

(Following Paper ID and Roll No. to be filled in your
Answer Books)

Paper ID : 154852

Roll No.

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B.TECH.

Theory Examination (Semester-VIII) 2015-16

NANOBIOTECHNOLOGY

Time : 3 Hours

Max. Marks : 100

Section-A

Q.1. Attempt all parts. All parts carry equal marks. Write answer of each part in short. (2×10=20)

- (a) Define macromolecular assemblies.
- (b) What is nanobiology?
- (c) Explain about molecular motors and devices.
- (d) What is Moore's Law?
- (e) Discuss nanofabrication.
- (f) What are metallic nanoparticles?

- (g) Describe Biomimetics.
- (h) What are DNA Microprocessors?
- (i) Explain Biotemplating.
- (j) Define Lithography.

Section-B

**Q.2. Attempt any live parts. All parts carry equal marks:
(5×10=50)**

- (a) Explain Quantum dots and its applications.
- (b) What are synthetic biomedical polymers? Giving suitable examples describe the synthesis and use of any polymers in biomedical science.
- (c) Write down the applications of nanotechnology in biological research.
- (d) Give a brief idea about nanoparticle based immobilization assays.
- (e) Explain viruses as nanoparticles.
- (f) Describe the role of nanobiotechnology in tumor targeting.

(2)

- (g) Discuss the development of Drug delivery tools through nanobiotechnology.
- (h) Describe Surface Plasmon Resonance on nanoscale.

Section-C

Note: Attempt any two questions from this section. (2×15=30)

- Q.3. (a) Draw the block diagram of AFM.
(b) Describe AFM principle. Also write down the requirements for the functioning of AFM.
- Q.4. (a) Explain the biological synthesis of metal nanoparticles.
(b) Describe microfabrication technique briefly.
- Q.5. (a) What is molecular imprinting? Discuss its basic principle.
(b) Briefly discuss the applications of biosensor.

(3)