22328

23242

3 Hours / 70 Marks Seat No. | | | | | | | | |

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) Write standard specification of MCB used in residential installation.

c) State any two mechanical properties of insulating material.

d) State any two thermal properties of conducting material.

e) Write any two examples of liquid and gaseous insulating materials.

f) State any two main factors considered for selection of cable in residential installation.

g) State the need of earthing.

Marks

2. Attempt any THREE of the following: **12**

a) Explain the function of ELCB and ICDP switch. List two specifications of each.

b) Explain the electrical and mechanical properties of copper conductor.

c) Tell any two applications of following gases :

i) Nitrogen

ii) Hydrogen

iii) Sf6.

iv) Air

d) Compare PVC conduit wiring with casing capping wiring.

3. Attempt any THREE of the following: **12**

a) State the application of iron clad switches, MCBs in installation and write their specifications.

b) Explain following wiring system.

i) Concealed wiring

ii) Metal conduit wiring

c) Explain the effect of temperature rise on the properties of insulating material.

d) Explain the function of :

i) DB

ii) Socket

iii) Cable

iv) Switch

Marks

4. Attempt any THREE of the following: **12**

a) Explain safety precautions while working on overhead lines.

b) Draw magnetization curve of a ferromagnetic material and label its main region with its meaning.

c) Describe the process of cable laying in LT distribution system and also list material used in this process.

d) Explain the suitability of copper as an electrical conductor with reference to its mechanical and electrical properties.

e) Draw a neat connection diagram to measure earth resistance of an earthing pit and write procedure for the same.

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

a) Describe with neat sketch any one type of earthing system.

b) Draw hysterisis for :

i) Hard Steel

ii) Wrought iron

iii) Copper

iv) Wood

c) Explain electrical and chemical properties of insulating oil. State causes to detoriate.

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

a) Write two examples and two application for each of the following insulating material classes.

i) Class Y

ii) Class B

iii) Class H

b) Explain Godown wiring with proper wiring diagram.

c) State the factors on which earth resistance depends and give the values of earth resistance for domestic installation, substation and H.T. Line and L.T. Line.