

22625

23242

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 answers with neat sketches wherever necessary.
(4) Figures to the right indicate full marks.
(5) Assume suitable data, if necessary.
(6) 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 the reasons for electrical accidents may happen.
 - b) State the meaning of type test. Give one example of type test.
 - c) State any four advantages of predictive maintenance.
 - d) List out factors affecting on life of insulation material.
 - e) List the different methods of drying of insulation.
 - f) State any four objectives of preventive maintenance.
 - g) List the different methods of testing of electrical equipment with its one example.
- 2. Attempt any THREE of the following:** **12**
- a) List out internal and external causes of failure of transformer.
 - b) Prepare the trouble shooting chart (probable reasons and remedies) for single phase induction motor.
 - c) List out the different fire extinguishers and state the advantages of CO₂ fire extinguisher.
 - d) Draw neat diagram and explain the polarity test on single phase transformer.

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- 3. Attempt any THREE of the following:** **12**
- a) Describe the various factors affecting preventive maintenance schedule.
 - b) Explain the need and steps to conduct the reduced voltage running up test on the three phase induction motor.
 - c) List out Do's and Don'ts to achieve safety for electrical supervisor while working in substation. (any four points)
 - d) What are the factors to be considered in designing of the machine foundation?
- 4. Attempt any THREE of the following:** **12**
- a) State and explain the properties of transformer oil. (any four)
 - b) With the help of neat diagram explain the phasing out test on transformer.
 - c) State the function of following maintenance tools.
 - i) Bearing Puller
 - ii) Dial tester
 - iii) Growler
 - iv) Filler Gauge
 - d) What are the causes of fire due to electrical faults? And what precautions to be taken to avoid fire due to electrical reasons.
 - e) Distinguish between O.C. test and S.C. test performed on transformer. (any four points)
- 5. Attempt any TWO of the following:** **12**
- a) Compare the difference between routine, preventive and breakdown maintenance.
 - b) Draw and explain the circuit diagram to perform no load and blocked rotor test on three phase induction motor.
 - c) Explain trouble shooting chart of 3 phase transformer. (any six troubles)

6. Attempt any TWO of the following:**12**

- a) List out the routine, type test and special test to be carried out on three phase induction motor as per IS-4029-1967 and IS-325-1961.
 - b) Explain with neat circuit diagram back to back test on single phase transformer to determine efficiency and regulation.
 - c) Explain the classification of insulating material as per IS-1271-1958. With class information, insulating material (any three class wise) and its maximum operating temperature.
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