GUJARAT TECHNOLOGICAL UNIVERSITY BE-SEMESTER-VI EXAMINATION-WINTER 2015

Subject Code:161705	Date:10/12/ 201

Subject Name: Instrumentation Measurement - II

Time:2:30pm to 5:00pm	Total Marks: 70
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Instructions:

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

Q.1	(a)	Define Viscosity with necessary equation and discuss Newtonian and non-Newtonian behaviour of various fluids in detail.	07
	(b)	Discuss Force measurement using different types of elastic element.	07
Q.2	(a) (b)	What is paramagnetism? Explain paramagnetic oxygen analyser in detail. What is strain? Enlist various types of strain gauges. Explain any one of them. OR	07 07
	(b)	Describe the practical problems in vibration sensor installation. Also discuss accelerometer calibration.	07
Q.3	(a)	Define Vibration and Explain mass spring seismic sensor for measurement of vibration.	07
	(b)	Explain various factors to be considered for successful application of analytical system.	07
		OR	
Q.3	(a) (b)	Define Density: Discuss the hydrostatic head method for density measurement. Discuss the different types of rotational viscometer in detail.	
Q.4	(a)	Explain Mass spectroscopy in detail.	07
V	(b)	Draw and explain functional diagram of process gas chromatograph. OR	07
Q.4	(a)	What is Chromatography? Explain HPLC system with block-diagram.	07
V	(b)	Define pH. Discuss different types of pH electrodes in detail.	07
Q.5	(a)	What is spectroscopy? Explain atomic absorption spectroscopy.	07
	(b)	Explain gas chromatography detectors in detail (any two).	07
	(-)	OR	
Q.5	(a)	Discuss the principle of polarography. Explain sampled DC and pulsed polarography techniques.	07

(b) Describe different types of moisture measurement methods for gases.

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