

**End Semester Examinations - 2015-16 Even Semester - May 2016**

**14ME2006 Metrology and Measurement Systems**

**Set A**

**Time : 3 hrs**  
**Total Marks: 100**

1. What do you mean by error in measurement? Explain in detail the different types and the sources of errors. How such errors can be minimized?  

**OR**
2. Write short notes on readability and sensitivity of measuring instruments. What are the effects of these parameters on quality control?
3. Enumerate the working principle, construction and working of plunger type dial indicator. List out its applications.  

**OR**
4. With a neat sketch explain the construction and working of a vernier caliper. What are all the possible ways by which it can be used for taking measurement?
5. a) Explain the construction and working of sigma comparator with a neat sketch. (12)  
b) With a neat sketch outline the procedure for setting an angle using a sine bar. (8)  

**OR**
6. a) Explain in brief about the construction and working principle of electrical comparator. List out its advantages and disadvantages (12)  
b) Explain the construction and working of bevel protractor (8).
7. Illustrate the measurement of straightness using straight edge, spirit level and autocollimator methods:  

**OR**
8. Discuss the different measuring instruments and methods used for the measurement of major diameter and minor diameter of external and internal screw threads.
9. **COMPULSORY**  
Describe the principle, construction and working of N.P.L interferometer. List out its applications.

**Wishing you All the Best**