

V (Printed Pages 4)
(21225) Roll No.
M.Sc. (Biotech) - III Sem.

NP-3339

M.Sc. (Biotechnology)

Examination, Dec.-2025

Concepts of Nano-Biotechnology

[H-302 (M.Sc. Biotech.)]

Time : Three Hours] [Maximum Marks : 50

Note : Attempt questions from **all** sections
as per instructions.

Section - A

(Very Short Answer Questions)

Note : Attempt all the **five** questions. Each
question carries 2 marks. Very short
answer in required not exceeding 75
words.

1. What are nanosensors? 2

P.T.O.

2. What are nanowires? 2
3. Comment upon gold nanoparticles. 2
4. What is drug delivery? 2
5. Comment upon nano-materials in bio
pharmaceuticals. 2

Section-B

(Short Answer Questions)

Note : Attempt any **two** questions from
this section. Each question carries 5
marks. Short answer is required not
exceeding 200 words.

6. Comment upon advances in nano
biotechnology. 5
7. Write in brief upon Fabrication and
preparation of ultra-thin carbon coated
TEM Grids. 5
8. Comment upon DNA based computational
studies. 5

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Section-C
(Detailed Answer Questions)

Note : Attempt any **three** questions from this section. Each question carries 10 marks. Answer is required in detail.

9. What are quantum dots? Discuss their general properties and applications in biological research. 10
10. Explain the physico-chemical characteristics of nanomaterials. Discuss the applications of structural DNA nanotechnology. 10
11. What is nano-biotechnology? Discuss its scope and applications in biological sciences. 10
12. What are gold nano particle conjugates? How gold nano particles are used in intracellular imaging. 10

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P.T.O.

13. Write note on the following: 3+3+4
- (a) How nanobiotechnology is safe for drug delivery?
- (b) Comment upon DNA nano mechanical devices.
- (c) Applications of nano particles in chemical science.

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