Seventh Semester B.Tech. Degree Examination, June 2018
(2008 Scheme)
08.736 : MEMS (TA)

Time : 3 Hours

Max. Marks : 100

PART – A

Answer all questions. Each question carries 4 marks.

1. Explain the principle of shape memory alloys.

2. Bring out the advantages of using Micro rather than Macro.

3. Bring out the multidisciplinary aspects of MEMS.

4. Explain how comb drives can be used as sensor as well as an actuator.

5. List out the pros and cons of CVD techniques.

6. Bring out the principle of operation of any one RF MEMS device.

7. Discuss the effects of scaling in heat conducting and convection.

8. Compare wet and dry oxidation.

9. List out the silicon compounds used for MEMS.

10. State the reasons for Ion implantation during fabrication. (10×4=40 Marks)

PART – B

Answer any two questions from each Module. Each question carries 10 marks.

Module – 1

11. With neat sketches bring out the operation of micro valves.

12. Discuss the use of the Trimmer Vector for use in rigid body dynamics.

13. Discuss the principle of operation of micro motor.
Module – 2

14. Describe the general procedure for photolithography.

15. Describe both chemical etching and plasma etching. Bring out the difference between both.

16. Describe the steps involved in the micro fabrication of a cantilever using surface micromachining techniques.

Module – 3

17. Explain the options for signal transduction in Microsystems.

18. Bring out the design considerations die designing a micropressure sensor.

19. Explain the three levels of microsystem packaging. (6x10=60 Marks)