SUBMISSION DATE: 27TH AUGUST' 2012

INTEGRAL UNIVERSITY

EC-707 NANOELECTRONICS

EC1 & EC2- 4th YEAR

ASSIGNMENT NO.1

Q1) a). Discuss the development of microelectronics during the last decade. How did nanoelectronics evolved?

b). Discuss the importance of MEMS.

Q2). a). With respect to the Characteristic times in semiconductors and the structural dimension of the devices, discuss the region of Nanostructures.

b). With reference to Nanotechnology, explain the band diagram of semiconductors and other inhomogeneous semiconductor structures.

Q3). a). What is SOI? Explain the different types of Transistor integration techniques.

b).Explain the term "Scaling" with respect to Microminiaturization in silicon.

Q4). Considering the wave nature of electrons (using Schrodinger's equation) explain how we can determine the relevant nano-electronic effects.

Q5). Write short notes on-

a). DNA computing

b). Nanomachines

c). Parallel Processing.