

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.VOC. –SEMESTER 1(NEW SYLLABUS) EXAMINATION- WINTER 2018

Subject Code: 1110304

Date: 19-01-2019

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) Define following: (1) Least count (2) Repeatability (3) Measurement (4) Standard (5) Error	05
(b) Differentiate between precision and accuracy with suitable example.	05
Q.2 (a) Give classification of comparators and explain Dial indicator with sketch.	05
(b) With neat sketch explain working of Johansson Mikrocator.	05
OR	
(b) Explain construction and working of Reed type mechanical comparator.	05
Q.3 (a) Explain the methods of measuring surface finish.	05
(b) Explain the following terms used in surface finish with sketch: Roughness, Waviness, Effective profile, Centerline of profile, surface texture, lay.	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) Describe with neat sketch the construction and working of Vernier calliper.	05
(b) Explain construction and use of vernier bevel protractor.	05
OR	
Q.4 (a) Explain thermocouple in detail.	05
(b) Enlist various instruments used for thread and gear measurement and explain any one in detail.	05
Q.5 (a) Explain construction and working of sine bar with neat sketch.	05
(b) Describe defects likely to occur in measuring instruments and their remedies.	05
OR	
Q.5 (a) Explain bourdon tube type pressure gauge.	05
(b) Define : (1) Straightness (2) Flatness (3) Circularity(4) Parallelism (5) Squareness	05
