Total No. of Questions : 8]

SEAT No. :

P2390

[Total No. of Pages : 3

[4758]-549

T.E. (Electrical)

ELECTRICAL INSTALLATION, MAINTENANCE & TESTING

(2012 Course) (End - Sem.)

Time : 2 ½ Hours] *[Max. Marks :70*

Instructions to the candidates:

1) ***Answer Q.No.1 or 2, Q.No.3 or 4, Q.No.5 or 6, Q.No.7 or 8.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
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) Explain the following maintenance strategies: **[8]**

i) Corrective maintenance

ii) Predictive maintenance

b) Write a short note on Degree of polymerization. **[6]**

c) State the Induction motor fault parameters. **[6]**

OR

Q2) a) What is condition based maintenance? State its advantages. **[8]**

b) State the reasons for the Insulation Degradation. **[6]**

c) Write a short note on Infrared Thermography in relation with condition monitoring of Induction motor. **[6]**

P.T.O.

Q3) a) Write a trouble shooting chart of transformer. **[8]**

b) State the various failure modes of power cables and explain any one fault diagnostic test to be conducted on power cables. **[8]**

OR

Q4) a) Explain the various abnormal condition in Induction Motor. **[8]**

b) Write a short note on testing of capacitor Bank. **[8]**

Q5) a) Differentiate between **[8]**

i) Feeder & Distributor

ii) Overhead Line & Underground line.

b) A 1Φ a.c distributor AB 300 m long is fed from end A and is loaded under **[10]**

i) 100 A at 0.707 pf lagging 200m from pt. A.

ii) 200 A at 0.8 pf lag 300m from pt. A.

The load resistance and reactance of the distributor is 0.2Ω and 0.1Ω per KM. Calculate the total voltage drop in the distributor. The load pf refer to the voltage at the far end.

OR

Q6) a) Explain the general design consideration of the Distribution feeder. **[8]**

b) A two conductor cable 1Km long is required to supply a constant current of 200A throughout the year. The cost of cable including installation is Rs (20a+20)/ meter where 'a' is the area of the cross section of conductor in cm^2. The cost of energy is 5 paise/KWH and the interest and depreciation charges amount to 10%. Calculate the most economical conductor size. Assume resistivity of conductor material to be 1.73μΩcm. **[10]**

Q7) a) Explain the following terms with their equivalent circuit **[6]**

i) Touch potential

ii) Step potential

b) Explain in detail the design of earthing grid of substation w.r.t IEEE standard 80-2000. **[10]**

OR

Q8) a) Write the general rules for the residential and commercial wiring work.**[6]**

b) State the general factors that should be considered in estimation of HT or LT lines. **[10]**

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