

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – WINTER 2018****Subject Code:2141705****Date:05/12/2018****Subject Name:Industrial Measurement I****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.

		MARKS
Q.1	(a) Define accuracy, hysteresis and dead zone.	03
	(b) A meter reads 127.50V and the true value of the voltage is 127.43V. Determine the static error and static correction for this instrument.	04
	(c) Define transducer and classify them in detail	07
Q.2	(a) Define sensor, temperature and precision	03
	(b) Define error and explain types of errors.	04
	(c) Explain with a neat figure, principle, construction, working, advantages and disadvantages of RTD	07
	OR	
	(c) Explain with a neat figure, principle, construction, working, advantages and disadvantages of Thermocouple	07
Q.3	(a) Define pressure, absolute pressure and vacuum pressure	03
	(b) Explain with a neat figure, principle, construction and working of Bimetallic thermometer	04
	(c) Explain with a neat figure, principle, construction, working, advantages and disadvantages of Bourdon tube	07
	OR	
Q.3	(a) Identify the pressure measurement device used for absolute as well as differential pressure measurement and state its principle.	03
	(b) Explain with a neat figure, principle, construction and working of Optical pyrometer	04
	(c) Explain with a neat figure, principle, construction, working, advantages and disadvantages of Mcleod gauge	07
Q.4	(a) Explain with a neat figure, construction and working of resistive type level measurement	03
	(b) Explain in detail temperature compensation techniques applied for temperature measurement using RTD.	04
	(c) Identify the level measurement technique using hydrostatic principle for measurement. Explain with a neat figure, construction, working, advantages and disadvantages of the same.	07
	OR	
Q.4	(a) Explain with a neat figure, construction and working of inductive type level measurement	03
	(b) Explain flapper nozzle assembly for pressure measurement	04
	(c) Explain with a neat figure, principle, construction, working, advantages and disadvantages of radiation level measurement technique.	07

- Q.5 (a) State 3 methods of flow measurement using the principle of variable head. **03**
- (b) Identify any 2 flow measurement technique using time as its measurement principle. With a neat figure, state principle of any one technique. **04**
- (c) Explain with a neat figure, principle, construction, working, advantages and disadvantages of Rotameter. **07**

OR

- Q.5 (a) With a neat figure, state the principle and working of radar type flow measurement technique **03**
- (b) With a neat figure, explain construction and working of turbine flowmeter. **04**
- (c) Explain with a neat figure, principle, construction, working, advantages and disadvantages of Electromagnetic flow meter. **07**

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