Total No. of Questions : 12] **SEAT No. :**

P2929 **[Total No. of Pages : 3**

[4958]-164
T.E.(Electrical)
ELECTRICAL INSTALLATION MAINTENANCE& TESTING
(2008 Course)(Semester-I) (303144)

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

Instructions to the candidates:

1) ***Answer Q1 or 2,Q3or 4, Q5 or 6 from Section -I and Q 7 or 8, Q 9 or 10, Q11 or 12 from Section-II.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data if necessary.***

SECTION-I

Q1) a) Compare 3 phase 4 wire AC overhead system with 3phase 3 wire AC overhead system on the basis of volume requirement for conductor material. **[8]**

b) State & explain Kelvin's Law and State the limitations of Kelvins Law.**[10]**

OR

Q2) a) Differentiate between. **[8]**

i) Feeder & Distributor

ii) Overhead line & Underground Cable

b) A 300m long distributor is fed at point A and loaded as 60A at 0.8pf lag and 85A at 0.9 lag pf at point B&C respectively. Point B is midpoint of feeder, power factors at both load points are referred to the voltage at point C. The impedance of each system is 0.2+j0.3. Calculate sending end voltage, current & power factor if voltage at point C is maintained at 230V. **[10]**

Q3) a) Define & Explain Touch, Step& Transferred potential. **[6]**

b) State the necessity & importance of substation grounding. State and explain the factors which affect the soil resistivity. **[10]**

OR

P.T.O.

Q4) a) What are the factors to be considered in design of earthing grid for substation. **[6]**

b) List the equipments used in the substation & Explain the function and technical specifications of each equipment. **[10]**

Q5) a) Explain different maintenance strategies like breakdown maintenance,planned maintenance and condition based maintenance. **[8]**

b) Explain the preventive maintenance of power transformer in detail. **[8]**

OR

Q6) a) Explain various insulation stressing factors in detail. Explain DC test for measurement of insulation resistance. **[8]**

b) Define & Explain w.r.t to condition monitoring **[8]**

i) Polarization Index

ii) Dielectric Absorption Ratio

SECTION-II

Q7) a) Explain Testing and condition monitoring of oil as per the IS/IEC standards. **[8]**

b) State the necessity to maintain purity of transformer oil. Explain with neat diagram,the process of Filtration of transformer oil. **[8]**

OR

Q8) a) What is Partial Discharge measurement? Explain its necessity? **[8]**

b) Explain Dissolved Gas Analysis used for Condition Monitoring of Transformer. **[8]**

Q9) a) State the various causes of cable failure. Explain in detail any two cable fault location methods. **[8]**

b) State any two causes of faults in induction motor & explain remedies for these faults. **[8]**

OR

Q10)a) Explain 'tan δ' measurement for condition monitoring of insulation. **[8]**

b) Explain Motor current signature Analysis. **[8]**

Q11)Explain constructions, working, troubleshooting and maintenance of . **[18]**

a) Water Pump,

b) Washing machines,

OR

Q12)Explain constructions,working, troubleshooting and maintenance of. **[18]**

a) Mixer

b) Electric Oven