**REG.NO:**

**SEMBODAI RUKMANI VARATHARAJAN ENGINEERING COLLEGE**

**ACADEMIC YEAR 2013-2014/ODD SEMESTER**

**MODEL EXAM**

**DEPARTMENT OF MECHANICAL ENGINEERING**

**SUBJECT CODE/TITLE:** ME2304 ENGINEERING METROLOGY AND MESUREMENTS

**YEAR/SEM:** III/V **DATE:**

SET-B

**DURATION:** 180 Mins **MAX.MARKS:** 100

 **PART – A**

 (10 \* 2 = 20 marks)

 1. Differentiate between sensitivity and range

 2. What are the sources of error?

 3. How are all mechanical comparator effected?

 4. Name any two materials commonly used for gauges.

 5. Define Module

6. State the methods used for checking gear tooth profile.

 7. What is the advantage of using laser beam in interferometry?

 8. What is CMM?

9. List any two methods used for measuring torque.

10. What is Kentometer?

 **PART- B**

 (5 \* 16 = 80 marks)

11.(a) (i) Enumerate the generalized measurement system.(8)

 (ii) Define “systematic errors” and explain causes of those errors with examples.(8)

 (Or)

(b) (i) Explain the following terms in precision measurements: (1) Accuracy (2)Sensitivity

 ( 3)Readability (4)dynamic response. (8)

 (ii) Explain briefly the classification of various measuring methods. (8)

 12. (a) Explain with the help of neat sketches, the principle and construction of an

 Angle dekkor. (16)

 (Or)

(b) (i) Explain the solex air gauge?. (8)

 (ii)Explain the principle of working of optical comparator. (8)

13. (a) (i) Explain the construction and working of Gear tooth vernier. (8)

 (ii) Explain any two taper measurements method. (8)

 (Or)

(b) (i)Derive an expression for estimation of best size wire. (8)

(ii)Describe a method used to check the flatness of a surface plate. (8)

 14. (a) (i)Explain with a neat sketch the construction and working of laser interferometer. (8)

 (ii) Explain Different types of CMM. (8)

 (Or)

(b) (i) Explain how profiles are checked using laser viewers (8)

 (ii) Discuss the merits of computer aided inspection. (8)

 15. (a) Explain the construction and working of Venturimeter and Rotameter.(16)

 (Or)

(b) Explain the construction and working of Bimetallic strip and Thermocouple