



**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE SEMESTER VII EXAMINATION – WINTER 2017**

**Subject Code: 170204****Date: 15-11-2017****Subject Name: Automobile Mechanical Measurements****Time: 10:30 am to 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) What do you understand by measurement? Explain different methods of measurement. **07**
- (b) Explain the terms Limits, fits and tolerances with examples in brief. **07**
- Q.2** (a) Explain slip gauges with ringing process. **07**
- (b) Which are the different sources of errors in measurement? Explain the terms precision and accuracy related to measurement. **07**
- OR**
- (b) Describe with neat sketch construction and working principle of Vernier height gauge. **07**
- Q.3** (a) List different types of comparators and explain the working of Sigma comparator. **07**
- (b) Explain the following methods for surface finish: **07**
- i) Ten point height method
- ii) Peak to valley height method
- iii) Average roughness method
- OR**
- Q.3** (a) Describe with neat sketch construction and working of micrometer. Explain the method to take the readings. **07**
- (b) Explain the construction and working of LVDT with its advantages and disadvantages. **07**
- Q.4** (a) Give the classification of clinometers. Explain any one of them with a neat sketch. **07**
- (b) Explain the following terminology for gears: **07**
- i) Profile checking
- ii) Backlash checking
- iii) Checking of composite errors
- OR**
- Q.4** (a) Explain the working principle of thermocouple with its advantages and disadvantages. **07**
- (b) Write a short note on diaphragm pressure gauge. **07**
- Q.5** (a) Write a short note on hot wire anemometer. **07**
- (b) Explain in brief Pitot gauge and Ionization gauge. **07**
- OR**
- Q.5** (a) Explain the principle and types of electrical strain gauges. **07**
- (b) Discuss in brief piezo electric and seismic accelerometer. **07**

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