Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – WINTER • 2013

Subject code: 1722804			
•	•	Name: Metrology & Computer Aided Inspection	
		0.30 am – 01.00 pm Total Marks: 70	
Inst		tions:	
	2.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	a	Explain the principle of interference. How do you measure flatness using this principle?	07
	b	Discuss the method of measuring straightness using autocollimator	07
Q.2	a b	What is the limitation of sine bar? Explain the term traceability & GD. With neat sketch discuss the principle of pneumatic comparator giving specific application.	07 07
		OR	
	b	What is tolerance stack? Explain tolerance analysis.	07
Q.3	a b	Define cylindricity. Explain any method to measure the same. Sketch the general layout of a surface texture & explain the various terms. OR	07 07
Q.3	a b	How does LASER help in on line measurement of diameter? Explain straightness measurement using LASER.	07 07
Q.4	a b	Discuss the steps in machine vision. Explain the use of machine vision in measuring surface roughness. OR	07 07
Q.4	a	Discuss the principle of microwave sensing with its use in any industrial application.	07
	b	Explain physical & thermal properties of a gauge block.	07
Q.5	a b	How does CMM help in computer aided quality control? Explain the use of acoustical techniques in metrology. OR	07 07
Q.5	a h	State the principle & working of inductive proximity sensors. Discuss the method of measuring tool wear	07 07
