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A – 3862

Reg. No. :

Name :

Seventh Semester B.Tech. Degree Examination, June 2016
(2008 Scheme)
08.736 : MEMS (TA)

Time: 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions. **Each** question carries **4** marks.

1. With a neat schematic diagram explain micro pressure sensor.
2. List a few applications of micro systems in industrial products.
3. What are the different actuation methods for micro devices ?
4. Compare dry etching and wet etching.
5. What is ion implantation ?
6. What are the advantages of surface micro machining ?
7. Why Si is mostly used as the substrate material for MEMS and micro systems.
8. Explain Rf MEMS.
9. What are the objectives of Die-level packaging ?
10. What is signal mapping and transduction ?



(10×4=40 Marks)

PART – B

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

Module – I

11. Explain biomedical sensors and biosensors in detail.
12. Explain the working principle of microlinear motor with figure.

P.T.O.



13. a) Explain scaling in rigid body dynamics and scaling in heat conduction.
- b) Estimate the associated changes in acceleration time and power supply to actuate a MEMS component if its weight is reduced by a factor of 10.

Module - II

14. Explain two methods for doping a semiconductor material such as silicon with foreign substances.
15. With neat sketches explain the steps involved in photolithography.
16. Explain bulk micro manufacturing process.

Module - III

17. What are the various design considerations of a microsystem ?
18. How will you select suitable manufacturing processes for a micro system fabrication ?
19. Write notes on the three levels of microsystem packaging. **(6×10=60 Marks)**