

7/10/13

B.E. / B.Tech. (Full Time) DEGREE END SEMESTER EXAMINATIONS – April/May 2013
MANUFACTURING ENGINEERING BRANCH
FIFTH SEMESTER

MF 9303 – PRECISION ENGINEERING
(REGULATIONS 2008)

(12)

Time : 3 Hours

Maximum Marks : 100

Answer All Questions

Part-A

(10 X 2 = 20 Marks)

1. What are 4 classes of machining accuracy?
2. Give the classifications of micro machining.
3. Distinguish between tolerance and allowance
4. How flatness of a component is assessed using a surface plate?
5. What are the requirements to be satisfied in designing a good guide way?
6. Give the Munday's classification of aerostatic bearing.
7. What is MEMS technology?
8. Compare and contrast Microelectronics and Micro systems.
9. Define 'Static Stiffness'.
10. What is the influence of clamping errors?

Part-B

(5 X 16 = 80 Marks)

11. Explain the effects of heat dissipation on the tool and workpiece in a machining operation. (16)
- 12.a.i. Explain the need for high precision machining. (8)
- ii. Discuss the applications of ultra precision machining. (8)

(OR)

- b. Explain in detail the types and applications of CBN tools. (16)
- 13.a.i. Explain any 8 terms associated with Tolerance and Fits. (10)
- ii. Explain making to suit with an example. (6)

(OR)

- b. Explain the need and the procedure for checking the squareness of a component. (16)

14.a. Explain various type of guide ways with neat sketches. (16)

(OR)

b. Explain the principle and applications of hydrodynamic bearings. (16)

15.a. Explain various elements of MEMS. (16)

(OR)

b. Explain the applications of MEMS in:

i. Aerospace industries. (8)

ii. Healthcare industries. (8)