

Nanotechnology

BE/VII/CBGS/BT/NANOTECH

22

QP Code : 5969

(3 Hours)

Total Marks-80

1. Q.No-1 is compulsory
2. Attempt any 3 questions from remaining Q2-Q6
3. All Questions Carry Equal Marks.
4. Illustrate Your Answer with suitable Diagram Wherever necessary.

- Q.1 a) What are the mile stones in the evolution of nanotechnology? (10M)
b) "One nanometer is a magical point on the dimension scale." Why? Explain? (10M)
- Q.2 a) What are carbon based nanomaterials? Explain with examples. (10M)
b) Explain the concept of bioconjugated silica nanoparticles for bioanalytical applications (10M)
- Q.3 a) What are potential application of Gold Nanoparticle? (10M)
b) Explain Micro and nanofluidic devices in biological studies (10M)
- Q.4 Write Short notes on (Any 4) (5X4=20)
- 1- Nanochips
 - 2- Preparation of nanobiomaterials like Alginates, Pectins, Chitin
 - 3- Nanocomposites for food packaging
 - 4- Synthesis of Nanodrugs
 - 5- Peptide nanotubes
 - 6- Quantum Dots
- Q.5 a) Explain the working of scanning electron microscopy (SEM) with a neat sketch? (10M)
b) Discuss the analysis of biomolecular structure by Atomic Force Microscopy? (10M)
- Q.6 a) Explain the concept of nanotechnology in cancer research? (10M)
b) Define nanotechnology. Give two examples each of materials naturally occurring at nanoscale and man made nanomaterials. (10M)

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