

Code :R5320302

R5

III B.Tech II Semester(R05) Supplementary Examinations, April/May 2011
METROLOGY & SURFACE ENGINEERING
(Mechanical Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

1. (a) Explain the unilateral and bilateral tolerance systems of writing tolerances with suitable examples.
(b) What is interchangeability? Which system is preferred in interchangeable manufacturing? Why?
2. (a) With the help of neat sketches, explain how a sine bar is used to determine the taper angle of an inclined surface?
(b) Name the Various factors affecting the accuracy of the sine bar and state the specification of sine bar.
3. What are the various instruments used for measuring flatness of a surface plate? Describe the test procedure by using one of such instrument.
4. Name the various numerical methods of assessment of surface finish? Explain them in detail? with an example.
5. (a) Explain the working of a differential screw type micrometer with the help of neat sketches.
(b) Describe the method of checking flatness and square ness with the axis of spindle end of an external micrometer.
6. Discuss various machine tool tests common to most of machine tools? Explain them.
7. Explain in detail the following methods of inspecting gear
 - (a) Concentricity & cylindricity
 - (b) Run out and axial slip.
8. Write short notes on:
 - (a) Centrifugal Blasting
 - (b) Sand Blasting
 - (c) Wet abrasive Blasting.
