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

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC SEM-II Examination-Dec-2011

Subject code: X21903 **Date: 28/12/2011**

Subject Name: Mechanical Measurement & Metrology

Time: 10.30 am -1.00 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)**	Differentiate between line standard and End standard. Explain following terms: 1) Accuracy 2) Precision.	**07**
	(b)	Describe with neat sketch the construction & working of a Micrometer. Explain how least count is found & reading is taken. What is zero error?	**07**
Q.2	**(a)**	Explain the applications of following : 1) Slip gauges 2) Sine bar.	**07**
	(b)	Describe with sketch the construction and working of Sigma Comparator.	**07**
		OR	
	(b)	Describe with sketch the construction and use of a Combination Set stating Limitation.	**07**
Q.3	**(a)**	Explain in detail how PCD is measured with the help of gear tooth vernier caliper.	**07**
	(b)	Describe with sketch principle, construction and use of Autocollimator.	**07**
		OR	
Q.3	**(a)**	What is an effective diameter of threads? State its significance. Explain with sketch Measurement of Effective Diameter by Two Wire method stating limitation...	**07**
	(b)	Explain Surface Texture and Elements of Surface Roughness.	**07**
Q.4	**(a)**	Explain in brief generalized measuring system. Show a block diagram of measurement scheme for pressure actuated thermometer.	**07**
	(b)	Explain the construction and working of LVDT stating applications.	**07**
		OR	
Q.4	**(a)**	List and explain characteristics of measuring devices stating illustrations.	**07**
	(b)	Explain the principle, working and method of speed measurement using Stroboscope stating an illustration.	**07**
Q.5	**(a)**	Explain with sketch construction and working of Piezometer & U-Tube Manometer stating application.	**07**
	(b)	List and explain with sketch types of expansion thermometer stating application.	**07**
		OR	
Q.5	**(a)**	Describe with sketch construction and working of Dead Weight Pressure Gauge Tester. State sources of error and their remedies.	**07**
	(b)	Explain in brief the principles of thermocouple stating an illustration.	**07**

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