23ELU520

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2025
(Fifth Semester)

Branch – **ELECTRONICS**

INDUSTRIAL AUTOMATION

Time: Three Hours Maximum: 50 Marks

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

1 The PLC internally operates, stores, and calculates the value in _____
(i) Binary format (ii) Decimal format
(iii)Octal format (iv) None of the above

2 How are PLCs programmed?
(i) Using a specialized software (ii) Using a web interface
(iii) Using a command line interface (iv) Using a mobile app

3 Which of the following is a counter component instruction for a PLC?
(i) RMT (ii) CTR
(iii) MTR (iv) TMR

4 LES and LEQ instructions are examples of which of the following instructions?
(i) Data handling instructions (ii) Composite instructions
(iii) Comparison instructions (iv) Sequencer instructions

5 Which part of the SCADA system initiates almost all communication with remote sites and interface with an operator?
(i) RTU (ii) SCADA software
(iii) MTU (iv) Communication device

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

6 a List different speciality I/O module.
OR
b State the need of Automation.

7 a List different programming languages used with PLC
OR
b Define electromagnetic control relays

8 a Draw a symbol of On delay timer instructions
OR
b Classify counter instructions

9 a Write short note on master control reset instructions
OR
b Differentiate between jump and subroutine instructions

10 a Discuss sequencer instruction
OR
b State the benefits of SCADA.

Cont...

SECTION -C (30 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 x 6 = 30)

11 a State the I/O module selection criteria with respect to PLC.

OR

b Draw a neat block diagram of PLC and explain the function of CPU and memory.

12 a Explain processor memory organization in detail

OR

b Describe the output control devices by PLC

13 a Describe the control of traffic lights in one direction

OR

b Write format of down counter instructions in PLC.

14 a Discuss in detail immediate input and output instructions

OR

b Explain the temporary end instructions

15 a Classify math instruction in detail

OR

b Describe the steps involved in interfacing of PLC based application to a SCADA system.

Z-Z-Z END