No. of Printed Pages—4

HS/XII/A.Sc.Com/EH/23

2023

ELECTRONICS AND HARDWARE

(Vocational Course)

(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 not the symbolic representation of LED light?

(i) Trip

(ii) Power

(iii) Run

(iv) Stop

(b) A full-wave bridge rectifier contains

(i) one diode

(ii) two diodes

(iii) three diodes

(iv) four diodes

(c) Squirrel-cage motor is a type of

(i) synchronous motor

(ii) asynchronous motor

(iii) DC motor

(iv) stepper motor

(d) The rotating part of a motor is

(i) starter

(ii) carbon brush

(iii) armature

(iv) stator

(e) In relay, NO stands for

(i) normally out

(ii) noise out

(iii) neutral open

(iv) normally open

(f) The amount of current flowing in the circuit is measured by

(i) multimeter

(ii) ammeter

(iii) voltmeter

(iv) energy meter

(g) The electrical device that converts electrical energy into mechanical energy is called

(i) generator

(ii) motor

(iii) switch

(iv) transformer

(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) Define switchgear.

(b) What is the role of circuit breaker in electrical system?

(c) What is fuse?

(d) Write the full form of SCR.

(e) What is AC drive?

(f) Define overload.

3. Answer the following in *3* or *4* sentences each (any *three*) : 2×3=6

(a) What is the role of HMI?

(b) State Fleming's right-hand rule.

(c) Draw the structure of SCR.

(d) What is the function of RPM in motor?

(e) What is the role of processor in PLC?

4. Answer any *three* of the following essay-type questions : 4×3=12

(a) What is PLC? Draw a block diagram of PLC and label it.

(b) Write down the steps to test a voltmeter or complete procedure to test the voltmeter.

(c) Explain the construction and working principle of a potential transformer.

(d) What is rectification? Explain the centre-tapped full-wave rectifier.

(e) What do you understand by DOL? Explain the principle of DOL.

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