

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

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

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-VII • EXAMINATION – WINTER • 2014**

**Subject Code: 170204**

**Date: 27-11-2014**

**Subject Name: Automobile Mechanical Measurements**

**Time: 10:30 am - 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.

- Q.1** (a) State necessity and objectives of metrology. Also explain in brief precision and accuracy. **07**  
(b) State the various sources of errors. What are the difference between systematic errors and random errors? **07**
- Q.2** (a) What is least count? How is it can determined in vernier caliper? **07**  
(b) What is tolerance? Explain unilateral and bilateral tolerances with Examples? **07**
- OR**
- (b) Explain with neat diagram, working principle of micrometer. **07**
- Q.3** (a) Enlist methods of measurements. Explain Slip gauges with wringing process. **07**  
(b) Describe with sketch the construction and working of an Optical bevel protractor. **07**
- OR**
- Q.3** (a) Explain Screw Thread measurement using two wire method. **07**  
(b) Explain Gear Tooth Thickness measurement using vernier gear tooth caliper with a neat sketch. **07**
- Q.4** (a) Describe with sketch the construction and working of a RTD. Give advantage And disadvantage of RTD. **07**  
(b) Explain with neat sketch, applications and working principle of LVDT **07**
- OR**
- Q.4** (a) Explain McLeod gauge with a diagram. **07**  
(b) Explain in brief, Bourdon tube pressure gauge. **07**
- Q.5** (a) List the different types of Mechanical tachometer and explain any one of them. **07**  
(b) Sketch and describe the construction and working of Rotameter. **07**
- OR**
- Q.5** (a) Write notes on angle dekkor. **07**  
(b) What is a thermistor? Explain with neat sketch the construction and working of a thermistor. **07**

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