Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (NEW) EXAMINATION – SUMMER 2022

Subject Code:3161713 Date:01/06/2022

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.**

			MARKS
Q.1	**(a)**	Abbreviate ANSI, ISA and IEC. State their importance.	**03**
	(b)	What is EPC? List out the various sectors and some EPC companies in India.	**04**
	(c)	Brief about instrument index sheet.	**07**
Q.2	**(a)**	Draw installation diagram for Rotameter used to measure liquid flow.	**03**
	(b)	Draw a single loop wiring diagram consisting of orifice, DP Transmitter (2-wire), Controller, I/P converter and Control valve.	**04**
	(c)	Give comparison between Pneumatic and electronic Instrumentation system in terms of cost, dependability, maintenance safety and process requirement.	**07**
		OR	
	(c)	Discuss about key role and responsibility of Instrumentation and Control Design Engineer in typical EPC companies.	**07**
Q.3	**(a)**	State the importance of instrument specification sheets.	**03**
	(b)	Brief about some important layout aspects and factors need to consider for control centers.	**04**
	(c)	Brief about typical suggested guideline for temperature measurement.	**07**
		OR	
Q.3	**(a)**	In which applications valve positioner should be used with control valve.	**03**
	(b)	Brief about important consideration for following: Location of Taps, Sealing instruments from process	**04**
	(c)	Brief about typical suggested guideline for flow measurement system.	**07**
Q.4	**(a)**	List out the other personal with whom instrument engineer should coordinate during project face.	**03**
	(b)	Brief about instrument protection methods typically used in plants.	**04**
	(c)	Discuss the responsibilities of Project Manager.	**07**
		OR	
Q.4	**(a)**	The 40 feet vertical cylindrical tank has upper connection in in top roof and lower level connection 1.6 feet above the bottom of the tank. The specific gravity of fluid contained by tank is 0.87.	**03**

Nitrogen is feed in triangular area (Pr=1 feet of H_2O) of tank (i.e. above liquid surface). DP transmitter diaphragm type with no equalizer leg is used to measure the level. Calculate level transmitter range.

(b) What type of information related with process, electrical, piping & equipment is required to ensure efficient job execution by project instrument engineer? **04**

(c) Brief about project procedure. **07**

Q.5 **(a)** State various steps of CPM network technique for project planning. **03**

(b) What is calibration? How traceability to international standard is achieved for any measuring instrument ? **04**

(c) Why loop checking is carried out ? Explain typical check out procedure for a temperature transmitter. **07**

OR

Q.5 **(a)** Briefly explain Work Breakdown Structure(WBS). **03**

(b) Brief about ISO 9000. **04**

(c) State the problems faced during the 'start up' of plant . **07**

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