GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–IV(NEW) – EXAMINATION – SUMMER 2019

Subject Code:2143402   **Date:17/05/2019**
Subject Name: Metrology and Computer Aided Inspection
Time:02:30 PM TO 05:00 PM   **Total Marks: 70**

Instructions:
1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

			MARKS
Q.1	**(a)**	Define Limits, Fits & Tolerance.	**03**
	(b)	Write short note on Dimensional Tolerance & Form Tolerance.	**04**
	(c)	Differentiate b/w Line standard & End standard.	**07**
Q.2	**(a)**	Define inspection & its need.	**03**
	(b)	Write short note on maintenance of measuring instrument.	**04**
	(c)	Define Sensitivity, Repeatability, Magnification, Readability and Reproducibility of measuring instrument.	**07**
		OR	
	(c)	Give classification of comparators & explain Dial indicator with sketch.	**07**
Q.3	**(a)**	Explain how to measure the unknown angle by using Sin Bar.	**03**
	(b)	Write short note on Limit Gauge.	**04**
	(c)	Explain the working principle of Micrometer with neat sketch.	**07**
		OR	
Q.3	**(a)**	Define Surface Roughness.	**03**
	(b)	Define following terms-Waviness, Lay, Sample length, flaws.	**04**
	(c)	Explain Profilometer with neat sketch.	**07**
Q.4	**(a)**	Explain the application of Laser Interferometer in testing of machine tools.	**03**
	(b)	Define Straightness, Flatness, Roundness, Circularity, concentricity.	**04**
	(c)	Write short note about Tool Maker's Microscope with neat sketch.	**07**
		OR	
Q.4	**(a)**	Write short note on Bevel Protractor.	**03**
	(b)	Explain & draw the schematic arrangement of Laser Interferometer.	**04**
	(c)	Explain construction & working principle of optical microscope.	**07**
Q.5	**(a)**	Explain the principle of Nano metrology.	**03**
	(b)	Write application & advantage of CMM.	**04**
	(c)	Define CMM & explain any one CMM with neat sketch.	**07**
		OR	
Q.5	**(a)**	Define terms: (1) Primary texture (2) Secondary texture.	**03**
	(b)	Write short note on Computer Aided Inspection.	**04**
	(c)	What is Machine Vision System? Explain the principle of working with suitable sketch.	**07**

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