2006 MEC603 ADVANCED METROLOGY AND COMPUTER AIDED INSPECTION TEST II

Max. Marks: 10+10=20 **Time: 1 Hour**

Use separate answer sheets for Part A and B

Part A

1. Explain any one method to determine the uncertainty of CMM measurement.
2. Sketch and describe the working of a CCD sensor.
3. A camera of focal length 100mm has its image plane coincident with the xy plane of the world coordinate system (WCS) with the lens optical axis along the z axis of the WCS. Sketch the image of a rectangle, which has vertices at (50, 50, 400), (-50, 50, 400), (-50, -50, 300) and (50, -50, 300) in the WCS.
4. What is histogram equalization? How is it carried out?
5. Explain how Hough transforms are used for identifying straight line boundaries from a set of edge points.

Solution to problem 3:

X	Y	Z	x	y
50	50	400	-16.6667	-16.6667
-50	50	400	16.6667	-16.6667
-50	-50	300	25	25
50	-50	300	-25	25