

Exam.Code:0932
Sub. Code: 6636

2053

B.E. (Electronics and Communication Engineering)
Eighth Semester
EC-814: MEMS and Microsystems

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.

x-x-x

I. Answer the following:-

- a) What is sensor? How does it differ from a transducer?
- b) What is sputter deposition?
- c) Define thermal micro defector.
- d) Write short note on diffusion and oxidation.
- e) What is bulk micromachining? (5x2)

UNIT - I

- II. Discuss the design aspects of flow sensor using the thin film anemometer. (10)
- III. a) Write short notes on optical sensors, pressure sensors and thermal sensors.
b) What do you understand from actuation using electrostatic forces? (2x5)
- IV. a) List out the difference between microelectronics and MEMS.
b) Explain thermopile detectors on membrane. (2x5)

UNIT - II

- V. Explain in detail about surface micromachining and LGA process. (10)
- VI. a) What do you understand from computer aided design and how it is useful in Microsystems design?
b) Explain about physical vapor deposition. (2x5)
- VII. a) Write short notes on epitaxy and etching.
b) Explain the process of photolithography in detail. (2x5)

x-x-x