

GUJARAT TECHNOLOGICAL UNIVERSITY**B.VOC - SEMESTER- I EXAMINATION – WINTER 2019****Subject Code: 1110304****Date: 08/01/2020****Subject Name: Metrology and Measuring Instruments****Time: 10:30 AM TO 12:30 PM****Total Marks: 50****Instructions:**

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

		Marks
Q.1	(a) Distinguish between Primary, Secondary, Tertiary and working standards of length.	05
	(b) Describe errors and sources of errors.	05
Q.2	(a) Give classification of comparators and explain dial indicator with neat sketch.	05
	(b) Compare comparator and measuring instrument.	05
OR		
Q.3	(a) Explain adverse effect of poor surface finish.	05
	(b) Define : (1) primary texture and (2) secondary texture	05
OR		
Q.3	(a) Explain following methods of specifying roughness value: Peak-to-valley height method; Centre-line-average method; Root mean square method.	05
	(b) Sketch and describe the construction and working of Tomlinson surface roughness tester.	05
Q.4	(a) Explain construction , working and principle of vernier height gauge.	05
	(b) Enlist various instruments used for thread and gear measurement and explain any one in detail.	05
OR		
Q.4	(a) Explain bourdon tube type pressure gauge.	05
	(b) Explain construction and use of vernier bevel protractor.	05
Q.5	(a) Describe defects likely to occur in measuring instruments and their remedies.	05
	(b) Explain thermocouple in detail.	05
OR		
Q.5	(a) Explain construction , working and principle slip gauge.	05
	(b) Construction and working of auto collimator.	05
