PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2024
(Fourth Semester)

Branch – **APPLIED ELECTRONICS**

PROGRAMMABLE LOGIC CONTROLLER

Time: Three Hours   Maximum: 50 Marks

SECTION-A (5 Marks)
Answer ALL questions
ALL questions carry EQUAL marks   (5 x 1 = 5)

1   Find the input device from the following ----------------
     (i)   switch   (ii) lamp
     (iii) relay   (iv) motor

2   Choose ---------is a function that allows a specific output to remain in a
     particular state, even after the input condition that caused the output to
     change has been removed.
     (i)   controlling   (ii) latching
     (iii) programming   (iv) counting

3   Identify ---------------- once a timer has received a power on signal, its output
     will change state after a predetermined delay.
     (i)   off delay timer   (ii) pulse timer
     (iii) on delay timer   (iv) retentive timer

4   -------Indicate all the input and output devices are checked to determine if the
     input and output devices are connected to the proper input-output points and
     also giving the correct signal.
     (i)   sequencing   (ii) fault finding
     (iii) processing   (iv) commissioning

5   ------- which includes the communication protocols.
     (i)   DeviceNet   (ii) Interbus
     (iii) Modbus   (iv) all the above

SECTION - B (15 Marks)
Answer ALL Questions
ALL Questions Carry EQUAL Marks   (5 x 3 = 15)

6   a   State the PLC systems.
                    OR
    b   Discuss the output devices.

7   a   Justify the structured text.
                    OR
    b   Analyze the logic functions.

8 a Explain the off delay timers.

OR

b Illustrate the operation of sequencer.

9 a Explain the working of safe systems.

OR

b Evaluate the operation of conveyor belt control.

10 a Analyze the SCADA software.

OR

b Explain about the MTU.

SECTION -C (30 Marks)
Answer ALL questions
ALL questions carry EQUAL Marks (5 x 6 = 30)

11 a Interpret the controllers with its hardware feature.

OR

b Formulate the points in PLC architecture.

12 a Criticize the use of ladder diagrams.

OR

b Explain the battery backed and master control relays.

13 a Appraise the types of timers.

OR

b Assess up and down counting.

14 a Classify the temperature control fault finding programs.

OR

b Elucidate the process involved in program development.

15 a Compare the open systems and communication standards.

OR

b Explain about SCADA protocol HDLC.

Z-Z-Z   END