Seat No.:	Enrolment No.
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GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER III (NEW) – EXAMINATION – WINTER-2016

•		Code: 2735004 Date:25/10/2016 lame: METROLOGY AND COMPUTER AIDED INSPECTION	
	e:02: ctions	30 pm to 05:00 pm Total Marks: 70	
	2.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q-1	(a) (b)	Explain the working principle of tool makers microscope with neat sketch and brief how to use it for measuring instruments. How to measure surface finish by using Tomlinson surface metre? Explain with neat	07 07
Q-2	(a)	sketch? 1. Explain the difference between systematic error and random error? 2. Explain use of height gauge with neat sketch?	04
	(b)	State type of vernier calipers and explain its working principles?what is L.C?	07
		OR	
	(b)	Explain working principle of micrometer with neat sketch?	07
Q-3	(a)	Explain the functioning of human vision system?	07
	(b)	Explain about computer imaging system and image analysis? OR	07
Q-3	(a)	What is the role of legal metrology? Why calibration is required for measuring instruments?	07
	(b)	Write the principle of light intereference?	07
Q-4	(a)	Explain the working principle of Tool makers Microscope with neat sketch and brief how to use it for measuring measurements.	07
	(b)	Write the types of Coordinate Measuring Machine. Explain in brief about any one CMM with neat sketch.	07
0.4	(-)	OR	0.5
Q-4	(a)	Write the objectives of quality assurance system.	07
Q-5	(b) (a)	Draw and explain fishbone chart for action plan to achieve the quality. Explain Histogram model with neat sketch.	07 07
Y -2	(a)	Define gray scale analysis. Write the advantages and limitations of computers in	
	(b)	Metrology.	07
Q-5	(a)	OR Explain about vision system with suitable block diagram.	07
V 2	(a) (b)	Write the working principle of machine vision system with block diagram.	07