

Roll No \_\_\_\_\_

Total No of pg: 1

**Examination May-2014**  
**MECHANICAL MEASUREMENT AND METROLOGY**  
**Paper Code (ME-307)**  
**Paper ID: A0817**

**Time : 03 Hrs.**

**Max. Marks:60**

**SECTION – A**

**(Attempt All questions)**

1.
  - i) Name some auxiliary functional elements of a measurement system.
  - ii) What is meant by hysteresis in measurement systems?
  - iii) What is error propagation?
  - iv) How do you determine the least count of a micrometer?
  - v) Is there any difference between straightness and flatness? Comment.
  - vi) Discuss what is gauge factor?
  - vii) What are terminating devices?
  - viii) Discuss the application of an ionisation gauge.
  - ix) What is the difference between zero correction and calibration.
  - x) What is the difference between a brake and a dynamometer.

**(2x10=20)**

**SECTION – B**

**(Attempt any Four questions)**

2. Discuss the difference between the basic and auxiliary functional elements of a measurement system.
3. Discuss the various systematic errors that can occur in the use of measurement systems.
4. Discuss the procedure and applications of the three wire method.
5. Discuss in detail the principle involved in the working of bimetallic thermometers.
6. Discuss the working procedure and underlying principle of a vibration reed tachometer.

**(5x4=20)**

**SECTION – C**

**(Attempt any Two questions)**

7. Discuss the various static and dynamic Characteristics of measuring instruments.
8. Why do comparators get their name? Explain the underlying principle, working procedure of an electrical (LVDT) comparator.
9. What is an ultrasonic flow meter? Discuss its working principle, procedural details and main applications.

**(10x2=20)**

.....End.....