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GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2020

Subject Code:2151704

Date:01/02/2021

Subject Name:Control System Components

Time:10:30 AM TO 12:30 PM

Total Marks: 56

Instructions:

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
Q.1	(a) List out any six necessary control valve accessories.	03
	(b) Draw ISA Symbol for four component used into any analog closed loop in industry.	04
	(c) What is control room layout? Explain it with any one suitable example. Give necessary points consider into design and preparation of control room layout.	07
Q.2	(a) Why we need to given tag number to instruments? Given the general consideration we follow to assign the tag no.	03
	(b) Justify statement : Smart transmitter is consider smart into process automation.	04
	(c) List out pneumatic transmitters. Explain any one in detail.	07
Q.3	(a) Justify statement : control valve is act as final control element into process loop.	03
	(b) Define valve capacity and valve rangeability.	04
	(c) Describe Butterfly Valve in detail with net sketch, application, advantages and disadvantages	07
Q.4	(a) Explain control valve flow characteristics.	03
	(b) Given testing processor of control valve.	04
	(c) Explain the criteria for the selection of control valves	07
Q.5	(a) List out various type of communication system used into control room and plant.	03
	(b) Explain any one Electrical power system used for control room	04
	(c) Draw and explain instrumentation air system diagram in detail.	07
Q.6	(a) Differentiate: Instrumentation air and compressed air.	03
	(b) What is purpose of dryer into instrumentation air system. Given reason why we need to replace or regenerate it as define periodic time.	04
	(c) Give the classification of control panels. Explain console Panel with sketch, advantage and disadvantage	07
Q.7	(a) List out various indicators used into industry.	03
	(b) Given the application of recorder into industry. Explain its working principal briefly.	04
	(c) What is the importance of pressure relieving devices? Discuss about types of pressure relieving devices in brief	07
Q.8	(a) Given the function of annunciator used industry alarm system.	03
	(b) Explain intrinsic safe instruments	04
	(c) Write a short note on classification of hazardous area and material according to N.E.C.	07
