Total No. of Questions : 12]

SEAT No. :

P1989

[Total No. of Pages : 2

[5254] - 100 - A
B.E. (Electronics)
NANOTECHNOLOGY IN ELECTRONICS
(2008 Pattern)

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates :

1) ***Answer any 3 questions from each section.***
2) ***Answer to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Enlist the tools for measuring nanostructures. Explain any one tool in detail. **[8]**

b) Explain the fundamental science behind Nanotechnology. **[8]**

OR

Q2) a) Explain the tools to imagine nano-behaviours. **[8]**

b) Explain the tools to make nano-structures. **[8]**

Q3) a) Write short note on Novel dielectric materials for future transistors. **[8]**

b) Explain the silicon Nanocrystal non volatile memories. **[8]**

OR

Q4) a) Explain the nanoscale lithography. **[8]**

b) Explain the nano-CMOS devices. Also give its applications. **[8]**

P.T.O.

Q5) a) Explain the properties of nanotubes. **[8]**

b) Write short note on the following : **[10]**

i) Metal nanostructures.

ii) Semiconducting nano-particals.

OR

Q6) a) Explain any two applications of carbon nanotubes. **[8]**

b) Explain the following related to carbon nanostructure. **[10]**

i) Carbon molecules.

ii) Carbon clusters.

SECTION - II

Q7) a) Write a short note on molecular and super molecular switches. **[8]**

b) Explain the Micro Electro Mechanical Systems (MEMS). **[8]**

OR

Q8) a) Explain the lithography. **[8]**

b) Explain the Nano Electro Mechanical Systems. (NEMS). **[8]**

Q9) a) Explain the Atomic lithography. **[8]**

b) Explain the tools of manufacturing of micro and nano fabrication optical lithography. **[8]**

OR

*Q10)*a) Explain the nano Electronics for advanced computation and communication. **[8]**

b) Explain the Electron beam lithography. **[8]**

*Q11)*a) Explain the application of Nanotechnology to capture the light energy. **[8]**

b) Enlist the application of nanostructures in Electronics. Explain any one in detail. **[10]**

OR

*Q12)*a) Explain the application of nano structures in sensors and optics. **[8]**

b) Give the applications of Nanotechnology in Biomedical Electronics. Explain any one in detail. **[10]**

▽▽▽▽