

8E8023

Roll No. _____

[Total No. of Pages : 2]

8E8023

B.Tech. VIII Semester (Main&Back) Examination, April/May-2017
Electronic Instrumentation & Control Engg.
8EI4.2A MEMS and Nanotechnology
EC & EI

Time : 3 Hours

Maximum Marks : 80
Min. Passing Marks : 26

Instructions to Candidates:

Attempt any five questions, selecting one question from each unit. All Questions carry equal marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitable be assumed and stated clearly). Units of quantities used/calculated must be stated clearly.

Unit-I

1. Explain Methods of Synthesis of Nano particles in details. (16)

OR

1. a) Discuss Various Wall Structure of Carbon nano tube with suitable diagram. (8)
b) Explain Single Electron tunneling and its Current voltage Characteristics. (8)

Unit-II

2. Explain following Si processing methods (any two) : (16)

- a) Etching
b) Gettering
c) CVD

OR

2. Write a note on Lithography. (16)

Unit-III

3. a) Explain SEM and TEM with functional and Schematic diagram. (16)

OR

3. Explain NMR Spectroscopy and ESR Spectroscopy in details. (16)

Unit-IV

4. Explain the concept of quantum mechanics in quantum dots and explain nano sensors. (16)

OR

4. Explain one dimensional and two dimensional system in Quantum Mechanism. (16)

Unit-V

5. a) Write short note on MEMS. (8)
b) What do you mean by MEMS Packaging? Explain shortly (8)

OR

5. Write an essay on Application of MEMS in various fields. (16)

