

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- IVth SEMESTER-EXAMINATION – MAY/JUNE- 2012

Subject code: 143402

Date: 25/05/2012

Subject Name: Metrology & Computer Aided Inspection

Time: 10:30 am – 01:00 pm

Total Marks: 70

Instructions:

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

- Q.1** (a) Explain the working principle of Tool makers Microscope with neat sketch and brief how to use it for measuring measurements. **07**
(b) Write short notes about accuracy and precision. **07**

- Q.2** (a) Write any three identification of surface texture symbol with sketch. **07**
(b) Write the types of profilometer. Write the working principle and advantages about any one profilometer with schematic diagram. **07**

OR

- (b) Write the sine principle. How to measure the unknown angles by using sine bar. **07**

- Q.3** (a) Explain the functioning of human vision system. **07**
(b) Explain about Computer imaging system and image analysis. **07**

OR

- Q.3** (a) Write the principles of light interference. **07**
(b) Write the working principle with schematic diagram and specification of any one Laser interferometer. **07**

- Q.4** (a) Write the various types of CMM. Explain in brief about Bridge CMM with neat sketch. **07**
(b) Write short notes about laser micrometer. **07**

OR

- Q.4** (a) Explain in brief about laser scanning gauge. **07**
(b) Write short notes about non contact and in-process inspection. **07**

- Q.5** (a) Define Total quality control. Explain how it is important in metrology? **07**
(b) Brief about quality assurance and PDCA. **07**

OR

- Q.5** (a) Explain the concept involved in POKA - YOKE. **07**
(b) Explain about Zero Defects. How it is implemented in Industry with suitable example? **07**
