Seat No.:	Enrolment No.

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

		M. E SEMESTER – II • EXAMINATION – V	VINTER • 2014
S	Subject code: 1722804 Date: 05-12-2014		
S	ubj	ect Name: Metrology and Computer Aided Inspec	tion
T	<b>`ime</b>	e: 02:30 pm - 05:00 pm T	otal Marks: 70
I	Instructions:		
_		1. Attempt all questions.	
		2. Make suitable assumptions wherever necessary.	
		3. Figures to the right indicate full marks.	
<b>Q.1</b>	a	Explain the use of contact sensors for surface finish measurer	
	b	Discuss the working principle of bar code systems.	07
Q.2	a	What is machine vision? Explain normalization.	07
	b	Describe manufacturing application of photo detectors.	07
		OR	
	b	What is tolerance stack? Discuss the method of tolerance and	dysis. 07
Q.3	a	Discuss the methods of measuring cylindricity.	07
	b	Explain the method of measuring straightness by LASER.	07
		OR	
<b>Q.3</b>	a	What is interference? Explain the use of optical flat in	07
		detecting flatness.	
	b	What is gauging? State Taylor's principle of gauging. State	07
		the limitations of the principle.	
Q.4	a	Explain classification of CMM stating applications.	07
	b	Discuss the principle, working & construction of mechanical	comparator. 07
		OR	
<b>Q.4</b>	a	Explain the role of acoustical measurement in metrology?	07
	b	Discuss methods of assessing & presenting experimental DA	ΓA. <b>07</b>
Q.5	a	How do optoelectronic devices help in on line monitoring sys	stems? 07
	b	Explain the principle of pneumatic comparator with neat sket with application.	ch <b>0</b> 7
		OR	
Q.5	a	What is traceability? Explain the method to set an angle of 70	)° 07
~	••	by sine bar.	
	b	Discuss the method of calibrating length standard.	07

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