



B.E DEGREE EXAMINATIONS: MAY 2015

(Regulation 2009)

Fifth Semester

MECHATRONICS ENGINEERING

MCT111: Dimensional Metrology

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Sensitivity and range of measuring instrument have
 - a) Direct relationship
 - b) No relationship
 - c) Inverse relationship
 - d) Linear relationship
2. Which of the following instruments is most accurate
 - a) Mechanical comparator
 - b) Optical projector
 - c) Slip gauges
 - d) Vernier caliper
3. The thread micrometer measures
 - a) Effective diameter of thread
 - b) Major diameter of thread
 - c) Minor diameter of thread
 - d) Root diameter of thread
4. A Sine bar is specified by
 - a) its total length
 - b) the centre distance between two rollers
 - c) the size of the rollers
 - d) weight of sine bar
5. Which one of the following is not the angle measuring device?
 - a) Angle plate
 - b) Angle gauge
 - c) Sine bar
 - d) Bevel protractor
6. Planer gauge is used for
 - a) Testing flatness of surfaces
 - b) Adding to utility of measurements on surface plate
 - c) Testing radius of corners
 - d) Testing thickness of small gaps
7. The primary texture or roughness or micro-errors on surface results due to
 - a) Normal action of the tool in production process
 - b) Vibrations and non-uniformity of cutting process

b) Discuss in detail about the working of Photo-electric autocollimator.

23. a) What are the methods used to measure pitch diameter in threads? Describe the methods in detail with suitable examples.

(OR)

b) Explain the working of Parkinson Gear tester with a neat sketch.

24. a) Illustrate the working of Tomlinson Surface meter and specify the important points to be considered in the surface measurement.

(OR)

b) How can you measure the straightness of a surface? Explain with suitable example.

25. a) Summarize the important features of Co-ordinate measuring machines and also explain the different types of CMM available for practical use with neat sketches?

(OR)

b) Discuss in detail about how the Laser interferometer are used in metrology for linear and angular measurements?
