Printed Pages: 3 **EBT-052**

(Following Paper ID and Roll No. to be filled in your Answer Books)	
Paper ID : 154852	**Roll No.**

B.TECH.

Theory Examination (Semester-VIII) 2015-16

NANOBIOTECHNOLOGY

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

Section-A

Q.l. 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.

(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.