Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEM-VII Examination-Nov/Dec.-2011

Subject code: 170204 **Date: 26/11/2011**

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)**	What do you understand by measurement? What are the fundamental methods of measurement?	**07**
	(b)	Briefly explain the following terms 1) Accuracy 2) Range 3) Repeatability 4) Sensitivity With respect to measuring instruments.	**07**
Q.2	**(a)**	What is tolerance? Why tolerances are specified? Explain unilateral and bilateral tolerances with Examples?	**07**
	(b)	What is fit? Explain the following fits with a neat sketch :- 1)Clearance fit 2)Interference fit 3)Transition fit	**07**
		OR	
	(b)	What are the possible sources of error in a measurement? What do you understand by systematic and random errors? Explain Gear Tooth Thickness measurement using vernier gear tooth caliper with a neat sketch	**07**
Q.3	**(a)**	Explain Angle measurement using Vernier bevel protractor with a neat sketch.	**07**
	(b)	Explain Gear Tooth Thickness measurement using vernier gear tooth caliper with a neat sketch.	**07**
		OR	
Q.3	**(a)**	Explain Screw Thread measurement using two wire and three wire method.	**07**
	(b)	Explain briefly: 1)Slip gauges 2)Dial indicators	**07**
Q.4	**(a)**	Explain Bimetallic thermometer and Thermocouple as a temperature measuring devices with a neat sketch?	**08**
	(b)	Explain construction and working of a Resistance thermometer with a neat sketch	**06**
		OR	
Q.4	**(a)**	Explain briefly the two gauges, Bourdon tube pressure gauge and Diaphragm pressure gauge with a diagram.	**08**

	(b)	Explain McLeod gauge with a diagram.	**06**
Q.5	**(a)**	Explain Rotameter as a flow measuring device with a diagram.	**07**
	(b)	Write a short note on – 1)Need of measurement 2)Line and end standards in measurement	**07**
		OR	
Q.5	**(a)**	Explain the principle and types of electrical Strain gauges	**07**
	(b)	Explain Piezoelectric Accelerometer with a neat sketch.	**07**

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