



Reg. No. :

Name :

VII Semester B.Tech. Degree Examination, May/June 2009

Branch : Mechanical (M)

Lab : MECHANICAL ENGINEERING LAB (MU)

Time : 3 Hours

Max. Marks : 100

1. Calibrate the given LVDT using slip gauge and measure the thickness of given specimen using LVDT.
2. Determine the average grain size of given aluminum specimen.
3. Determine the taper and tip radius of a ball point pen tip using suitable measuring equipments.
4. Determine the straightness error of given specimen and find the maximum straightness error.
5. Measure the height of the given specimen using dial gauge and slip gauge set.
6. Find the following tool angles for the given single point tool using suitable instrument and comment on your result :
 - i) Back rake angle
 - ii) Side rake angle
 - iii) Side cutting edge angle
 - iv) End cutting edge angle
7. Determine the flatness error of the given sin bar surface and plot the surface error.
8. Determine the grain structure and dendritic arm spacing of given MS specimen.
9. Calculate the surface roughness of the given specimen in terms of Ra and RMS value.
10. Determine the flatness error of given surface using autocollimator.
11. Prepare the drawing and do the various measurements of given thread using profile projector.
12. Draw the profile of given gear and measure major parameters.

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13. Conduct an experiment to determine the taper angle of the given specimen using sin bar.
 14. Check the roundness error of given rod using dial gauge.
 15. Determine the angle of the 'V' portion of the given V block using bevel protractor. Compare the measure using Combination set. Determine the dimensions of the given specimen to an accuracy of 20 microns and prepare the drawing to actual dimensions.
 16. Prepare the drawing of a given single point cutting tool after measuring the important elements using profile projector.
 17. Identify the given material by analyzing the microstructure and comment on your result.
 18. Conduct an experiment to determine the taper angle of the given specimen using sin bar.
 19. Analyse the cutting forces, with respect to the depth of cut for turning the given work piece.
 20. Measure the complete dimensions of the given specimen using suitable instruments and prepare a complete sketch.
 21. Determine the outer diameter of the specimen using vernier caliper and compare the dimensions using a micrometer of 1 micro accuracy.
 22. Analyse the cutting force, with respect to depth of cut for turning the given MS rod.
 23. Measure all the dimensions of given screw thread using universal measuring microscope.
 24. Determine the diameter and height of given specimen using slip gauge set and slip gauge accessories.
 25. Determine the surface roughness of given slip gauge in terms of Ra and RMS value.
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