

B.Tech. (EEE) 4th Semester F. Scheme Examination,  
May-2015

**TRANSMISSION AND DISTRIBUTION**

**Paper-EE-212-F**

*Time allowed : 3 hours]*

*[Maximum marks : 100*

*Note : Question No. 1 is compulsory. Attempt five questions  
in total selecting one question from each unit.*

1. (a) Explain outdoor substation. 20
- (b) Explain Ferranti effect.
- (c) Explain function of damper.
- (d) Explain the advantages and limitations of DC links.

**Section-A**

- (a) What are the auxiliary supply explain them? 10
- (b) Explain ring main distribution system. 10
3. Draw neat and clean layout of 11kV sub-station and explain the equipments in brief. 20

**Section-B**

4. What is method of images? Derive an expression for the capacitance per unit length of a 3-phase line completely transposed. What is the effect of earth on the capacitance of the line? 20

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[P.T.O.]

5. Determine the efficiency and regulation of a 3-phase, 100km, 50Hz transmission line delivering 20MW at a power factor of 0.8 lagging and 66 kV to a balanced load. The conductor are of copper, each having resistance 0.1 ohm per km, 1.5 cm outside dia, spaced equilaterally 2 meters between centres. Neglect leakage and use (i) nominal-T, and (ii) nominal- $\pi$  method. 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. Derive the expression of critical visual dispersive voltage. 20
9. Explain the extra high voltage. 20