

Total No. of Questions :8]

SEAT No. :

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P2875

[4958] - 1064

T. E. (Electrical)

ELECTRICAL INSTALLATION, MAINTAINANCE & TESTING (EIMT)

(2012 Course) (Semester - I)

Time : 2½ Hours]

[Max. Marks :70

Instructions to the candidates:

- 1) *Answer the Q.1 OR Q2, Q3 OR Q4, Q5 OR Q6, Q7 OR Q8.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*

- Q1)** a) Explain breakdown maintainance and condition based maintainance. Give one example of each. [8]
- b) Explain the factors that reduce the breakdown strength of transformer oil. [6]
- c) Explain the abnormal operating conditions in induction motor. [6]

OR

- Q2)** a) Describe induction motor fault monitoring methods and remedies. [8]
- b) Enlist various failure modes of transformer. Explain failure due to structural defects. [6]
- c) What are the activities performed in preventive maintainance of induction motor. [6]

- Q3)** a) Enlist the methods of locating cable faults. Explain murray loop test with the help of neat diagram. [8]
- b) Explain type test of transformer. [8]

OR

P.T.O.

- Q4)** a) Describe various abnormal conditions in induction motor. [8]
b) Write short note on testing of capacitor bank. [8]

- Q5)** a) Differentiate between: [8]
i) Volume required for conductors in overhead system and volume of two wire d.c. system.
ii) Feeder and distributor
- b) The loads on 'R' phase distributor are as under: [10]
i) 200A, p.f. 0.707 lag, load at 100 mt:
ii) 150A, unity p.f, load at 250mt
iii) 80A, p.f. 0.8 lag, load at 400 mt.

All the loads are from feeding point. The resistance and inductive reactance are 0.5 ohm and 0.325 ohm per km, length respectively. Neglecting voltage drop in neutral wire, find the voltage across the load at far end. The voltage at feeding point is 240V.

OR

- Q6)** a) Explain the types of primary distribution. [8]
b) The cost of overhead transmission line is Rs $(35000a + 3500)$ per km, where 'a' is the area of cross section of each conductor in cm^2 . The line is supplying the load of 6mw at 33kv and p.f. 0.8 lagging. The average working hours are 20 hours per day in the year. Energy cost is Rs 2.00 per kwh. The cost of interest and depreciation is 10% per annum. Using kelvin's law find the most economical size of conductor. Specific resistance of conductor material is 10^{-6} ohm - cm. [10]

Also state the limitations of Kelvin's law.

- Q7)** a) Explain the types of substations. [8]
- b) Explain the function of the following equipment used in substations and state their locations. [8]
- i) Shunt capacitor
 - ii) Series capacitor
 - iii) Shunt reactor
 - iv) Surge arrestor

OR

- Q8)** a) Why earthing is necessary? Explain the types of earthing. [8]
- b) Explain various residential wiring methods. [8]

