Total No. of Questions :6]

SEAT No. : ____

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TE/INSEM./OCT.-131

T.E. (Electrical)

ELECTRICAL INSTALLATION MAINTENANCE & TESTING

(2015 Course) (Semester - I)

Time : 1 Hour] ***[Max. Marks :30***

Instructions to the candidates:

1) ***Answer Q1 or Q2, Q3 or Q4, Q5 or Q6.***
2) ***Figures to the right side indicate full marks.***
3) ***Your answers will be valued as a whole.***
4) ***Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.***
5) ***Assume Suitable data if necessary.***

Q1) a) Compare Overhead and underground distribution system on basis of volume required for conductor. **[5]**

b) Explain the general design considerations of Distributor/Feeder. **[5]**

OR

Q2) a) State and Derive the Kelvin's Law. Also illustrate it graphically. **[5]**

b) A single phase distributor 2 km long supplies a load of 120 A at 0.8p.f. lagging at its far end and a load of 80A at 0.9 p.f. lagging at its mid point. Both power factors are referred to the voltage at the far end. The resistance and reactance per km are 0.05Ω and 0.1Ω respectively. If the voltage at far end is maintained at 230V, calculate: **[5]**

i) Voltage at sending end

ii) Phase angle between voltages at two ends.

P.T.O.

Q3) a) List the different bus bar arrangements used in the substation and explain any one with diagram. **[6]**

b) Explain with suitable diagrams **[4]**

i) Step Voltage and

ii) Touch Voltage

OR

Q4) a) Classify the substations and explain each in brief. **[4]**

b) Explain any one method of testing earth resistance with suitable diagram. **[6]**

Q5) a) Define and explain Polarization Index and Dielectric Absorption Ratio. **[4]**

b) What are different maintenance strategies? **[6]**

OR

Q6) a) What are the different insulation stressing factors? Explain them in brief. **[6]**

b) Give the necessity and importance of maintenance. **[4]**

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