

A (Printed Pages 4)
(20222) Roll No
M.Sc. (Biotech.)-III Sem.

NP-3339 (CV-III)
M.Sc. (Biotechnology)
Examination, Dec.-2021

CONCEPTS TO NANO-BIOTECHNOLOGY

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

Time : 1½ Hours] [Maximum Marks : 50

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

Section-A

(Very Short Answer Questions)

Note : Attempt any **two** questions. Each
question carries 5 marks. Very short
answer is required not exceeding 75
words. $5 \times 2 = 10$

1. TEM Grid
2. Assembly of DNA molecules

P.T.O.

3. Write full form of SEM, STM and AFM.
4. Write about molecular motors and their
use in nanoscience.
5. How quantum dots are useful in biology?

Section-B

(Short Answer Questions)

Note : Attempt any **one** question from this
section. Each question carries 10
marks. Short answer is required not
exceeding 200 words. $1 \times 10 = 10$

6. Discuss in brief the different applications
of electrical manipulations of DNA on
metal surface.
7. Explain the preparation and
characterization of Q-cds/pUCLen⁴
samples.

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8. Explain the methods of biosynthesis of nano-particles and their characterization.

Section-C

(Detailed Answer Questions)

Note : Attempt any **two** questions from this section. Each question carries 15 marks. Answer is required in detail.

$$2 \times 15 = 30$$

9. What do you mean by nano-particles? Discuss the application of nano-particles in cancer therapy.
10. Describe the various types of nano-elements for the delivery of material into viable cells.
11. What is nano-biotechnology? Explain its scope and applications compatible with environment.

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P.T.O.

12. Write detailed note on the following:

- (a) Explain the different safety tests carried out in nano-technology.
- (b) Explain different societal and ethical issues from nano products application.

13. Explain the methods of controlled drug delivery using nano-particle.

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