Seat No.:	Enrolment No
-----------	--------------

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

BE - SEMESTER-IV (NEW) - EXAMINATION - SUMMER 2017

Subject Code: 2142503 Date: 30/05/2017

**Subject Name: Metrology and Measurement** 

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.

			MARKS
Q.1		Give answer of following Questions in brief.	14
<b>~</b> ·-	1	Give the examples of: (1) Null output device & (2) Deflection output	
		device.	
	2	Define Fidelity.	
	3	Distinguish between range and span.	
	4	Give application of slip gauges.	
	5	State importance of angle measurements.	
	6	Give main limitations of angle gauge.	
	7	What is the rosette? Why it is used?	
	8	How tachometer classified?	
	9	Give principle of thermocouple.	
	10	Give characteristics of line standards.	
	11	Define pressure angle of gear.	
	12	What is an effective diameter of screw thread?	
	13	Explain surface texture.	
	14	Define comparator.	
<b>Q.2</b>	(a)	Give difference between systematic error and random error.	03
•	<b>(b)</b>	Write a note on LVDT.	04
	(c)	Explain the generalized measurement system.	07
		OR	
	<b>(c)</b>	Write a note on vernier caliper with neat sketch and principle.	07
<b>Q.3</b>	(a)	Explain telescopic gauge.	03
	<b>(b)</b>	Write a note on depth micrometer.	04
	<b>(c)</b>	Explain vernier height gauge with neat sketch and its application.	07
		OR	
<b>Q.3</b>	(a)	Explain snap gauge.	03
	<b>(b)</b>	1	04
	<b>(c)</b>	Explain pneumatic comparator with neat sketch and applications.	07
<b>Q.4</b>	(a)		03
	<b>(b)</b>	1 6 11	04
	<b>(c)</b>	Explain Tomlinson surface tester with neat sketch.	07
		OR	
0.4	(a)	Discuss temperature scale.	03

	<b>(b)</b>	Explain centrifugal tachometer with sketch briefly.	04
	(c)	Discuss resistance temperature detector (RTD) with neat sketch.	07
Q.5	(a)	Write application of radiation pyrometer.	03
	<b>(b)</b>	Discuss objective of metrology.	04
	(c)	Explain thermistor with advantages and disadvantages.	07
	` ′	OR	
Q.5	(a)	Give advantages of mechanical comparator.	03
_	<b>(b)</b>	Explain gear tooth vernier caliper brief with sketch.	04
	(c)	Write a note on tool maker's microscope.	07

\*\*\*\*\*\*