. Explain the methods of equalising the potential. 20

Section–D

8. Determine the corona characteristics of a 3-phase line 160 km long, conductor 1.036 cm, 2.44 m delta spacing, air temperature 26.67°, altitude 2440 m, corresponding to an approximate barometric pressure of 73.15 cm, operating voltage 110 kV at 50 Hz. 20

9. Explain the grading of cables in detail. 20