



Reg. No. :

Name :

**Sixth Semester B.Tech. Degree Examination, May 2012
(2008 Scheme)**

08.601 : METROLOGY & INSTRUMENTATION (MP)

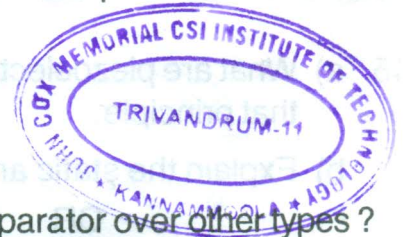
Time : 3 Hours

Max. Marks : 100

Instructions : i) Answer **all** questions from **Part A**.
ii) Answer **one** full question from **each** Module in **Part B**.

PART – A

1. List different standards of measurement and briefly explain any one of them.
 2. What is meant by sensitivity of spirit level ? How various parameters affect sensitivity of spirit level ?
 3. What is the working principle of an optical flat ?
 4. Write notes on machine vision systems.
 5. What are the advantages of differential pneumatic comparator over other types ?
 6. Define the term calibration.
 7. Define the terms, basic size, tolerance, deviation and allowance.
 8. What is a transducer ? Explain its classifications.
 9. Name different types of strain gauges. Which one is commonly used and why ?
 10. What are Thermistors ? Explain.
- (10×4=40 Marks)**



PART – B

MODULE – I

11. a) Derive an expression for the sensitivity of a spirit level. 8
- b) Explain any three methods of measurement of angles. 12

OR



12. a) Define the terms 'Fits' and 'Tolerance'. Distinguish between unilateral and bilateral tolerance system. 12
- b) Distinguish between line and end standards. 8

MODULE –II

13. a) What are the conditions for light interference ? How interferometer can be used for checking straightness ? 10
- b) What is a co-ordinate measuring machine (CMM) ? Explain its features. 10

OR

14. a) Explain the measurement of the major elements of a gear. 10
- b) With a neat sketch explain the working principle of a sigma comparator ? 10

MODULE – III

15. a) What are piezoelectric transducers ? Explain any two instruments working on that principle. 10
- b) Explain the static and dynamic characteristics of a measuring instrument. 10

OR

16. a) Describe a LVDT and explain its principle of operation. 10
- b) Explain the working of an optical strain gauge. 10