

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-V (NEW) EXAMINATION – SUMMER 2019****Subject Code: 2151704****Date: 20/06/2019****Subject Name: Control System Components****Time: 02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

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

		<b>MARKS</b>
<b>Q.1</b>	(a) Draw ISA Symbol for electrical line, actuator , Ball Valve.	<b>03</b>
	(b) Explain following valve terminology 1) Cavitation 2) Rangeability 3) Valve positioned 4) Trim	<b>04</b>
	(c) Explain the layout of a control room with suitable diagram.	<b>07</b>
<b>Q.2</b>	(a) How to describe tag number of instrument installed in a loop.	<b>03</b>
	(b) Describe panel piping and tubing.	<b>04</b>
	(c) Explain the Electrical power system used for control room.	<b>07</b>
	<b>OR</b>	
	(c) Explain the classification of compressors used for instrument air system	<b>07</b>
<b>Q.3</b>	(a) Explain compressor control in detail.	<b>03</b>
	(b) Explain desiccant type dryers in detail.	<b>04</b>
	(c) Explain instrument air supply system for any process industry with suitable diagram.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Explain butterfly valve in detail.	<b>03</b>
	(b) Differentiate between single port & double port design of globe valve.	<b>04</b>
	(c) Explain different Control valve flow characteristics.	<b>07</b>
<b>Q.4</b>	(a) Explain frequency to voltage converter.	<b>03</b>
	(b) Explain pneumatic to electric converters in detail.	<b>04</b>
	(c) Explain the criteria for the selection of control valves.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Explain V/I Converter with suitable Example.	<b>03</b>
	(b) Explain different types of annunciator in detail.	<b>04</b>
	(c) Classify hazardous area and material according to N. E. C.	<b>07</b>
<b>Q.5</b>	(a) Discuss rupture disc in detail.	<b>03</b>
	(b) Explain any one type of recorder with its advantage and disadvantage.	<b>04</b>
	(c) Explain pneumatic transmitters in detail.	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) State different pressure relieving devices and explain any one of them.	<b>03</b>
	(b) Explain different control valve accessories.	<b>04</b>
	(c) Explain electronic transmitters in detail.	<b>07</b>

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