Exam.Code:0932
Sub. Code: 6636

2054

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) How micro sensor works?

b) What is Lucrative Revenue Prospects for Miniaturized Industrial Products?

c) Why Scaling required?

d) Give role of High-K.

e) Describe IC packaging process. (5x2)

UNIT - I

II. a) What are short channel effect? How they can be minimized.

b) What is full scaling? Describe its features. (2x5)

III. a) Explain process of scaling in electricity.

b) Why high-K materials used in MEMS devices? (2x5)

IV. a) Compare the properties of Silicon materials with AlAs.

b) How packaging materials are categorized? Give their prime features. (2x5)

UNIT - II

V. a) What is oxidation? Explain oxidation process.

b) How web etching take place? Describe it chemical reactions. (2x5)

VI. a) Explain chemical vapor deposition process.

b) Derive Fick's one-dimensional diffusion equation. (2x5)

VII. Write a note on:

a) Surface micromachining.

b) Computer aided design. (2x5)

x-x-x