22328

12223

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 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 different types of switches used in wiring installation.

b) Write standard specification of MCB used in residential installation.

c) State classification of magnetic material.

d) List any two examples of solid and gaseous insulating material.

e) State any two electrical properties of insulating material.

f) List the different types of wiring systems.

g) Define : Earth resistance. State meter used to measure it.

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

a) State any four IE rules to be followed for electrical safety.

b) Explain suitability of tungsten as an electrical conducting material for heating applications with respect to its electrical and mechanical properties.

Marks

c) Give detail classification of insulating material as per thermal strength.

d) Compare PVC conduit wiring with casing capping wiring. (Any four points.)

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

a) Draw and state use of following wiring tools :

i) Combination Plier

ii) Series test lamp

iii) Wire stripper

iv) Crimping tools.

b) State four reasons for failure of gaseous and solid dielectric materials.

c) Draw a neat circuit diagram for the staircase wiring and write truth table for lamp status for different positions of switches.

d) Explain the use of following safety accessories :

i) Rubber Hand Gloves

ii) Rubber Mats

iii) Rubber Foot Wear

iv) Safety boots.

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

a) Explain use of following wiring components :

i) Fuse

ii) MCB

iii) Lamp Holder

iv) Distribution Box.

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

c) Select suitable conducting material for following application with justification :

i) Electric lamp coil

ii) Rheostat

iii) Fuse

iv) Rotor bars of squirrel cage induction motor.

Marks

d) Describe with a neat sketch laying of underground cable by drawing in method.

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) Draw hysterisis loop for :

i) Hard steel

ii) Wrought iron

iii) Copper

iv) Wood.

b) Write two examples and two applications for each of the following insulating material classes :

i) Class Y

ii) Class B

iii) Class H

c) Draw and explain plate earthing. State value of earth resistance for :

i) Power station

ii) Residential installation

iii) H.T. line

iv) Distribution substation.

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

a) Explain the factors on which earth resistance depends.

b) Explain Godown wiring with proper wiring diagram.

c) State any two each of electrical, mechanical and thermal properties of asbestos and porcelain.

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