Printed Pages: 02 Sub Code: NBT011

Paper Id: 1 5 4 6 2 1 Roll No. [redacted]

B TECH
(SEM VI) THEORY EXAMINATION 2017-18
NANOBIOTECHNOLOGY

(Time: 3 Hours) **(Total marks: 100)**

SECTION – A

1: Attempt all parts. All parts carry equal marks. **[2x10=20]**

a. Why C-60 molecules are called as bucky balls? Give reasons?
b. What do you understand by the term Macromolecular assembly?
c. Define Nanobiotechnology?
d. Explain the term quantum dot.
e. Highlight the properties of carbon nanotubes.
f. Give some present and future applications of non materials in biomedical science?
g. What do you meant by the term photolithography?
h. Discuss the mechanical and electrical properties of nanomaterial?
i. What do you understand by the term biosensors?
j. Give the role of nanochemicals in tumor targeting.

SECTION – B

2: Attempt any 3 parts. All parts carry equal marks. **[3x10=30]**

1. Describe the mechanical, electrical and optical properties of nanomaterials.
2. Describe the term quantum dot? How can it be used to obtain nanoparticle assemblies with designed properties?
3. The Nanobiotechnology is playing an important role in the field of drug delivery? Justify your answer with the help of suitable examples.
4. Discuss in detail about Atomic Force Microscopy instrumentation, parameters measured and imaging modes?
5. Viruses can be used in the field of nanobiotechnology. Justify this statement by framing your answer giving the role of viruses as nanoparticles.

SECTION – C

Note: Attempt all parts. All parts carry equal marks.

3. Attempt any one part **(10 marks)**

a) What is the contribution of nanobiotechnology inimmobilization assay? In what way it has helped in itsimprovement? Support your answer with the help of suitableexample.
b) What are the biopolymers, which can be used in cardiovascular and orthopedic area? Discuss with examples.

4. Attempt any one part **(10 marks)**

a) Write a note on Macromolecular Assemblies.
b) Write a note on the role of nanoparticles in tumor targeting.

5. Attempt any one part **(10 marks)**

a) What is the role of nanotechnology in advancing the ophthalmologic practices? Support your answer with the help of suitable example.
b) What is green synthesis? Describe the green synthesis of metal nanoparticles.

6. Attempt any one part. **(10 marks)**

a) What are biosensors? How do they function? How does nanotechnology support designing the biosensors?
b) Explain how microbes help in the synthesis of Nanoparticles.

7. Attempt any one part. **(10 marks)**

a) Describe the possible applications of nanotechnology in developing drug delivery tools.
b) Explain Micro fabrication Technique in detail.