

22328

24225

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) 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 two safety rules while working in electrical installation.
  - b) Give the classification of electrical engineering materials.
  - c) State the factors affecting the life of insulating material.
  - d) Define dielectric strength of insulating material.
  - e) State any two general rules for wiring to electrical installation.
  - f) Define earthing. State it's types.
  - g) State the material used for making –
    - i) Transformer core
    - ii) Electric iron.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) State any four IE rules regarding electrical safety.
  - b) Explain electrical and mechanical properties of aluminium and copper conductor.
  - c) State any four qualities of insulating materials.
  - d) Explain with neat circuit diagram for Godown wiring.
- 3. Attempt any THREE of the following:** **12**
- a) Distinguish between MCB and fuse.
  - b) State any two insulating materials of following types along with their area of application –
    - i) Class H
    - ii) Class C.
  - c) Explain the following wiring system –
    - i) Metal conduit wiring system
    - ii) Concealed wiring system.
  - d) Explain the use of following component in electrical wiring system and give specification of each –
    - i) ICTP
    - ii) MCB.
- 4. Attempt any THREE of the following:** **12**
- a) Explain the function of following components in electrical wiring system –
    - i) MCEB
    - ii) ELCB
    - iii) Cables
    - iv) DBS.
  - b) State any two properties and application of following magnetic materials –
    - i) Paramagnetic material
    - ii) Diamagnetic material.

- c) Explain CRGO and HRGO silicon steel materials.
- d) Draw a neat circuit diagram for below mentioned in electrical circuit, one lamp, one fan, one 5Amp pin socket controlled by separate switch.
- e) Draw and explain with neat labelled diagram plate earthing.

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

- a) State any two electrical, mechanical and chemical properties for conducting material.
- b) State the classification of insulating materials with type of material, use and their maximum operating temperature.
- c) Describe with a neat circuit diagram procedure of earth resistance for an electrical installation.

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

- a) Give the justification with diagram - "Earthing saves human life during electrical faults". State adverse effects of improper earthing system.
  - b) Explain the electrical and mechanical properties of insulating material.
  - c) Explain the factors selecting for electrical wiring system.
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