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**B.Sc. (Bio-technology) Examination,
June-2023**

NANOBIOTECHNOLOGY

(B-304)

(B.Sc. Biotech.)

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt any five questions. All questions carry equal marks.

1. Write in details scope, vision and applications of nanotechnology. 15
2. Explain in details contribution of following scientist in the field of nanotechnology :
 - (a) Richard Feynman 5
 - (b) Norio Taniguchi 5
 - (c) CNR Rao 5

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[P.T.O.]

(2)

3. Give the difference between SEM, TEM and AFM in details. 15
4. (a) Give the difference between bottom up and top down approaches. 7
(b) Explain in details different bottom up approaches. 8
5. Write short notes on :
 - (a) Sol gel and physical vapour method 7.5
 - (b) Carbon dots and carbon nanotubes 7.5
6. Write short notes on :
 - (a) Viruses as nanoparticles 5
 - (b) Nanofabrication 5
 - (c) Nanorobots 5
7. Explain in details contribution of nanotechnology in the field of biotechnology and environmental science. 15

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(3)

8. What is biomedical polymers ? Explain their role in pharmaceutical, cardiovascular and ophthalmologic areas. 15
9. What is nanosensors ? Explain the principles, procedures and applications of microelectronic devices sensors and macro mechanical devices sensors. 15
10. Write short notes on :
 - (a) Zinc oxide nanoparticles 5
 - (b) Gold nanoparticles 5
 - (c) Immuno nanotechnology 5

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