

22625

12526

3 Hours / 70 Marks

Seat No. 

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- Instructions* –
- (1) All Questions are *Compulsory*.
  - (2) Answer each next main Question on a new page.
  - (3) Illustrate your answer with neat sketches wherever necessary.
  - (4) Figures to the right indicate full marks.
  - (5) Assume suitable data, if necessary.
  - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
  - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

1. Attempt any **FIVE** of the following: **10**
- a) State any four activity should be taken if person gets an electric shock.
  - b) State the four advantages of preventive maintenance.
  - c) State which factors consider while developing preventive maintenance schedule.
  - d) Define :-
    - i) Routine Test
    - ii) Type test.
  - e) State any four methods of cleaning of insulation of electrical machines.
  - f) List the different methods of testing of electrical machines.
  - g) List out factors affecting on life of insulation material.

P.T.O.



2. Attempt any THREE of the following: 12
- What precaution should be taken to avoid fire due to electrical reasons?
  - With the help of neat diagram explain the phasing out test on three phase Transformer.
  - Explain the use of each tool.
    - Bearing puller
    - Growler
    - Sprit level
    - Megger
  - What are different routine and type test of three phase transformer as per Indian standards?
3. Attempt any THREE of the following: 12
- State different methods of artificial respiration and explain Nielson's method shortly.
  - Describe the various factors affecting preventive maintenance schedule.
  - Explain with neat circuit diagram to perform No-load and Blocked rotor test on three phase Induction motor.
  - What are the factors to be considered in designing of the machine foundation?
4. Attempt any THREE of the following: 12
- State factors on which severity of shock depends?
  - Explain the procedure for leveling and alignment of electrical machines.
  - Explain the trouble shooting chart of three phase transformer for following trouble:
    - Overheating
    - Humming Noise
    - Sagging
    - Rusting of tank

- d) State different causes of contamination of transformer oil.
- e) Explain how SC test is performed on single phase transformer and how its result will find?
5. **Attempt any TWO of the following:** **12**
- a) What are the basic requirements of foundation for
- i) Static machines
  - ii) Rotating machines
- b) Draw and explain the procedure for back to back test on transformer (Sumpner's test)
- c) List the internal and external causes for failure of electrical equipment in details.
6. **Attempt any TWO of the following:** **12**
- a) List out the Routine test and Type test to be carried out on three phase induction motor as per IS-4029-1967 and IS 325-1961. Explain any one in detail.
- b) A short circuit test was carried out to find impedance and load losses on a 1 KVA, 230/115 V, 1 phase transformer and following are the observations on primary side:  
 $I_{sc} = 4.35 \text{ A}$ ,  $V_{sc} = 9 \text{ V}$ ,  $W_{sc} = 35 \text{ W}$ , Room temp,  $=30^\circ\text{C}$   
Then to find :-
- i) Impedance at  $75^\circ\text{C}$
  - ii) Impedance voltage at  $75^\circ\text{C}$
  - iii) Copper losses at  $75^\circ \text{C}$
- c) Explain the following test for transformer oil :- (Any two with neat diagram)
- i) Crackle test
  - ii) Dielectric strength test
  - iii) Acidity test
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