

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV • EXAMINATION – SUMMER 2013

Subject Code: 143402

Date: 12-06-2013

Subject Name: Metrology and Computer Aided Inspection

Time: 10:30am – 01:00pm

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) Define Sine Principle. Explain how unknown angles are measured by using Sine Principle? **07**
- (b) How to measure surface finish by using Tomlinson Surface meter? Explain with neat sketch. **07**
- Q.2** (a) Distinguish between accuracy and precision. **07**
- (b) Write short notes static error, dynamic error and environmental error. **07**
- OR**
- (b) Explain about Height gauge with neat sketch. **07**
- Q.3** (a) Write short notes about Tool maker's microscope with neat sketch. **07**
- (b) Write the terminology used for surface roughness with simple sketch. **07**
- OR**
- Q.3** (a) Write the characteristics of any three light source's used for interferometry. **07**
- (b) Explain how to measure measurement by using Michelson Interferometer. **07**
- Q.4** (a) Explain the Zero defect principle and write any five advantages of Zero defects. **07**
- (b) Write short notes about Total Quality Control and Quality Assurance. **07**
- OR**
- Q.4** (a) Write short notes about interchangeability and selective assembly. **07**
- (b) Write short notes about POKA – YOKE. **07**
- Q.5** (a) Write the types of Coordinate Measuring Machine. Explain in brief about any one CMM with neat sketch. **07**
- (b) Write short notes about Laser Scanning gauge and explain the working principle with simple sketch. **07**
- OR**
- Q.5** (a) Write the four steps involved in Image scale processing Techniques. **07**
- (b) Draw and explain about block diagram of a machine vision system functions. **07**
