

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE –SEM-VI EXAMINATION – SUMMER 2015**

**Subject Code: 161701****Date: 01/05/2015****Subject Name: Instrumentation System****Time: 10.30AM-01.00PM****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) Justify the importance of P & I diagram and Instrument specification sheet. **07**  
 (b) Give classification of dryers and explain desiccant type dryers in detail. **07**
- Q.2** (a) Explain typical installation procedure of control valve. **07**  
 (b) What are the working principles of positive displacement and dynamic compressors? Explain centrifugal compressor. **07**
- OR**
- (b) Enumerate various factors to be considered in designing good quality instrument air system. Explain the factors related to distribution of I.A. **07**
- Q.3** (a) Explain any typical control room layout. **07**  
 (b) Give various methods for selecting flow measurement. **07**
- OR**
- Q.3** (a) Explain instrument index sheet and loop wiring diagram with neat sketch. **07**  
 (b) Give the checklist for good installation of temperature transmitter. **07**
- Q.4** (a) Explain different measuring instruments for level measurement with advantages/disadvantages of each. **07**  
 (b) Give details about duties of Project manager, Process engineer and equipment engineer. **07**
- OR**
- Q.4** (a) Compare electric safety and intrinsic safety with suitable example. **07**  
 (b) Explain desk type and custom type consoles. **07**
- Q.5** (a) Describe turn back and open angle frame design type control panel. **07**  
 (b) Draw I. S. A. symbols for following: **07**  
 (I) Water Cooled Exchanger      (II) Turbine      (III) Angle Valve  
 (IV) Plug Valve      (V) Rotary Valve  
 (VI) Check Valve      (VII) Hydraulic Signal
- OR**
- Q.5** (a) Describe electrical power system for control room. **07**  
 (b) Classify hazardous area and material according to N. E. C. **07**

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