

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– IV (New) EXAMINATION – WINTER 2019****Subject Code: 2142503****Date: 07/12/2019****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	(a) Explain with neat sketch Accuracy and Precision.	03
	(b) Explain the need of measurement and metrology with suitable example. Also enlist types of measurement.	04
	(c) Explain generalized measurement system with neat sketch.	07
Q.2	(a) Enlist types of Vernier calipers.	03
	(b) Explain the various types of errors during measurement.	04
	(c) Draw the neat sketch of Vernier Caliper. Explain its parts with individual function.	07
OR		
	(c) Draw the neat sketch of micrometer. Explain its parts with individual function.	07
Q.3	(a) Enlist types of Gears.	03
	(b) Write down the list of gear measuring instrument.	04
	(c) Write a short note on Bewel Protector, with neat sketch.	07
OR		
Q.3	(a) Enlist the type of Screw threads.	03
	(b) Write down the list of Screw thread measuring instruments.	04
	(c) Write a short note on Sine bar, with neat sketch.	07
Q.4	(a) Enlist types of comparators.	03
	(b) Enlist the different factors which are affecting for the rough surface	04
	(c) Explain Taylor Hobson Tail surf with neat sketch.	07
OR		
Q.4	(a) Enlist the speed measurement tools.	03
	(b) Define the word 'Stylus'. Enlist the surface measuring instruments.	04
	(c) Explain Profilometer with neat sketch.	07
Q.5	(a) Enlist the force measurement instruments.	03
	(b) Explain any one of the Torque measurement tools.	04
	(c) Enlist temperature measuring instruments. Explain any one of them with neat sketch.	07
OR		
Q.5	(a) Write the function of Optical Pyrometer.	03
	(b) Write short note on Load Cell	04
	(c) Write short note on Tool Maker's Microscope	07
