

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: **07**
- 1) Clearance Fit
 - 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 McLead 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 Peizo-electric and Seismic accelerometer. **07**
- (b) Explain the working principle of Ionization gauge with advantages and disadvantages **07**
