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(21222)

Roll No. ....

M.Sc. (Bio-Tech.) III Sem.

## **NP-3338**

**M.Sc. (Bio-Tech.) Examination, Dec.-2022**

**Microbial, Industrial and Environmental**

**Biotechnology**

**(H - 301)**

**M.Sc. (Bio-Tech.)**

*Time : Three Hours ]*

*[Maximum Marks : 50*

**Note :** Attempt **all** questions in Sections-A,  
two questions from Section-B and  
three questions from Section-C.

2×5=10

### **Section - A**

1. What are sulfur bacteria.
2. Define Auto claving
3. What is C.O.D.
4. Define Ergo alkaloids
5. What are steroids.

**P.T.O.**

### Section-B

**Note :** Attempt any **two** questions.  $2 \times 5 = 10$

1. Explain Bioremediation of oil spills.
2. Discuss the industrial importance of microbes in food.
3. Explain various chemical characterization methods of microbes in brief.
4. Explain various industrial applications of enzyme protease.

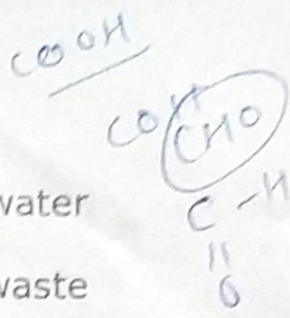
### Section-C

**Note :** Attempt any **three** questions.

$3 \times 10 = 30$

1. What is culture? Describe the various techniques which are used in isolation of microbes.
2. Define single cell protein (SCP). Describe various production process of SCP. Write down their advantages.





3. What do you mean by waste water treatment? Describe advanced waste water treatment methods in brief.
4. Define bio degradation. Describe different factors that can limit bio degradation of organic contaminants in environment.
5. What is ethanel. Explain the ethanol production process by fermentation and their economic significance.
6. What is anylase. Write down the production process of bacterial  $\alpha$ -anylase with their industrial important applications.

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Roll No. 210.0622.7003

M.Sc. (Biotech) - III Sem.

**NP-3339**

**M.Sc. (Biotechnology)**

**Examination, Dec.-2022**

**Concepts to 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 is nano-computing.

2

**P.T.O.**



2. Briefly describe the role of temperature in self-assembly of biomolecules. 2
3. What are gold-nano particles. 2
4. Write at least five biological entities which are nano sized. 2
5. Differentiate between pharmacokinetic and pharmacodynamics. 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. What do you understand by quantum confinement. Differentiate between quantum wells, quantum dots and

- quantum wires. 5
7. Discuss in brief the scope of nano-science in modern biology. 5
8. Briefly explain the preparation of sample for TEM study. 5

### **Section-C**

#### **(Detailed Answer Questions)**

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

9. Discuss the use of nano materials in the treatment of central nervous system diseases. 10
10. Write note on the following: 3+3+4
- (a) Nano-medicines
- (b) Carbon nano technology



- (c) Discovery and structure of DNA
11. Explain the methods of controlled drug delivery using nano-particles. 10
12. Write detailed note on the following:  
5 each
- (a) DNA nano mechanical devices
- (b) Structural DNA nano technology and their application.
13. Describe the various types of nano-elements for delivery of material into viable cells. 10

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Roll No. 210062227003

M.Sc. (Biotech.)-III Sem.

**NP-3340**

**M.Sc.(Biotechnology)**

**Examination, Dec.-2022**

**Animal Biotechnology and Immunology**

**(H-303)**

**[M.Sc. (Bio-Tech.)]**

*Time : Three Hours ]*

*[Maximum Marks : 50*

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

**Section-A**

**(Very Short Answer Questions)**

**Note :** Attempt **all** questions. Each question  
carries **2** marks. Very short answer is  
required.  $2 \times 5 = 10$

1. ELISA

**P.T.O.**



2. T cell cloning
3. Spleen
4. Suspension culture
5. AIDS

### Section-B

#### (Short Answer Questions)

**Note :** Attempt any **two** questions. Each question carries **5** marks. Short answer are required.  $5 \times 2 = 10$

6. Write a note on antigen-antibody interactions.
7. What are lymphoid organs and their types?
8. Write short notes on :
  - (a) Artificial skin
  - (b) Transgenics and their future prospective

## Section-C

### (Detailed Answer Questions)

**Note :** Attempt any **three** question. Each question carries **10** marks. Long answer are required.  $10 \times 3 = 30$

9. Write a detailed account of monoclonal antibody production. How the purification and characterization of monoclonal antibodies without Hybridoma is done?
10. What are infectious diseases? What are the various types of infectious diseases caused by different pathogens? What are the types of diseases caused by them?
11. What is cell culture? What are the different kinds of cell culture media? How the large scale culture of cell lines is done?



12. Write short notes on :

(a) MHC

(b) Types of vaccine and strategies for the development of vaccines

13. What is In-vitro fertilization and embryo transfer technology? How the embryo transfer takes place in cattle?

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Roll No. ..21.0.06.2.2.2.7.003

M.Sc. (Biotech.)-III Sem.

**NP-3341**

**M.Sc. (Biotechnology) Examination,**

**Dec.-2022**

**GENOMICS AND PROTEOMICS**

**[ (H-304) M.Sc. (Biotech.) ]**

*Time : Three Hours ]*

*[Maximum Marks : 50*

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

**Section - A**

**(Very Short Answer Type Questions)**

**Note :** Answer all the **five** questions. Each  
question carries 02 marks. Very short  
answer is required.  $5 \times 2 = 10$

1. Write a note on introns early and introns  
late. 02

**P.T.O.**



2. What is the difference between genetic map and physical map? 02
3. What do you understand by Synteny? 02
4. Write a note on DNA microarrays. 02
5. Write a note on pharmacogenomics. 02

### **Section-B**

#### **(Short Answer Type Questions)**

**Note :** Attempt any **two** questions from this section. Each question carries 05 marks. Short answer is required.

2×5=10

6. Explain DNA based phylogenetic trees. 5
7. Write a detail note on antibody microarray. 5
8. Describe approaches of proteomics study. 5

### Section-C

#### (Detailed Answer Type Questions)

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

3×10=30

9. Give a detail account on origin and types of Cancer. 10

10. Write detailed note on the following:

5 each

(a) DNA-Protein interaction

(b) Plant genomes

11. Describe the protein separation technique use in proteome analysis. 10



12. Give a detail account of drug toxicology.

10

13. Write in detail on:

5 each

(a) TILLING

(b) Insertion mutagenesis

**NP-3341/4**