Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – V (NEW) EXAMINATION – WINTER 2015

Subject Code: 2151704 **Date:05/12/ 2015**

Subject Name: Control System Components

Time:10:30am to 1:00pm **Total Marks: 70**

Instructions:

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

Q.1	**(a)**	Draw ISA symbols for following (any seven) (1) Butterfly valve (2) Electric Line (3) Water cooled condenser (4) Damper (5) Pressure relief valve (6) Capillary tube (7) Variable area flow indicator (8) Safety valve	**07**
	(b)	Explain any typical control room layout.	**07**
Q.2	**(a)**	Give the classification of control panels. Also compare them.	**07**
	(b)	Give classification of dryers and explain desiccant type dryers in detail.	**07**
		OR	
	(b)	Explain different type of compressor used in instrument air system	**07**
Q.3	**(a)**	Enumerate various factors to be considered in designing good quality instrument air system. Explain the factors related to distribution of I.A.	**07**
	(b)	What is the significant of control valve flow characteristic? Explain selection of flow characteristics based on application with reason.	**07**
		OR	
Q.3	**(a)**	Classify control valve Types and describe Globe valve in detail with application.	**07**
	(b)	Enumerate various types & Function of Pressure Relieving Devices. Explain Rupture Discs in detail.	**07**
Q.4	**(a)**	Define recorder. Explain Types of recorder with its merit and demerits.	**07**
	(b)	Explain V/I and I/V Converter with suitable Example.	**07**
		OR	
Q.4	**(a)**	Explain I/P and P /I Converter with suitable Example.	**07**
	(b)	Explain Function & its Types of Annunciator.	**07**
Q.5	**(a)**	Difference between 2-wire transmitter and 4-wire transmitter.	**07**
	(b)	Compare electric safety and intrinsic safety with suitable example.	**07**
		OR	
Q.5	**(a)**	Classify hazardous area and material according to N. E. C.	**07**
	(b)	Explain the working of pneumatic and electronic transmitters.	**07**

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