No. of Printed Pages : 2 **BME-062**

0057

# DIPLOMA IN MECHANICAL ENGINEERING (DME)

## Term-End Examination

## December, 2013

## BME-062 : METROLOGY AND INSTRUMENTATION

*Time : 2 Hours* *Maximum Marks : 70*

***Note :*** *Attempt **any ten** questions. All questions carry **equal marks.** Use of calculator is permitted.*

---

**1.** What do you understand by precision measurement ? How precision is different from accuracy of measurement ? 7

**2.** What is interchangeability ? Discuss its advantages and relation with standardization. 7

**3.** Differentiate between measuring instrument and comparators with the help of suitable examples. 7

**4.** Describe the procedure of using sine bar to measure angle with the help of suitable diagram. 7

**5.** What are the limit gauges ? How these are different from standard gauges ? Discuss. 7

**6.** Describe the working principle of a resistance transducer used to measure any mechanical signal. 7

7. Describe the working procedure of an Autocollimator along with its advantages. 7

8. Write the general specifications of try square and surface plate. 7

9. Describe the procedure of determination of least count of a vernier bevel protractor. 7

10. List the various parameters measured in case of a gear tooth. Describe the procedure of measurement of any one of these. 7

11. Define error of measurement. What are the difference between percentage error and absolute error ? 7

12. What are the different types of elements required to be measured in case of inspection of internal and external screw threads ? 7

13. Explain the working principle of a Dial indicator with the help of a neat sketch. 7

14. What is coordinate measuring machine ? Discuss its applications and advantages. 7

15. Explain the procedure of measurement of taper with the help of rollars. 7