

22328

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) Write any four safety tools for working with electricity.
 - b) Define hysteresis loss.
 - c) Write the meaning of insulating material.
 - d) Enlist different methods of cable laying.
 - e) Write the importance of earthing.
 - f) Write the various properties which are to be considered while selecting conducting material.
 - g) State any four desirable properties of cable.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Enlist any four components with specification used in wiring system.
 - b) State any four applications of copper.
 - c) Explain any four adverse effects of improper earthing system.
 - d) Draw a labelled circuit diagram of a one lamp control by using one switch.
- 3. Attempt any THREE of the following:** **12**
- a) Compare between casing and capping system of electrical wiring (any four points)
 - b) Write the value of earth resistance for
 - i) Large power station
 - ii) Domestic wiring
 - c) With neat diagram explain staircase wiring.
 - d) Enlist any four thermal properties of insulating materials required to be considered.
- 4. Attempt any THREE of the following:** **12**
- a) Explain the use of safety rubber hand gloves and rubber mats in electrical engineering.
 - b) Differentiate between insulating materials and dielectric material. (any four points)
 - c) State different types of earthing.
 - d) Write any four properties and uses of the following
 - i) Brass
 - ii) Bronze
 - e) Write any four properties and uses of aluminium.

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

- a) Explain dielectric failure in solid insulating material.
- b) Explain the process of installing the given type of cables.
- c) Explain magnetization curve with neat sketch. Also draw hysteresis loops for
 - i) Hard steel
 - ii) Wrought iron
 - iii) Alloyed steel

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

- a) Write classification of insulating material according to their allowable working temperature.
 - b) Explain any one method of laying cable.
 - c) Explain the use of the following components in electrical wiring system and give specifications of each.
 - i) ELCB
 - ii) MCB
 - iii) RCB
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