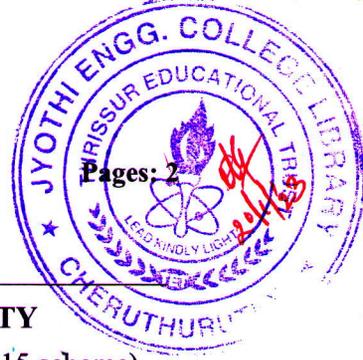C   06000MR305012301

Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
Fifth Semester B.Tech Degree (S,FE) Examination January 2023 (2015 scheme)

Course Code: MR305

Course Name: PLC AND DATA ACQUISITION SYSTEMS

Max. Marks: 100   Duration: 3 Hours

PART A
Answer all questions, each carries 5 marks.

1	Explain briefly block diagram of a computer control system	5
2	Write short note on dual slope ADC	5
3	Explain Sampling and digitising	5
4	Define PLC. State its advantages.	5
5	Explain counters in PLC	5
6	Write short note on data comparison instructions	5
7	What is the need of HMI?	5
8	Explain different types of HMI	5

PART B
Answer any three questions, each carries 10 marks.

9	a)	Explain SCADA system and its working.	10
10	a)	Explain the operation of successive Approximation ADC with example.	10
11	a)	Explain briefly the interfacing between ADC and microprocessor with neat sketch.	10
12	a)	Explicate Sample and hold circuit with waveform.	10
13	a)	What are the types of PLC? Discuss about the I/O modules used in PLC.	10

PART C
Answer any two questions, each carries 15 marks.

14 a) Develop the ladder logic to fill the tank.   15

Fill the tank up to 80%. When the tank is filled, turn ON the heater to raise the temperature up to 70 deg.

When this temperature is reached, turn OFF the heater & open the outlet valve.

When the level in the tank falls below 10%, close the output valve.

15	a)	What do data manipulation instructions allow the PLC to do? Illustrate an example.	15
16	a)	Explain different types of timers with examples.	15
17	a)	Write various steps to connect PLC and computer? Also explain various PLC communication protocols.	15

*****