

Uttar Pradesh Rajarshi Tandon Open University

Science Postgraduate Programme (Biochemistry) Assignment Session 2023-24

Course Code: PGBCH-109	Course Title: Enzymology and Enzyme Technology	Maximum Marks : 30
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Section A

Long Answer Questions

Maximum marks: 18

Note: Attempt all questions. Each question should be answered in 800 to 1000 words.

- Q.1.** What are the enzymes? Discuss about enzymatic reaction mechanisms.
- Q.2.** Discuss the nomenclature and classification of enzymes.
- Q.3.** Write short notes on the following.
- artificial enzymes
 - Enzyme homogeneity
 - Enzyme immobilization

Section B

(Short Answer Questions)

Maximum marks: 12

Note: Attempt all questions. Each question should be answered in 200 to 300 words.

- Q.1.** Explain enzyme inhibition.
- Q.2.** Describe enzyme velocity.
- Q.3.** General properties of enzymes
- Q.4.** Catalytic antibodies

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Science Postgraduate Programme (Biochemistry) Assignment Session 2023-24

Course Code: PGBCH-110	Course Title: Immunology	Maximum Marks : 30
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Section A

Long Answer Questions

Maximum marks: 18

Note: Attempt all questions. Each question should be answered in 800 to 1000 words.

- Q.1.** Describe the architecture of immune system.
- Q.2.** Describe the types of immunity- innate, acquired, adaptive and cellular immunity.
- Q.3.** Write the short notes on the following.
- a) Natural killer cells (NK cells)
 - b) Vaccines
 - c) Adaptive and cellular immunity

Section B

Short Answer Questions Maximum marks: 12

Note: Attempt all questions. Each question should be answered in 200 to 300 words.

- Q.1.** Explain the acquired immunodeficiency.
- Q.2.** Explain the structure and functions of antibody.
- Q.3.** Write the notes maturation and selection of T cells
- Q.4.** Explain the Antigens processing and presentation

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Science Postgraduate Programme (Biochemistry) Assignment Session 2023-24

Course Code: PGBCH-111	Course Title: Basic biotechnology	Maximum Marks : 30
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Section A

Long Answer Questions

Maximum marks: 18

Note: Attempt all questions. Each question should be answered in 800 to 1000 words.

- Q.1.** Write brief account of microbes in industry and agriculture. How microbes useful in food spoilage and preservation.
- Q.2.** Describe the concept of recombinant DNA technology (RDT).
- Q.3.** Write short notes on the following.
- Recombinant gene construction
 - Polymerase chain reaction (PCR)
 - Gene Cloning

Section B

Short Answer Questions

Maximum marks: 12

Note: Attempt all questions. Each question should be answered in 200 to 300 words.

- Q.1.** Write a note on gene transfer method in plants.
- Q.2.** Explain the role of biotechnology to improve yield and nutritional values of crops.
- Q.3.** Explain the role of biotechnology in pollutants remediation (air, water and soil).
- Q.4.** Explain the transgenic animals.

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Science Postgraduate Programme (Biochemistry) Assignment Session 2023-24

Course Code: PGBCH-113	Course Title: Industrial biotechnology	Maximum Marks : 30
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Section A

Long Answer Questions

Maximum marks: 18

Note: Attempt all questions. Each question should be answered in 800 to 1000 words.

Q.1. Describe different enzymes with their general properties.

Q.2. Write short notes on the following.

- a) Fermentation.
- b) Centrifugation
- c) Chromatography

Q.3. What do you mean by fermentation? Describe different types of fermentation process.

Section B

Short Answer Questions

Maximum marks: 12

Note: Attempt all questions. Each question should be answered in 200 to 300 words.

Q.1. What are the roles of micro elements in industrial process?

Q.2. Write short notes on the following.

- a) Sterilization.
- b) Pasteurization

Q.3. Write a short note on enzymes used in baking and pharmaceutical industry.

Q.4. Write a short note on bioreactor.

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Science Postgraduate Programme (Biochemistry) Assignment Session 2023-24

Course Code: PGBCH-115	Course Title: Biosafety and IPR	Maximum Marks : 30
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Section 'A'

Long answer questions Maximum: marks: 18

Note:All questions are compulsory. Each question should be answered in 800 to 1000 Words.

Q.1. Describe genetically modified foods (GMF).

Q.2. What do you mean by patent, intellectual property right (IPR) and international agreement?

Q.3. Write short notes on the following

- a) Eco-labeling
- b) Ecomark
- c) GMO

Section B

Short Answer Questions Maximum marks: 12

Note: Attempt all questions. Each question should be answered in 200 to 300 words.

Q.1. Explain Cartagena protocol on biosafety.

Q.2. Write short notes on the following.

- a) Antibiotic resistance.
- b) Gene flow

Q.3. Explain benefits of transgenic to human health, society and the environment.

Q.4. Explain convention on biological diversity.

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Science Postgraduate Programme (Biochemistry) Assignment Session 2023-24

Course Code: PGBCH-116	Course Title: Bioinformatics	Maximum Marks : 30
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Section 'A'

Long answer questions

Maximum marks: 18

Note:All questions are compulsory. Each question should be answered in 800 to 1000 Words.

- Q.1.** Discuss the importance of bioinformatics studies in modern biology.
- Q.2.** Describe the aim of bioinformatics and its scopes.
- Q.3.** Write short notes on the following.
- (a) SCOP
 - (b) BLAST
 - (c) NCBI

Section B

Short Answer Questions

Maximum marks: 12

Note:Attempt all questions. Each question should be answered in 200 to 300 words.

- Q.1.** Explain the protein 3D structure and its data base.
- Q.2.** Explain the classification scheme of biological databases.
- Q.3.** Discuss the recourses of EMBL.
- Q.4.** Explain the protein data bank.

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Science Postgraduate Programme (Biochemistry) Assignment Session 2023-24

Course Code: PGBCH-117	Course Title: Microbiology and Toxicology	Maximum Marks : 30
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Section A

Long Answer Questions

Maximum marks: 18

Note: Attempt all questions. Each question should be answered in 800 to 1000 words.

- Q.1.** What do you mean sterilization? Write the theory and practice of sterilization.
- Q.2.** Write the general characteristics of primary domains and of taxonomic groups belonging to Bacteria.
- Q.3.** What are antimicrobial agents? Discuss about the Penicillins and Cephalosporins

Section B

(Short Answer Questions)

Note: Attempt all questions. Each question should be answered in 200 to 300 words.

Maximum marks: 12

- Q.1.** Write the about microbial growth.
- Q.2.** Write short notes on
 - a) Conjugation,
 - b) Transduction,
 - c) Recombination
- Q.3.** Explain the significance of major histo-compatibility complex (MHC)
- Q.4.** Discuss the Environmental Xenobiotic,