GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–IV(NEW) – EXAMINATION – SUMMER 2019

Subject Code:2142503   **Date:09/05/2019**
Subject Name: Metrology and Measurement
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)**	Draw and explain generalized measurement system.	**03**
	(b)	Compare the terms: Accuracy and Precision.	**04**
	(c)	Define Metrology. Explain mechanical strain gauges.	**07**
Q.2	**(a)**	Explain the calibration process of temperature measuring devices.	**03**
	(b)	Describe the working principle of Photoelectric tachometer.	**04**
	(c)	Explain the working principle of LVDT with merits and demerits.	**07**
		OR	
	(c)	List out various temperature measuring devices. Explain working of thermo couples briefly.	**07**
Q.3	**(a)**	Classify various linear measuring instruments.	**03**
	(b)	Draw a neat sketch of Vernier Height Gauge.	**04**
	(c)	Write a short note on Vernier Micrometer.	**07**
		OR	
Q.3	**(a)**	Enlist various errors arise during the manufacturing of screw threads.	**03**
	(b)	Write a short note on light interference microscope.	**04**
	(c)	Explain the working principle of sine bar with example.	**07**
Q.4	**(a)**	Classify various angular measuring instruments.	**03**
	(b)	Write a short note on tool maker's microscope.	**04**
	(c)	Explain gear tooth terminology with neat sketch.	**07**
		OR	
Q.4	**(a)**	Enlist various surface measuring instruments.	**03**
	(b)	What is the application of angle dekkor?	**04**
	(c)	Explain the working of Taylor Hobson Talysurf with neat sketch.	**07**
Q.5	**(a)**	What do you mean by pyrometry? Enlist various types of pyrometers.	**03**
	(b)	What are the merits and demerits of mechanical comparator?	**04**
	(c)	Explain the measurement of effective diameter by Two wire method.	**07**
		OR	
Q.5	**(a)**	Explain the function of Slip Gauges. Explain Wringing method in detail.	**03**
	(b)	What are the merits and demerits of pneumatic comparator?	**04**
	(c)	Draw and explain working of Co-ordinate Measuring Machine.	**07**

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