

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– VII (New) EXAMINATION – WINTER 2019

Subject Code: 2171709

Date: 28/11/2019

Subject Name: Distributed Control Systems and SCADA

Time: 10:30 AM TO 01:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
Q.1	(a) What is DCS? Explain its concept in brief.	03
	(b) Explain the concept of DDC with suitable diagram	04
	(c) Discuss in detail in which case DCS can be used in plant automation?	07
Q.2	(a) Briefly explain executive program and its task in DCS.	03
	(b) Explain trend display and mimic display in DCS.	04
	(c) With suitable diagram explain hierarchical structure of DCS in detail.	07
	OR	
	(c) What is field station in DCS? Explain it in detail.	07
Q.3	(a) List out any three names of DCS vendors available in the market.	03
	(b) Explain various network topologies in detail.	04
	(c) Explain software configurations in the context of DCS	07
	OR	
Q.3	(a) List out any three names of SCADA vendors available in the market.	03
	(b) What is process control programming? Explain any one algorithm for process control.	04
	(c) What is SCADA? Explain it with suitable diagram in detail.	07
Q.4	(a) What is redundant and fault tolerance system?	03
	(b) Explain any one application of DCS in brief	04
	(c) What is Modbus? Explain its access methods, application services and transmission mode methods.	07
	OR	
Q.4	(a) What is field bus? Explain it in brief.	03
	(b) Explain the difference between PLC and DCS	04
	(c) What is Profibus? Explain its access methods, application services and acceptance.	07
Q.5	(a) What is centralized computer system? Explain briefly.	03
	(b) Explain any one application of SCADA in brief.	04
	(c) What is RTU? Explain various types of RTUs in the context of SCADA	07
	OR	
Q.5	(a) What is the concept of Man Machine Interface	03
	(b) Discuss maintenance considerations for DCS	04
	(c) Explain SMART Transmitter in detail with suitable diagram.	07
