

## Faculty of Science

## B.Sc (Biotechnology) III-Year, CBCS –VI Semester Regular

Examinations –June/July, 2022

## PAPER: Environmental Biotechnology

Time: 3 Hours

Max Marks: 80

## Section-A

I. Answer any *eight* of the following questions (8x4=32 Marks)

1. Soil pollution
2. Global warming
3. Greenhouse gases
4. Renewable energy sources
5. Biodiesel
6. Fossil fuels
7. Concept of biofertilizers
8. Uses of biopesticides
9. Fungal biofertilizers
10. Xenobiotics
11. Bioaccumulation
12. Composting of organic waste

## Section-B

II. Answer the following questions (4x12=48 Marks)

13. (a) What is air pollution? Explain about the agents that cause air pollution.  
(OR)  
(b) Write about the methods used to detect environment pollution.
14. (a) Explain about various types of biomass used as a source of bioenergy.  
(OR)  
(b) Write about the production of biohydrogen and biomethane.
15. (a) What are biopesticides? Write about different types of biopesticides.  
(OR)  
(b) What is eutrophication? Discuss about the impact of chemical fertilizers on environment.
16. (a) Explain the concept of phytoremediation. Add a note on its applications.  
(OR)  
(b) Describe in detail about various types of bioremediation.

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**Faculty of Science**  
**B.Sc (Biotechnology) III-Year, CBCS –V Semester**  
**Backlog Examinations –June, 2023**  
**Generic Elective**  
**PAPER: Basics in Biotechnology**

Time: 3 Hours

Max Marks: 80

**Section-A**

I. Answer any \_\_\_\_\_ of the following questions \_\_\_\_\_ (8×4=32 Marks)

1. MS medium in tissue culture
2. Micropropagation
3. Biofertilizers
4. Screening method for antibacterial activity
5. Preservation methods for microbial cultures
6. Single Cell Proteins
7. Cell culture
8. In-vitro fertilization
9. Gel electrophoresis
10. NCBI
11. Biological databases
12. PROSITE

**Section-B**

II. Answer the following questions \_\_\_\_\_ (4×12=48 Marks)

13. (a) Give a brief account on plant tissue culture and explain their different culture types.

(OR)

(b) What are the applications of transgenic plants? Explain the direct and indirect methods of gene transfer.

14. (a) Explain the different methods used for isolation and selection of industrially important microorganisms with examples.

(OR)

(b) Give brief explanation on strain improvement strategies and their applications.

15. (a) Describe the animal breeding technology. What is the difference between selective and cross breeding?

(OR)

(b) What are the mouse models used for study of Cancer disease and explain the procedure.

16. (a) Describe the scope of computer applications in biotechnology and write a brief note on biotechnological tools and resources.

(OR)

(b) Explain the Protein Sequence databases and their applications with examples.

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## Faculty of Science

## B.Sc (Biotechnology) III-Year, CBCS –VI Semester

## Backlog Examinations –Jan, 2023

## PAPER: Animal Biotechnology

Time: 3 Hours

Max Marks: 80

## Section-A

I. Answer any *eight* of the following questions

(8x4=32 Marks)

1. Cell culture media.
2. Electroporation.
3. Stem cells.
4. Superovulation.
5. Artificial insemination
6. Dolly.
7. EBV.
8. RAPD.
9. Marker assisted selection.
10. Transgenic mouse.
11. Knock-out mouse.
12. Disease models.

## Section-B

II. Answer the following questions

(4x12=48 Marks)

13. (a) Write an essay on the methods of isolation and separation of various Cell types and establishment of cell lines.  
(OR)  
(b) Describe the various applications of animal cell cultures.
14. (a) What are the principles of animal breeding? Add an account on their applications and limitations.  
(OR)  
(b) Describe the in-vitro fertilization technique and mention its applicaions.
15. (a) What are SNPs. Explain their applications in genotyping?  
(OR)  
(b) Describe different methods of identification and isolation of desired gene of interest.
16. (a) Explain how Mouse models assist in understanding the cancer biology.  
(OR)  
(b) Write an essay on the potential applications of genetically modified animals in understanding disease biology and drug development.

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**Faculty of Science**  
**B.Sc (Biotechnology) III-Year, CBCS –VI Semester Backlog**  
**Examinations –Jan, 2023**  
**PAPER: Environmental Biotechnology**

Time: 3 Hours

Max Marks: 80

**Section-A**

- I. Answer any *eight* of the following questions (8x4=32 Marks)
1. Organic pollutants.
  2. BOD.
  3. Industrial effluents.
  4. Renewable energy sources.
  5. Bio energy.
  6. Microbial biomass.
  7. Eutrophication.
  8. Bacterial biofertilizers.
  9. Biopesticides.
  10. Biosorption.
  11. Xenobiotic compounds.
  12. Sewage Sludge

**Section-B**

- II. Answer the following questions (4x12=48 Marks)
13. (a) Explain different types of air, soil pollution and their impact on Environment.
- (OR)
- (b) Describe how greenhouse gases contribute for global warming and climate change. Add notes on their preventive measures to save earth planet.
14. (a) Explain the impact of fossil fuels as energy sources on environment.
- (OR)
- (b) Explain the production of bio-fuels: bio-ethanol & bio-diesel.
15. (a) Write a essay on chemical fertilizers and their impact on environment.
- (OR)
- (b) Explain different types of bio-fertilizers. Add notes on their eco-friendly benefits for increasing plant production.
16. (a) Define the concept of bio-remediation. Explain its types and merits.
- (OR)
- (b) Explain the concept of phyto-remediation & their applications.

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**B.Sc (Biotechnology) III-Year, CBCS –VI Semester****Regular Examinations –June, 2023****PAPER: Environmental Biotechnology**

Time: 3 Hours

Max Marks: 80

**Section-A**I. Answer any *eight* of the following questions

(8x4=32 Marks)

1. Agricultural waste
2. BOD
3. Inorganic pollution
4. Microbial biomass
5. Biohydrogen
6. Biodiesel
7. Eutrophication
8. Biopesticides
9. Uses of biofertilizers
10. Phytoremediation
11. In-situ bioremediation
12. Industrial effluent treatment

**Section-B**

II. Answer the following questions

(4x12=48 Marks)

13. (a) Discuss about the agents that cause water pollution.  
(OR)  
(b) What are greenhouse gases. Discuss their impact on climate.
14. (a) Write in detail about renewable energy sources. Mention their advantages.  
(OR)  
(b) What are biofuels. Describe the technology of bioethanol production.
15. (a) What are biofertilizers. Write about bacteria that are used as biofertilizers.  
(OR)  
(b) Discuss about the impact of pesticides on environment.
16. (a) Write in detail about bioremediation of pesticides and xenobiotics.  
(OR)  
(b) Explain about the methods used to treat municipal sewage.

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## Faculty of Science

## B.Sc (Biotechnology) III-Year, CBCS-VI Semester

## Regular Examinations –June, 2023

## PAPER: IPR, Bio safety and Entrepreneurship (Optional)

Time: 3 Hours

Max Marks: 80

## Section-A

I. Answer any *eight* of the following questions

(8x4=32 Marks)

1. Geographical Indicators
2. Copy rights
3. Plant breeding rights
4. Patenting microbes
5. Elements of a patent
6. Patenting process design
7. Safety issues in Laboratory design
8. Bio safety level-4
9. Biological wastes hazard
10. Structure of entrepreneurship
11. Entrepreneurial leadership
12. Project management

## Section-B

II. Answer the following questions

(4x12=48 Marks)

13. (a) Define IPR. Explain its significance and the need for its protection.  
(OR)  
(b) Give a detailed note on plant varieties protection rights.
14. (a) Write on different kinds of patents with suitable examples.  
(OR)  
(b) Give a brief note on patenting markers and variants
15. (a) Write a detailed note on Bio-safety levels  
(OR)  
(b) Describe the process of handling hazardous compounds with examples.
16. (a) What are start ups? Explain types of start ups with suitable examples.  
(OR)  
(b) Write a detailed note on promoting bio-entrepreneurship.

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