

22625

22223

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) 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) List out any four factors influencing severity of electric shock.
  - b) Define : Routine and Preventive maintenance
  - c) Explain predictive maintenance.
  - d) List any two advantages of indirect testing of electrical machine.
  - e) Name any four contaminating agents of transformer oil.
  - f) State use of following maintenance tools:
    - i) Bearing puller
    - ii) Growler
  - g) List different methods of cleaning of insulation.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) State types of fire extinguishers with one application of each of them.
  - b) Write any four electrical and magnetic fault that occur in electrical equipment.
  - c) Explain the need to conduct reduced voltage running up test on three phase induction motor with neat diagram.
  - d) State the requirements of foundation of a transformer installation.
- 3. Attempt any THREE of the following:** **12**
- a) Compare installation earthing and neutral earthing on any four points.
  - b) List any eight factors that affect preventive maintenance schedule.
  - c) Explain with diagrams the synchronous impedance method of finding voltage regulation test on 3 ph alternator.
  - d) Prepare trouble shooting chart for 3 ph transformer with possible reasons and remedies for following troubles:
    - i) No output voltage
    - ii) Overheating of oil
- 4. Attempt any THREE of the following:** **12**
- a) State the procedure to rescue a victim who has received an electric shock.
  - b) Explain the steps involved to conduct no load test and blocked rotor test on 3ph induction motor with neat circuit diagram.
  - c) Explain with neat circuit diagram high voltage test conducted on a distribution transformer.
  - d) Explain dielectric strength test and flash point test on transformer oil with neat diagram.
  - e)
    - i) State the conditions to conduct back to back test on 3 ph transformer.
    - ii) List all the parameters that are obtained from back to back test.

- 5. Attempt any TWO of the following:** **12**
- a) Draw a neat diagram of foundation for rotating machine and label it.
  - b) Explain the steps to conduct winding resistance test on 3-phase distribution transformer with neat connection diagram.
  - c) Prepare preventive maintenance schedule for 3-ph induction motor.
- 6. Attempt any TWO of the following:** **12**
- a) Explain the procedure to test electrical machine by direct testing with neat circuit diagram. Write any two merits and de-merits of it.
  - b) Explain with diagram steps to determine temperature rise test on power transformer by open delta method.
  - c)
    - i) State need of drying of electrical equipment.
    - ii) Explain any one method of drying of electrical equipment with neat diagram.
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