



Reg. No. : .....

Name : .....

**Sixth Semester B.Tech. Degree Examination, May 2013**  
**(2008 Scheme)**  
**08.601 : METROLOGY AND INSTRUMENTATION (MP)**

Time : 3 Hours

Max. Marks : 100

**Instructions :** 1) Answer **all** questions from **Part – A**.  
2) Answer **one** full question from **each** Module in **Part – B**.

**PART – A**

1. What are the objectives of engineering metrology ?
2. Explain fundamental deviation and grade of tolerance with reference to Indian std. System.
3. With suitable examples explain briefly the difference between Line standard and End standard.
4. Explain the process of wringing of slip gauges.
5. Write short note on Angle dekkor.
6. Explain parallax error and state how it can be taken care of
7. What are the advantages and disadvantages of electrical comparators ?
8. Explain the terms :  
i) Ra value and            ii) Rz value.
9. What do you mean by the gauge factor of a strain gauge ?
10. Explain the term transducer with the help of any one example.



**(10×4=40 Marks)**

**PART – B**

(Answer **one** full question from **each** Module)

**Module – I**

11. State the principle of Vernier instrument and explain briefly the construction and use of vernier caliper with a neat sketch.

OR

12. a) Discuss the use of taper plug gauges.  
b) Explain with sketch the allocation of gauge tolerance and wear allowance for workshop, inspection and general grade conditions.

**Module – II**

13. a) Sketch and interpret the meaning of various interference fringe patterns observed using an optical flat.  
b) Describe the working principle and advantages of any one mechanical comparator.

OR

14. a) With the help of a neat sketch explain the construction and working of a profilometer.  
b) Suggest a suitable method of inspection for the profile of screw thread with sketches.

**Module – III**

15. a) Explain the different standard inputs used for studying the dynamic response of a system.  
b) Sketch and explain the response of a first order system when subjected to step input signal.

OR

16. a) Explain with the help of a neat sketch how an LVDT is used for displacement measurement.  
b) Discuss the construction and working of Wheatstone's bridge circuit.

(3×20=60 Marks)