

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code: 2151704

Date: 02/12/2019

Subject Name: Control System Components

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) Draw ISA Symbol for various types of lines used in P&I diagram.	03
	(b) Draw ISA symbol for: Damper, Pressure relief valve, Water cooled condenser, Diaphragm valve.	04
	(c) What is Control Valve? Give the Difference between Single port and double port Globe valve.	07
Q.2	(a) Explain different valve noise problem.	03
	(b) Define the following terms: (1) Valve Capacity (2) Valve Rangeability (3) Trim (4) Corrosion.	04
	(c) Explain the Control room Layout.	07
OR		
Q.3	(c) Give the Comparison between the Control Panels.	07
	(a) Discuss instrument power requirements in brief.	03
	(b) List the classification of compressor used for Instrument air supply and explain any one type in detail with sketch advantages and Disadvantages.	04
	(c) Give classification of dryers and explain desiccant type dryers in detail.	07
OR		
Q.3	(a) Define following terms with reference to control valve: Flashing, Chocking, Galling.	03
	(b) Write a short note on force balance type positioner.	04
	(c) Explain the construction and working of ball valve with its advantages and disadvantages.	07
Q.4	(a) Give the construction and working of a pinch valve in detail.	03
	(b) Write a short note on Diaphragm valve.	04
	(c) Explain the Hazardous area and its classification in brief.	07
OR		
Q.4	(a) Explain the three way valve with neat sketch and list the application.	03
	(b) Explain the Smart Transmitter in brief.	04
	(c) Explain the Relief valve with neat sketch.	07
Q.5	(a) Explain Frequency to Voltage (F-V) Converter in detail.	03
	(b) What is Recorder? Explain any one type of Recorder with neat sketch.	04
	(c) What is the Purpose of Pressure relieving device? Explain Rupture discs in detail.	07
OR		
Q.5	(a) Explain Electric to Pneumatic (I-P) Converter with neat sketch.	03
	(b) Explain the control valve accessories in brief.	04
	(c) What is Actuator? Explain the Pneumatic Type actuator in detail.	07
