

Total No. of Questions : 12]

SEAT No. :

P1766

[4859]-130

[Total No. of Pages :2

B.E. (Electronics)

**d-NANOTECHNOLOGY IN ELECTRONICS
(Semester-II) (2008 Course) (Elective-IV)**

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) Explain molecular recognition in detail. [8]
b) Explain scanning probe Instruments. [8]

OR

- Q2)** a) Explain NanoCAD, a tool to imagine nanoscale behaviours. [8]
b) Explain Dip pen Nanolithography in detail. [8]
- Q3)** a) Explain Novel dielectric materials for future transistors. [8]
b) What is silicon nanocrystal? How it is used in non volatile memories. [8]

OR

- Q4)** a) Explain the nanoscale lithography. [8]
b) What are nano-CMOS devices? Where are they used? [8]

- Q5)** a) Explain metal nanostructure & semi-conducting nanoparticles. [10]
b) Explain different properties of nanotubes. [8]

OR

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- Q6)** a) Explain carbon molecules and carbon clusters related to carbon nano structure. [10]
- b) Explain any two applications of carbon nanotubes. [8]

SECTION-II

- Q7)** a) Explain molecular and supramolecular switches. [8]
- b) How the airbags are activated in automobiles by principle of micro electromechanical (NAMS). [8]

OR

- Q8)** a) Explain lithography. [8]
- b) Explain nanodevices and nanomachines. [8]

- Q9)** a) Explain the tools of manufacturing of nano and micro fabrication. [8]
- b) Explain an automatic lithography. [8]

OR

- Q10)a)** Explain the electron beam lithography. [8]
- b) Explain the nanoelectronics for advanced computation and communication. [8]

- Q11)a)** Enlist the applications of nano structures in electronics. Explain any one in detail. [10]
- b) Explain the applications of nanotechnology to capture the light energy.[8]

OR

- Q12)a)** In optics how the nanotechnology is used. [8]
- b) What are different applications of nanotechnology in Biomedical Electronics. [10]

