GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. - SEMESTER – II • EXAMINATION – WINTER 2012

Subject code: 1722804   **Date: 02-01-2013**
Subject Name: Metrology and 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) What is the difference between accuracy and uncertainty, and precision **07** and accuracy?

(b) What is the relationship between sensitivity and range? What is the **07** disadvantage of very sensitive instrument?

Q.2 (a) Discuss the various types of errors. **07**

(b) Explain application of sensor in measurement with example. **07**

OR

(b) Discuss factor affecting in selection of measuring instrument. **07**

Q.3 (a) How computer aided inspection is beneficial in manufacturing process. **07**

(b) Classification of method of measurement. **07**

OR

Q.3 (a) Explain Hall effect sensor and proximity sensor. **07**

(b) Explain tool wear measurement and surface measurement. **07**

Q.4 (a) Discuss the machine vision system. **07**

(b) Enlist of coordinate measuring machine and explain any one. **07**

OR

Q.4 (a) Advantages, Disadvantages, Application and features of CMM. **07**

Q.4 (b) Write a short note on LASER Interferometer. **07**

Q.5 (a) Comparison between Line standard and End standard. **07**

(b) Explain with neat sketch mechanical type sigma comparator. **07**

OR

Q.5 (a) Explain Limitation, characteristics and error in sine bar. **07**

(b) Feature of transducers. **07**

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