

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2018

Subject Code:2151704

Date:11/12/2018

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 Symbols of shared ON-OFF and shared Continuous devices.	03
	(b) Draw ISA Symbols of (1) Venturi Tube (2) Target Flow Meter (3) Plug Valve (4) Pinch Valve	04
	(c) Discuss in detail check list for control centre inspection.	07
Q.2	(a) Discuss Valve Rangeability, Valve Capacity and Valve Coefficient.	03
	(b) Discuss Panel Piping and Panel Tubing.	04
	(c) List different control panels and discuss breakfront console panel.	07
	OR	
	(c) List Control Valve Accessories. Explain any four in detail.	07
Q.3	(a) Explain Control Valve Flow Characteristics.	03
	(b) Explain Positive Displacement Compressor in Detail	04
	(c) Classify Control Valve Types and describe Butterfly Valve in detail with application, advantages and disadvantages.	07
	OR	
Q.3	(a) Describe Difference between 2 Wire and 4 Wire Transmitter.	03
	(b) Explain Desiccant type Heated Dryer with Neat Sketch.	04
	(c) Explain various types and function of pressure relieving devices. Discuss Safety Valves in detail.	07
Q.4	(a) Draw and explain Low Air Supply Requirement for Instrument Air System.	03
	(b) Discuss about Smart Transmitter, its features, advantages and disadvantages.	04
	(c) List different types of Actuators. Discuss Pneumatic Actuator in detail.	07
	OR	
Q.4	(a) What is cavitation? Explain different Valve Noise Problem.	03
	(b) Discuss Annunciator Sequence in detail.	04
	(c) Classify Hazardous Area and Material according to N.E.C.	07
Q.5	(a) Discuss frequency to voltage converter.	03
	(b) Discuss Pneumatic to Electric Converter in detail.	04
	(c) Explain Force Balance type Pneumatic Transmitter in detail.	07
	OR	
Q.5	(a) Explain Intrinsic Safe Instruments.	03
	(b) List different types of Recorders, their merits and demerits.	04
	(c) List different types of Valve Positioners. Explain Electro Pneumatic Positioner in detail.	07
