

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (OLD) EXAMINATION – WINTER 2018****Subject Code:161701****Date: 30/11/2018****Subject Name: Instrumentation System****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 the following graphical symbols as per ISA standard: **07**
1) Angle valve, 2) Venturi Tube, 3) Capillary Tube,
4) Two-way valve (Fail Opened), 5) Hydraulic Signal,
6) Pneumatic Signal, 7) Temperature element with well.
- (b) Compare Pneumatic versus Electronic instrumentation and control systems. **07**
- Q.2** (a) Explain importance of P&I diagram and loop wiring diagram. **07**
(b) What is electric Safety? Classify hazardous area according to NEC. **07**
- OR**
- (b) Give the general consideration for specification of Flow measurement under engineering design criteria. **07**
- Q.3** (a) Explain the selection criteria for various temperature measurement methods. **07**
(b) Write a short note on duties and responsibilities of project manager. **07**
- OR**
- Q.3** (a) Describe various methods used for level measurement. **07**
(b) Prepare the instrumentation specification sheet for pressure transmitter. **07**
- Q.4** (a) Explain the control room layout with suitable diagram. **07**
(b) Give classification of dryers and explain desiccant type dryers. **07**
- OR**
- Q.4** (a) Classify the basic types of control panels. Discuss any one category in detail. **07**
(b) Draw and explain typical instrument air supply system for large requirements. **07**
- Q.5** (a) Define start up. Discuss the problems faced during this period. **07**
(b) Explain typical installation details for flow measurement using orifice. **07**
- OR**
- Q.5** (a) Explain typical control valve check out procedure. **07**
(b) Explain the role of an Instrumentation Engineer in Instrument Project Control. **07**
