

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI EXAMINATION – SUMMER 2025

Subject Code: 3161713

Date: 20-05-2025

Subject Name: Instrumentation Project Management

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.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) What is the need of instrument index sheet in instrument project control? **03**
- (b) Write in brief about Mechanical flow sheet. How it is different than Process flow sheet? **04**
- (c) What is loop wiring diagram? Draw and explain electronic loop wiring diagram of drum water level control. (Consider: Final control element is pneumatic). **07**

- Q.2** (a) What are the various factors that favor the continued use of electronic instruments over pneumatic instruments? **03**
- (b) Which precautions should be taken to prevent spurious noise in electronic transmission lines? **04**
- (c) List all people or groups that must be coordinated by the project instrument engineer for an efficient job execution. Explain any three of them in detail. **07**

**OR**

- (c) What is NEC? Classify hazardous locations as per NEC code. **07**
- Q.3** (a) Which are the Microsoft office tools can be used in project management? Explain with one example. **03**
- (b) List various materials used for pneumatic transmission lines. Discuss their advantages and limitations. **04**
- (c) State the various steps of CPM network technique for project planning. Differentiate PERT and CPM techniques. **07**

**OR**

- Q.3** (a) Give your suggestions about future and spare capacity needed in control centers for following situations: **03**  
a. If process is new      b. If process is proven
- (b) Write about the need, source and classification of purging used for electrical devices. **04**
- (c) List the various types of contracts used in Engineering and construction industries. Explain them in detail. **07**
- Q.4** (a) Explain the importance of tagging in instruments. **03**
- (b) Why seal between instrument device and process is required? Discuss various sealing methods. **04**
- (c) What is loop checking? Explain typical check-out procedure for a pneumatic d/p cell. **07**

**OR**

- Q.4** (a) Write in brief about important consideration for the location of taps for instruments. **03**
- (b) Define the terms (i) Flash point (ii) Autoignition temperature. **04**

- (c) Write in detail the typical design guideline on flow measurement. **07**
- Q.5** (a) Write full form of ISO. Discuss ISO 9000 certification process. **03**
- (b) What do you mean by SOW? Discuss it in brief. **04**
- (c) Why testing of piping, tubing and wiring associated with instruments and instrument systems is performed before startup? Which groups perform the testing? Explain various testings in detail. **07**
- OR**
- Q.5** (a) Write on Work Breakdown Structure (WBS) in brief. **03**
- (b) Write in brief about ISO 9000 management overview. **04**
- (c) Define startup time. List the various categories of problems faced during the startup time. Discuss any two of them in detail. **07**

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