

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE- SEMESTER-IV (NEW) EXAMINATION – WINTER 2020****Subject Code: 3141901****Date:09/02/2021****Subject Name: Mechanical Measurement and Metrology****Time:02:30 PM TO 04:30 PM****Total Marks:56****Instructions:**

1. Attempt any **FOUR** questions out of **EIGHT** questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What do you understand by measurement? **03**  
(b) What is the difference between Line standard and End standard? **04**  
(c) State various sources of errors. What are the difference between systematic error and random error? **07**
- Q.2** (a) Explain the term range and sensitivity. **03**  
(b) What is tolerance? Why tolerance are specified? **04**  
(c) Define fit. Describe various types of fits. **07**
- Q.3** (a) Give the classification of comparators. **03**  
(b) Explain Dial indicator. **04**  
(c) Explain with neat diagram, working principle and application of Sigma comparator. **07**
- Q.4** (a) Give the classification of threads. **03**  
(b) Explain various forms of gear teeth. **04**  
(c) Describe the construction and working of Tool maker's microscope. **07**
- Q.5** (a) Differentiate: Precision and accuracy. **03**  
(b) Explain the term hysteresis and repeatability. **04**  
(c) Explain the two-wire method of measuring the effective diameter of a screw thread. **07**
- Q.6** (a) Write the advantages of lasers. **03**  
(b) Describe LVDT giving its advantages, limitations & field of applications. **04**  
(c) Write a short note on Cathode ray Oscillographs. **07**
- Q.7** (a) Explain slip gauges. **03**  
(b) Explain rope brake dynamometer. **04**  
(c) Explain McLeod gauge with a diagram. **07**
- Q.8** (a) Give the classification of instruments for pressure measurement. **03**  
(b) Explain the principle of electrical Strain gauges **04**  
(c) Explain the principles of thermocouples stating an illustrations. **07**

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