Seat No.:	Enrolment No.
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## GUJARAT TECHNOLOGICAL UNIVERSITY

**BE - SEMESTER-IV • EXAMINATION - WINTER • 2014** 

Su Ti	ibjec ime: structi	t Code: 143402  t Name: Metrology and Computer Aided Inspection  02:30 pm - 05:00 pm  Total Marks: 70  ions:  Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.	
Q.1	(a) (b)	Describe the different types of errors in measurement and their causes. With suitable example, explain the difference between precision and accuracy.	07 07
Q.2	(a)	<u> </u>	07
	<b>(b)</b>	instruments.  Explain with neat sketch how a vernier caliper is used for linear measurements.  OR	07
	<b>(b)</b>	Describe with the help of neat diagram, vernier bevel protector.	07
Q.3	(a)	With the help of neat sketch, describe the construction and working of profilometer.	07
	<b>(b)</b>	Define straightness. Describe any one method of measuring straightness of surface.	07
		OR	
Q.3	(a) (b)	Describe the methods used for measuring the radius of surface. Explain the different types of surface texture.	07 07
Q.4	(a) (b)	With a neat sketch, explain the working of laser interferometer.  Describe briefly the construction and operation of CMM.	07 07
Q.4	(a) (b)	OR What are the applications of vision system in metrology? List out the various probes used in CMM and explain the working principle of	07 07
	(0)	touch trigger probe.	U/
Q.5	(a)	Briefly explain POKA-YOKE method with a suitable sketch.	07
	<b>(b)</b>	Explain image models and histogram models. <b>OR</b>	07
Q.5	(a) (b)	Discuss about the zero defects in computer integrated quality assurance Explain laser micrometer with a neat sketch.	07 07

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