Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SEVENTH SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019

Course Code: AE401
Course Name: LOGIC & DISTRIBUTED CONTROL SYSTEM

Max. Marks: 100   Duration: 3 Hours

PART A
Answer any two full questions, each carries 15 marks.
Marks

1	a)	With a block diagram explain the different parts of a PLC?	(10)
	b)	Discuss any 5 data types used in PLC.	(5)
2	a)	What is meant by Sequential Function Chart? Illustrate with an example?	(8)
	b)	What is RS-232 Standard? How does it differ from RS-485?	(7)
3	a)	Draw the Functional Block Diagram and Ladder program to implement AND, OR and counter operation.	(9)
	b)	Explain the different types of registers in PLC?	(6)

PART B
Answer any two full questions, each carries 15 marks.

4	a)	List the basic blocks involved in computer controlled system and explain the same with flow chart of a temperature control process.	(10)
	b)	Describe about supervisory control systems with an example.	(5)
5	a)	Explain the block diagram of Distributed Control system.	(10)
	b)	Write notes on Local Control Unit	(5)
6	a)	With block diagram explain the working of Direct Digital Control	(8)
	b)	Explain the functions of local and global highways in DCS	(7)

PART C
Answer any two full questions, each carries 20 marks.

7	a)	Explain the various operator interface requirement in DCS?	(5)
	b)	What are the guidelines for human factor in operator interface design?	(5)
	c)	Explain the various low-level operator interfaces	(10)
8	a)	Explain Hazard and operability study (HaZOp).	(10)
	b)	What is IEC61511 standard for Functional safety?	(5)
	c)	What is Safety Integrity Level?	(5)
9	a)	Which are the various high level interface architectures in DCS?	(10)
	b)	What is Process Hazard Analysis?	(5)
	c)	Define safety life cycle.	(5)

****