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23ELU520N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2025
(Fifth Semester)

Branch - **ELECTRONICS**

INDUSTRIAL AUTOMATION

Time: Three Hours Maximum: 75 Marks

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

Module No.	Question No.	Question	K Level	CO
1	1	A _____ is an example of a real-time system a) PLC b) SCADA c) VLSI d) CAD	K1	CO1
	2	The most common type of I/O interface module is the _____type a) Discrete b) Non- discrete c) Linear d) Non- Linear	K2	CO1
2	3	PLCs have _____ different memory structures identified by the terms systems a) Two b) Three c) One d) Five	K1	CO2
	4	A capacitive sensor contains a high-frequency a) Oscillator b) Amplifier c) Switch d) Filter	K2	CO2
3	5	Mechanical timing _____ are used to delay the opening or closing of contacts for circuit control. a) Relays b) Switch c) Value d) Control	K1	CO1
	6	The programmed _____ instruction is not a substitute for a hardwired Master Control Relay. a) MCR b) MDR c) DVR d)NVR	K2	CO3
4	7	_____output-type instructions, which are often referred to as override instructions, a) Several b) single c) dual d) double	K1	CO3
	8	Each data manipulation instruction requires words of _____ memory for operation. a) bit b) byte c) address d) data	K2	CO3
5	9	The basic _____ mathematical functions performed by PLCs a) 2 b) 4 c) 5 d) 1	K1	CO4
	10	An important part of most SCADA implementations is _____ handling. a) LED b) Display c) Alarm d) wifi	K2	CO4

Cont...

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	List out the parts of PLC and explain it.	K2	CO1
		(OR)		
	11.b.	Write a note on any 3 special i/o modules.		
2	12.a.	What are the programming languages used in PLC? Explain any one.	K2	CO2
		(OR)		
	12.b.	With neat diagram explain inductive proximity sensor.		
3	13.a.	List out the quantities associated with timer instruction? Discuss it.	K4	CO3
		(OR)		
	13.b.	Draw the ladder logic program for retentive on-delay timer alarm program and explain it.		
4	14.a.	Draw and explain the MCR instruction.	K4	CO3
		(OR)		
	14.b.	Explain data compare instruction.		
5	15.a.	With neat diagram discuss Additional instruction in PLC.	K3	CO4
		(OR)		
	15.b.	Explain - sequencer instruction in PLC.		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Compare the single ended, multitask and control management type of PLC application.	K2	CO1
2	17	Explore program scan in PLC.	K2	CO2
3	18	Briefly discuss on delay timer instruction.	K4	CO3
4	19	With neat sketch discuss flashing pilot light subroutine.	K2	CO4
5	20	Describe in detail of multiplication instruction with necessary diagram.	K3	CO4

Z-Z-Z END