PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2022
(Sixth Semester)

Branch – ELECTRONICS

PROGRAMMABLE LOGIC CONTROLLER

Time: Three Hours   Maximum: 75 Marks

SECTION-A (10 Marks)
Answer ALL questions
ALL questions carry EQUAL marks   (10 x 1 = 10)

1   PLCs having less than _____ inputs and outputs are called as small PLC.
     (i) 50   (ii) 100   (iii) 200   (iv) 200

2   Which kind of switches examines or detects the presence of an item or object without making
     contact with them?
     (i) Proximity switches   (ii) reed switches
     (iii) photo electric switches   (iv) mechanical switches.

3   Which one of the following is an essential component of electromechanical relays?
     (i) Graphite rod   (ii) LED   (iii) Electromagnet   (iv) MOSFET

4   One of the following is an input device _____
     (i) Motor   (ii) Light   (iii) Valve   (iv) Sensor

5   In PLC programming a retentive function is one that _____
     (i) Default Points to the on State   (ii) Default Points to the Off State
     (iii) Power Cycle   (iv) Cannot Be Edited or Deleted

6   The PLC special functions used to count the number of cans on a conveyer belt is _____
     (i) Timer   (ii) Memory   (iii) Counter   (iv) Register

7   The suspended idle mode _____ the program when activated is placed
     on the right side of the rung.
     (i) halts   (ii) execute   (iii) loop   (iv) go

8   MCR and SCR circuits provide an easy way to remove _____ from I/O system.
     (i) Voltage   (ii) current   (iii) power   (iv) relay

9   In math instructions, the majorities of the instructions take two _____
     values, perform the specified arithmetic functions.
     (i) Voltage   (ii) Output   (iii) data   (iv) program

10   When did the SCADA start?
     (i) 1980s   (ii) 1990s   (iii) 1970s   (iv) 1960s

SECTION - B (25 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** Marks   (5 x 5 = 25)

11   a   Draw and explain the discrete i/o modules.
OR
     b   Write short notes about special i/o modules.

12   a   Elaborate the processor memory organization.
OR
     b   Explain the latching of relays.

13   a   Write a short notes about timer instructions.
OR
     b   Explain the Cascading timer with neat diagram

14   a   Draw and explain the flashing pilot light subroutine.
OR
     b   Elaborate the suspend instructions with examples.

15   a   Analyze the other word level math instructions.
OR
     b   Examine the structure of control systems.

SECTION -C (40 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** Marks   (5 x 8 = 40)

16   a   Discuss the PLC versus computers.
OR
     b   Detail the Boolean instructions and functions.

17   a   Analyze the relay type instructions with examples.
OR
     b   Discuss the output control devices.

18   a   Compare the up counter and down counter.
OR
     b   Detail about the automatic stacking program.

19   a   Compare the MCR instructions and jump instructions.
OR
     b   Discuss briefly about the data compare instructions.

20   a   Draw and justify the temperature control program.
OR
     b   Detail the types of process control in PLC.

Z-Z-Z   END