

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII • EXAMINATION – SUMMER • 2014

Subject Code: 170204**Date: 29-05-2014****Subject Name: Automobile Mechanical Measurements****Time: 02:30 pm - 05:00 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)** Name the various methods of measurements and explain any three of them with suitable examples. **07**
- (b)** Differentiate between unilateral and bilateral tolerances. Explain the following fits with neat sketch: 1) Clearance Fit **07**
2) Interference Fit
3) Transition Fit.

- Q.2 (a)** Describe with sketch the construction and working of a Vernier Height Gauge. **07**
- (b)** Name the different types of the Comparators and explain Sigma Comparators with neat sketch. **07**

OR

- (b)** Explain briefly: **07**
1) Telescopic Gauge
2) Dial indicators
- Q.3 (a)** Describe the Parkinson's gear tester and state its limitations. **07**
- (b)** Explain with the help of neat sketches the principle and construction of an auto-Collimator. **07**

OR

- Q.3 (a)** Explain Screw Thread measurement using two wire and three wire Method. **07**
- (b)** Explain with neat diagram working principle and applications of Tomlinson surface tester. **07**

- Q.4 (a)** Describe with sketch bimetal strip thermometer stating salient features. **07**
- (b)** What is a thermistor? Explain with neat sketch the construction and working of a thermistor. **07**

OR

- Q.4 (a)** Sketch and explain diaphragm gauges stating advantages and limitations. **07**
- (b)** Explain the constructional features and basic principles of McLeod gauge used for low pressure measurements. **07**

- Q.5 (a)** Compare and differentiate following terms: **07**
i) Threshold and Resolution
ii) Systematic error and Random error
- (b)** List the different types of Mechanical and Electrical tachometer and explain Eddy current tachometer. **07**

OR

- Q.5 (a)** Explain Piezo-electric and Seismic accelerometer. **07**
- (b)** Explain the working principle of Ionization gauge with advantages and disadvantages **07**
