

GUJARAT TECHNOLOGICAL UNIVERSITY**B. E. - SEMESTER – VII • EXAMINATION – WINTER 2012****Subject code: 170204****Date: 27/12/2012****Subject Name: Automobile Mechanical Measurements****Time: 10.30 am - 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** State various sources of errors. What are the difference between systematic error and random error ? **07**
- (b)** Explain various factors to be considered for selection of measuring instruments ? Differentiate: precision and Accuracy. **07**
- Q.2 (a)** What is least count ? How is it can determined in vernier caliper ? **07**
- (b)** Explain with neat diagram, working principle of vernier depth gauge. **07**
- OR**
- (b)** Explain with neat diagram, working principle of micrometer. **07**
- Q.3 (a)** Write notes on Dial indicators and Telescopic gauge. **07**
- (b)** Explain with neat diagram, working principle of optical comparator. **07**
- OR**
- Q.3 (a)** Explain with neat diagram, working principle and applications of Sigma comparator. **07**
- (b)** Write notes on clinometers and angle dekkor. **07**
- Q.4 (a)** Explain with neat sketch, measurement of effective diameter by two wire method for screw measurement. **07**
- (b)** Write notes on parkinson gear tester. **07**
- OR**
- Q.4 (a)** Explain with neat diagram, working principle and applications of Tomlinson surface tester. **07**
- Q.4 (b)** Explain with neat sketch, applications and working principle of LVDT. **07**
- Q.5 (a)** Describe with sketch, bimetal strip thermometer. **07**
- (b)** Explain in brief, Bourdon tube pressure gauge. **07**
- OR**
- Q.5 (a)** Explain the principles of thermocouples stating an illustrations. **07**
- (b)** Define fit. Describe the various types of fits. **07**
