

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY**PDDC - SEMESTER-II • EXAMINATION – SUMMER 2013****Subject Code: X21903****Date: 13-06-2013****Subject Name: Mechanical Measurement & Metrology****Time: 02.30 pm - 05.00 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)	Define Measurement and Metrology. State the necessity of metrology. Explain the role of different standards.	07
	(b)	How is the vernier micrometer better than vernier caliper or micrometer?	07
Q.2	(a)	What is a sine center? Briefly describe its use and limitations.	07
	(b)	What is the use of telescopic gauge? Explain its constructional features and applications in the industries.	07
		OR	
	(b)	Discuss the construction and working of vernier bevel protector with neat sketch.	07
Q.3	(a)	Explain the three wire method to measure the effective diameter of screw thread.	07
	(b)	Explain the alignment test on lathe machine with neat sketch.	07
		OR	
Q.3	(a)	Explain Parkinson gear tester with a neat sketch.	07
	(b)	Explain pneumatic comparator and state the advantages and disadvantages.	07
Q.4	(a)	Define the following terms (1)Threshold (2) Sensitivity (3) Hysteresis (4) Precision (5) Dead zone (6) Drift (7) Reproducibility	07
	(b)	Discuss the static characteristics of the instrument briefly.	07
		OR	
Q.4	(a)	Explain working principle of rope brake dynamometer.	07
Q.4	(b)	Explain the procedure to measure the speed of given shaft with help of flushing stroboscope.	07
Q.5	(a)	Explain working principle of bimetallic thermometer with neat sketch. Also state its working range and application.	07
	(b)	Explain the calibration of pressure measuring instrument briefly.	07
		OR	
Q.5	(a)	State advantages and limitations of manometers & state the ideal Characteristics of manometric liquid.	07
	(b)	Discuss the construction and working of RTD with neat sketch.	07