

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) - EXAMINATION – SUMMER 2016****Subject Code:2151704****Date:06/05/2016****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.

- Q.1 (a) Draw ISA Symbols for following. 07
I. Ball Valve II. Hydraulic Line III. Capillary Tube IV. Four Way Valve
V. Safety Valve VI. Water cooled condenser VII. Variable area flow indicator
- (b) Define following terms. 07
I. Dew Point II. Valve Positioner III. Rangeability IV. Actuator
V. Console VI. Galling VII. Cavitation
- Q.2 (a) Explain the layout of a control room with suitable diagram. 07
- (b) Explain the classification of compressors used for Instrument Air Supply and explain any one type in detail with advantages and Disadvantages. 07
- OR**
- (b) Compare plant air and instrument air. Explain Instrument air supply system for any process industry with necessary diagram. 07
- Q.3 (a) What is control panel? Explain various types of control panels in brief 07
- (b) Explain Current to Pneumatic converter. 07
- OR**
- Q.3 (a) Explain Electrical Power system used for control room. 07
- (b) Explain the Electrical safety and Intrinsic safety. 07
- Q.4 (a) What is Cv? Explain control valve sizing with necessary equations. 07
- (b) Enlist pressure relieving devices. Explain any one with advantages and disadvantages. 07
- OR**
- Q.4 (a) Explain difference between single port globe and double port globe valve. Explain any one globe valve with advantages and disadvantages. 07
- (b) Explain Control Valve flow characteristics. Explain selection of flow characteristics based on application with reason. 07
- Q.5 (a) Discuss Smart Transmitter and write its advantages and disadvantages. 07
- (b) What is Recorder? Give Name of type of recorder explain any one of them with advantages and disadvantages. 07
- OR**
- Q.5 (a) What is Pneumatic Transmitters? Explain any one. 07
- (b) Explain Electromechanical Annunciator. 07
