

**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
<b>Q.1</b>	(a) Draw and explain generalized measurement system.	<b>03</b>
	(b) Compare the terms: Accuracy and Precision.	<b>04</b>
	(c) Define Metrology. Explain mechanical strain gauges.	<b>07</b>
<b>Q.2</b>	(a) Explain the calibration process of temperature measuring devices.	<b>03</b>
	(b) Describe the working principle of Photoelectric tachometer.	<b>04</b>
	(c) Explain the working principle of LVDT with merits and demerits.	<b>07</b>
	<b>OR</b>	
	(c) List out various temperature measuring devices. Explain working of thermo couples briefly.	<b>07</b>
<b>Q.3</b>	(a) Classify various linear measuring instruments.	<b>03</b>
	(b) Draw a neat sketch of Vernier Height Gauge.	<b>04</b>
	(c) Write a short note on Vernier Micrometer.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Enlist various errors arise during the manufacturing of screw threads.	<b>03</b>
	(b) Write a short note on light interference microscope.	<b>04</b>
	(c) Explain the working principle of sine bar with example.	<b>07</b>
<b>Q.4</b>	(a) Classify various angular measuring instruments.	<b>03</b>
	(b) Write a short note on tool maker's microscope.	<b>04</b>
	(c) Explain gear tooth terminology with neat sketch.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Enlist various surface measuring instruments.	<b>03</b>
	(b) What is the application of angle dekkor?	<b>04</b>
	(c) Explain the working of Taylor Hobson Talysurf with neat sketch.	<b>07</b>
<b>Q.5</b>	(a) What do you mean by pyrometry? Enlist various types of pyrometers.	<b>03</b>
	(b) What are the merits and demerits of mechanical comparator?	<b>04</b>
	(c) Explain the measurement of effective diameter by Two wire method.	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) Explain the function of Slip Gauges. Explain Wringing method in detail.	<b>03</b>
	(b) What are the merits and demerits of pneumatic comparator?	<b>04</b>
	(c) Draw and explain working of Co-ordinate Measuring Machine.	<b>07</b>

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