

G 773

(Pages : 2)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2014

Seventh Semester

Branch : Electrical and Electronics Engineering

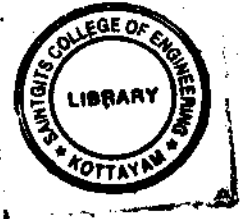
EE 010 706 L05—MEMS TECHNOLOGY (Elective II) (EE)

(2010 Admissions)

[Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks



Part A

Answer all questions.

Each question carries 3 marks.

1. Briefly explain the definition of MEMS.
2. Explain the working of thermal resistors.
3. What is an actuator ?
4. What is meant by micromachining ? What are its types ?
5. Write notes on passive MEMS structures.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Briefly explain the general materials the are used for making MEMS.
7. Write short notes on interdigitated finger capacitors.
8. Explain the applications of piezoresistive sensors.
9. Write short notes on plasma etching.
10. Write short notes on Active optical MEMs.

(5 × 5 = 25 marks)

Part C

Answer all questions.

Each question carries 12 marks.

11. Explain any two chemical vapour deposition techniques.

Or

12. What is the importance of MEMs in day-to-day life ? Give its brief history and some of its important characteristics.

Turn over

13. Explain about electrostatic actuation used in MEMs devices.

Or

14. Write short notes on sensors and actuators based on thermal expansion with the help of diagrams wherever necessary.

15. Write short notes on piezoelectric sensors and actuators with the help of diagrams wherever necessary.

Or

16. Write short notes on Magnetic actuation and fabrication of micromagnetic components.

17. With the help of neat diagrams, explain in detail the fabrication of a cantilever beam using Sacrificial material etching process.

Or

18. Explain :

(a) Ion-beam etching.

(b) Isotropic wet etching.

19. Write short notes on :

(a) MOEMs.

(b) Actuator for active optical MEMs.

Or

20. Write short notes on SPM prober with sensors and actuators.

(5 × 12 = 60 marks)

