

22328

11920

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) List the different types of switches.
 - b) Draw the labelled hysteresis loop for hard steel material.
 - c) State the causes for dielectric failure of highly purified transformer oil.
 - d) List any four applications of insulating material used in electrical fields.
 - e) Enlist four harmful effects of improper earthing.
 - f) State any two applications of gaseous insulating material used in switchgears.
 - g) State any two applications of
 - (i) Ferromagnetic
 - (ii) Paramagnetic material.

P.T.O.

- 2. Attempt ant THREE of the following: 12**
- a) State the causes of deterioration of liquid and solid dielectrics.
 - b) Explain the function of ELCB and ICDP switch. List two specifications of each.
 - c) Name any two applications of following gases.
 - (i) Nitrogen
 - (ii) Hydrogen
 - (iii) Sf6
 - (iv) Air.
 - d) Explain the suitability of copper as an electrical conductor with reference to its mechanical and electrical properties.
- 3. Attempt any THREE of the following: 12**
- a) State the use of following:
 - (i) Screw driver
 - (ii) Nose pliers
 - (iii) Wire gauge
 - (iv) Test lamp
 - b) Enlist types of electrical wiring systems. Explain casing and capping type wiring system.
 - c) Compare copper and alluminium on the basis of.
 - (i) Tensile strength
 - (ii) Conductivity
 - (iii) Specific gravity
 - (iv) Application
 - d) Describe with neat sketch any one type of earthing system.

- 4. Attempt any THREE of the following:** **12**
- a) State any four IE Rules to be followed in respect of safety while working on electrical installation system.
 - b) Classify magnetic materials with two examples each.
 - c) Draw neat diagram for Godown wiring.
 - d) Define “Magneto-striction”? State the causes for loss of magnetism.
 - e) Give one application of
 - (i) Mineral oil
 - (ii) Varnish
 - (iii) Synthetic oil
 - (iv) Vegetable oil
- 5. Attempt any TWO of the following:** **12**
- a) Explain the function of :
 - (i) DB
 - (ii) Socket
 - (iii) Cable
 - (iv) Switch
 - b) Explain following wiring systems.
 - (i) Concealed wiring
 - (ii) Metal conduit wiring
 - c) Describe with neat sketch the installation of plate earthing.

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Marks

6. Attempt any TWO of the following:

12

- a) State any two electrical, mechanical and thermal properties of insulating materials.
 - b) Draw neat circuit diagram for below mentioned requirements in electrical circuit.
 - (i) One lamp controlled by one switch.
 - (ii) One lamp, one fan, one two pin socket controlled by separate switches.
 - c) Explain the importance of proper earthing system. Recommend and justify the earthing system used for individual bungalow.
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