

Total No. of Questions :6]

SEAT No. :

**P5685**

[Total No. of Pages :2

**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  $0.05\Omega$  and  $0.1\Omega$  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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