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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

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- (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

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(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.

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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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