Seat No.: Enrol	nent No.
-----------------	----------

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV • EXAMINATION - WINTER 2013

•		de: 141901 Date: 23-12-2013	
_		me: Mechanical Measurement and Metrology	
		0 pm to 05:00 pm Total Marks: 70	
Instruc	1. At	tempt all questions. ake suitable assumptions wherever necessary.	
		gures to the right indicate full marks.	
Q.1	(a)	Define Metrology. Explain clearly difference between primary, secondary and working standards.	07
	(b)	Define and Explain following terms (i) Sensitivity (ii) Linearity (iii) Hysteresis	07
Q.2	(a)	bar	07
	(b)	Explain working principle of micrometer Draw neat sketch of micrometer and Label each parts of micrometers OR	07
	(b)		07
	(a)	Explain with neat sketch measurement of effective diameter screw thread using three wire methods. How best size of wire is selected.	07
	(b)	Explain method tooth thickness measurement by Gear tooth Vernier caliper.	07
		OR	
Q.3	(a) (b)	Explain construction and working of Tomlinson surface roughness tester. State the various possible errors on the gear. Explain how circular pitch measuring machine measure circular pitch error of Gear	07 07
Q.4	(a)	Explain working of dead weight tester .how pressure gauge is calibrated on dead weight tester.	07
	(b)	Explain with neat sketch working of optical pyrometer OR	07
Q.4	(a)	method	07
Q.4	(b)	Explain working of Mcleod gauge for pressure measurement	07
Q.5	(a)	Explain the alignment Test on the lathe machine is carried out explain various step in brief.	07
	(b)	Explain in brief following (i) Nutating disc flow meter (ii) construction and working of load cell. OR	07
Q.5	(a)	(LVDT) and advantages disadvantage of LVDT	07
		Explain following method for measurement of straightness (i) The Auto- collimator method (ii) Precision sprit level method	07
