

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**
