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HS/XII/A.Sc.Com/EH/25

2 0 2 5

ELECTRONICS AND HARDWARE

(Installation Technician Computing and Peripherals)

Full Marks : 30

Time : 1 hour

The figures in the margin indicate full marks for the questions

1. Choose the correct answer : 1×8=8

(a) Which of the following is the basic classification of a fuse?

- (i) AC
- (ii) DC
- (iii) AC and DC
- (iv) None of the above

(b) DOL is used to safely start the _____ motor.

- (i) electrical
- (ii) induction
- (iii) squirrel cage
- (iv) AC

(2)

- (c) Which of the following units is used for the safety, reliability, flexibility of an electrical system?
- (i) Busway
 - (ii) Transformer
 - (iii) Load centre
 - (iv) Switchgear
- (d) VFD stands for
- (i) Variety Frequency Drive
 - (ii) Variation Fault Detection
 - (iii) Variation Frequency Detection
 - (iv) Variable Frequency Drive
- (e) PLC was invented in the year
- (i) 1977
 - (ii) 1970
 - (iii) 1985
 - (iv) 1980
- (f) The slip ring is used in
- (i) AC machine
 - (ii) DC machine
 - (iii) transformer
 - (iv) starter

(3)

(g) Which of the following is used to connect the wire winding of motor into star and delta form?

- (i) Thread
- (ii) Copper wire
- (iii) Rubber
- (iv) Metal strip

(h) Which of the following principles is used in the operation of a fuse?

- (i) Electromagnetic induction
- (ii) Heating effect of current
- (iii) Faraday's law
- (iv) Magnetic field

2. Answer the following in 1 word or 1 sentence each (any four) : 1×4=4

- (a) What is a generator?
- (b) Write the full form of AFCI.
- (c) What are the types of testing in control panel?
- (d) What is busway?
- (e) What is transformer?
- (f) Write the full form of MCB.

(4)

3. Answer the following in 3 or 4 sentences each (any *three*) :

2×3=6

- (a) What first-aid measures should be taken in case of an electric shock?
- (b) Draw an equivalent structure of SCR.
- (c) State different types of AC fuse.
- (d) Define electrical hazard and chemical hazard.
- (e) What are the uses of an electrical motor?

4. Answer the following essay-type questions (any *three*) :

4×3=12

- (a) Define fuse. Explain its working principle and types.
- (b) What is testing? Explain the construction and working of a potential transformer with necessary diagram.
- (c) What is direct online starter? Explain its working principle with necessary diagram.
- (d) What is rectification? Explain centre-tapped full-wave rectifier with suitable diagrams.
- (e) State the differences between earthing and grounding.

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