Seat No.: _____   Enrolment No._____

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: i) Ten point height method ii) Peak to valley height method iii) Average roughness method	**07**

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: i) Profile checking ii) Backlash checking iii) Checking of composite errors	**07**

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 peizo electric and seismic accelerometer.	**07**

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