PAPER ID 310301

Roll No:

B. TECH
(SEM V) THEORY EXAMINATION 2020-21
NANO BIOTECHNOLOGY

Time: 3 Hours

Total Marks: 100

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief.

2 x 10 = 20

Qno.	Question	Marks	CO
a.	What do you understand by AFM?	2	
b.	What are nano biopolymers?	2	
c.	What are Biosensors? Give an example.	2	
d.	Discuss applications of nano particulate delivery systems.	2	
e.	Define Nanorobots.	2	
f.	Enlist the four types of artificial nanomaterials.	2	
g.	What is Nano drug delivery system?	2	
h.	Name the nanoparticles used in drug delivery.	2	
i.	Name the scientist who known as father of nanomedicine?	2	
j.	What are the disadvantages of using nanoparticles?	2	

SECTION B

2. Attempt any *three* of the following:

Qno	Question	Marks	CO
a.	How synthesis of silver nanoparticles could be done with Nanobiotechnology? Discuss the application of silver nano particles as a drug delivery tool.	10	
b.	What do you understand by scanning probe microscopes? Discuss the working of AFM with its limitations.	10	
c.	Discuss the applications of nano biotechnology in biomedical field and biological research.	10	
d.	What are the key goals for nanomedicine? Discuss the impact of nanotechnology on drug delivery systems.	10	
e.	What are Biochips? Discuss the role of nanobiosensors in miniaturing nano hybrids.	10	

SECTION C

3. Attempt any *one* part of the following:

4. **Attempt any *one* part of the following:**

Qno.	Question	Marks	CO
a.	What do you understand by Targeted drug delivery? Discuss various ideal drug delivery vehicles used for targeted drug delivery.	10	
b.	What are biopolymers? Discuss their role in ophthalmologic and orthopedic industry.	10	

5. **Attempt any *one* part of the following:**

Qno.	Question	Marks	CO
a.	Discuss the biomedical applications of nanotechnology.	10	
b.	What are the unique properties of nano scale materials? Discuss about carbon nano tubes in brief.	10	

6. **Attempt any *one* part of the following:**

Qno.	Question	Marks	CO
a.	What are aptamers? Discuss their role in target validation and drug discovery.	10	
b.	Write a comment on "nanotechnology can provide new formulations of drugs with less side effects and routes for drug delivery".	10	

7. **Attempt any *one* part of the following:**

Qno.	Question	Marks	CO
a.	Discuss Scanning tunneling microscopy (STM) in detail.	10	
b.	Write short notes on: 1. Bioavailability 2. Nanoimaging agents	10	