



PRESIDENCY UNIVERSITY

BENGALURU

Roll No.														
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End - Term Examinations – May / June 2026

Date: 27-05-2026

Time: 01:00pm – 04:00pm

School: SOE	Program: B. Tech	
Course Code: ECE3027	Course Name: Industrial Automation and Control	
Semester: VI	Max Marks: 100	Weightage: 50%

CO – Levels	CO1	CO2	CO3	CO4	CO5	CO6
Marks	10	10	20	24	14	22

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks.

10Q x 2M=20M

1.	List any two installation issues while deploying PLC controller	2 Marks	L2	CO4
2.	List few specifications for very large PLC controllers	2 Marks	L3	CO4
3.	What is a special function input module, list any two of them and its applications	2 Marks	L3	CO4
4.	Draw chart for PLC product ranges from micro-PLC to very large PLCs	2 Marks	L3	CO4
5.	List any three advantages of PLC controller	2 Marks	L3	CO4
6.	What is branching in sequential function charts, draw and explain with ladder diagram	2 Marks	L2	CO4
7.	Draw the sequential function chart for traffic light signal and mention each states	2 Marks	L2	CO4
8.	What are hydraulic controllers	2 Marks	L2	CO5
9.	List the communication facility requirements in DCS control system	2 Marks	L2	CO5
10.	Construct how cloud computing can be applied to IIoT (Industrial Internet of Things)	2 Marks	L2	CO6

Part B

Answer the Questions.

Total Marks 80M

11.	a.	Develop the client server architecture of SCADA system and identify each component's purpose	10 Marks	L2	CO2
	b.	Explain the various types of Hygrometers to measure the humidity with neat diagram	10 Marks	L2	CO1
Or					
12.	a.	Explain the physical architecture of an automation system	10 Marks	L2	CO2
	b.	Define the flowrate parameter and what are the various measuring devices available for flowrate measurement, illustrate them with neat diagram	10 Marks	L2	CO1
13.	a.	Draw the ladder diagram for the chocolate vending machine and draw the rungs with mentioning each rung activity's	15 Marks	L3	CO3
	b.	List the various installation issues while deploying a PLC controller in an industry	5 Marks	L2	CO3
Or					
14.	a.	Define the ladder diagram, and draw the symbol diagram for each physical elements in the industries and develop the ladder logic for logic gates	15 Marks	L3	CO3
	b.	What is the decision criteria for choosing a PLC controller for a specific industry	5 Marks	L2	CO3
15.	a.	Propose the generalized distributed control system architecture with neat diagram	10 Marks	L2	CO5
	b.	Explain the PLC architecture with neat diagram and outline its operation	10 Marks	L2	CO4
Or					
16.	a.	List and compare the three different architectures of DCS related to scalability, reliability, capability, etc	10 Marks	L2	CO5
	b.	How PLC manages the various input/output modules and especially the smart input/output modules in the PLC, and also mention their funtions	10 Marks	L2	CO4
17.	a.	Develop the Generic block diagram of IoT device and explain the interfaces between them with neat diagram	12 Marks	L2	CO6
	b.	Explain how real time diagnostics is implemented in Industrial IoT	08 Marks	L3	CO6
Or					
18.	a.	Develop the IoT protocol architecture of the IoT devices and explain each layer functions	12 Marks	L2	CO6
	b.	Define Industrial IoT, and identify how the quality is assured in industry 4.0 and develop a predictive maintenance for the same	08 Marks	L3	CO6