

Seat No.: _____

Enrolment No. _____

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 07
Supply and explain any one type in detail with advantages and
Disadvantages.
- OR**
- (b) Compare plant air and instrument air. Explain Instrument air supply 07
system for any process industry with necessary diagram.
- 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 07
disadvantages.
- OR**
- Q.4 (a) Explain difference between single port globe and double port globe valve. 07
Explain any one globe valve with advantages and disadvantages.
- (b) Explain Control Valve flow characteristics. Explain selection of flow 07
characteristics based on application with reason.
- 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 07
advantages and disadvantages.
- OR**
- Q.5 (a) What is Pneumatic Transmitters? Explain any one. 07
(b) Explain Electromechanical Annunciator. 07
