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HS/XII/A.Sc.Com/EH/24

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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 unit acts as a medium for transmitting electrical signal from one machine to another?

(i) Transformer

(ii) Load centre

(iii) Busway

(iv) Circuit breaker

(b) Which of the following is used to hang the busway?

(i) End closers

(ii) Service heads

(iii) Hanger

(iv) Flanged ends

(2)

- (c) The most commonly used fuse in house-wiring is _____.
- (i) rewirable fuse
 - (ii) d-type cartridge fuse
 - (iii) drop-out fuse
 - (iv) link-type cartridge
- (d) How many metals are used to form a bimetallic strip?
- (i) One metal
 - (ii) Two metals
 - (iii) Three metals
 - (iv) Four metals
- (e) Which of the following is reason for over-current in a system?
- (i) Overload
 - (ii) Short circuit
 - (iii) Ground fault
 - (iv) All of the above
- (f) The role of a capacitor filter in the rectifier is to
- (i) convert AC to DC
 - (ii) remove the noise
 - (iii) remove the DC component in the signal
 - (iv) smoothen the pulsating DC into pure DC

(3)

(g) The rotating part of a motor is the

(i) starter

(ii) carbon brush

(iii) armature

(iv) stator

(h) Which of the following is known as the brain of PLC?

(i) Input

(ii) Output

(iii) Processor

(iv) Memory

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

(a) What is armature?

(b) What is motor?

(c) What is short circuit?

(d) What is energy meter?

(e) What is soft starter?

(f) What is high-voltage HRC fuse?

(4)

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

2×3=6

- (a) What is service entrance?
- (b) What is circuit breaker?
- (c) State Fleming's Right Hand Rule.
- (d) What is 3-phase system? Draw the star and delta configuration.
- (e) What is the role of HMI?

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

4×3=12

- (a) What is a transformer? Explain briefly the various parts of a transformer.
- (b) What is a rectifier? Explain the working of centre tapped full-wave rectifier.
- (c) What are AC drives? Why electrical drive are needed? Draw the block diagram of AC electrical drives.
- (d) What is a fuse? Explain briefly the construction and working of a fuse.
- (e) What is an AC generator? Explain its working principle.

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