

014
Master of Science (M.Sc.) (Microbiology) Semester—II (C.B.C.S.) Examination
MICROBIAL METHODS FOR ENVIRONMENT MANAGEMENT (MEM)

Paper—1

Time : Three Hours]

[Maximum Marks : 80

N.B. :— ALL questions are compulsory and carry equal marks.

1. Define Eutrophic lake. Explain the process of Eutrophication and write a note on its control measures. 16
- OR
- Explain Biomagnification of chlorinated hydrocarbons and pesticides. 16
2. Discuss various techniques of Biobleaching and add a note on its applications. 16
- OR
- (a) Describe Biotransformation of Mercury. 8
- (b) Explain in brief biodegradation of plastics. 8
3. Define activated sludge. Explain Activated Sludge treatment. 16
- OR
- Explain principle and working of Rotary Biological contractors. 16
4. Discuss the concept of Acid Rain and its impact on Environment. 16
- OR
- Explain the phenomenon of Global Warming and Climate Change. 16
5. (a) Discuss in brief biodegradation of pharmaceuticals. 4
- (b) Explain biotransformation of metals. 4
- (c) Write a note on stabilization ponds. 4
- (d) What is Green house effect ? 4

**Master of Science (M.Sc.) Semester—II (CBCS) (Microbiology) Examination
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Paper—1

Time : Three Hours]

[Maximum Marks : 80

- N.B. :—** (1) All questions are compulsory and carry equal marks.
(2) Draw well labelled diagram wherever necessary.

1. What is biodeterioration ? Explain a process of biodeterioration of pharmaceutical products. 16

OR

 What is biomagnification ? Describe a process of biomagnification of chlorinated hydrocarbons. 16
2. Give a detailed account of biotransformation of hexachlorobenzene. 16

OR

 Discuss various techniques of bioleaching of ores. 16
3. Write notes on :
 (a) Trickling filter and rotary biological contractors 8
 (b) Activated sludge process. 8

OR

 Explain the concept of phytoremediation and give its applications. 16
4. Discuss on global warming and its impact on climate change. 16

OR

 Discuss problems associated with acid mine drainage and their management. 16
5. Write short notes on :
 (a) Control of eutrophication 4
 (b) Biodegradation of plastics 4
 (c) Fluidized Bed reactors 4
 (d) Green house effect. 4

NRT/KS/19/2893

**Master of Science (M.Sc.) Semester—II (C.B.C.S.) (Microbiology) Examination
MICROBIAL METHODS FOR ENVIRONMENT MANAGEMENT (MEM)**

Paper—1

Time : Three Hours]

[Maximum Marks : 80

Note :—All questions are compulsory and carry equal marks.

1. Discuss the role of microbes in eutrophication process of a stagnant lake. 16

OR

- Discuss the biomagnification of pesticides. 16
2. Give a comprehensive account of biodegradation of plastics. 16

OR

- Discuss the bio transformation of metals and metalloids. 16
3. Describe in detail the trickling filter techniques for water purification. 16

OR

- Discuss the structure and applications of rotatory biological contractors. 16
4. Discuss the problems and management of acid rain. 16

OR

- Discuss the predicted problems associated with climate change and probable remediations required for solving this problem. 16
5. Write notes on :—

 - (a) Biodeterioration of pharmaceutical products. 4
 - (b) Applications of bioleaching. 4
 - (c) Aerated lagoons. 4
 - (d) UV-B. 4

**Master of Science (M.Sc.) Semester-II Choice Based Credit System (CBCS) (Microbiology)
Examination**

MICROBIAL METHODS FOR ENVIRONMENT MANAGEMENT (MMEM)

Paper-1

Time : Three Hours]

[Maximum Marks : 80

N.B. :— All questions are compulsory and carry equal marks.

1. Discuss the factors responsible for eutrophication of water bodies. 16

OR

Describe the biodeterioration of woods. 16

2. Describe in detail the biotransformation of pesticides. 16

OR

Give a comprehensive account of leaching techniques. 16

3. Write a detail account of trickling filter, their types and mechanism of action. 16

OR

Write notes on :

(a) Fluidized bed reactors 8

(b) Phytoremediation. 8

4. Discuss the impact and biotechnological approaches for management of acid rain. 16

OR

Give a detailed account of Global Warming. 16

5. Write notes on :

(a) Organic pollution and eutrophication

(b) Mercury biotransformation

(c) Stabilization ponds

(d) Greenhouse effect. 4×4

Master of Science (M.Sc.) Semester-I Choice Based Credit System (CBCS) (Microbiology)
Examination

MICROBIAL METHODS FOR ENVIRONMENT MANAGEMENT (MEMM)

Paper-1

Time : Three Hours]

[Maximum Marks : 80

N.B. :— All questions are compulsory and carry equal marks.

1. Discuss the factors responsible for eutrophication of water bodies. 16
OR
Describe the biodeterioration of woods. 16
2. Describe in detail the biotransformation of pesticides. 16
OR
Give a comprehensive account of leaching techniques. 16
3. Write a detail account of trickling filter, their types and mechanism of action. 16
OR
Write notes on :
(a) Fluidized bed reactors 8
(b) Phytoremediation. 8
4. Discuss the impact and biotechnological approaches for management of acid rain. 16
OR
Give a detailed account of Global Warming. 16
5. Write notes on :
(a) Organic pollution and eutrophication
(b) Mercury biotransformation
(c) Stabilization ponds
(d) Greenhouse effect. 4x4

M.Sc. Second Semester (Microbiology) (C.B.C.S. / NEP)
Compulsory Paper-V (DSC-3) - MM12T05
Environmental Microbial Technology

P. Pages : 1
Time : Three Hours



PRS/KS/24/10158
Max. Marks : 80

- Notes : 1. All questions are compulsory & carry equal marks.
2. Draw well labelled diagram wherever necessary.

1. What is biodeterioration? Explain the process of biodeterioration of pharmaceutical products? 16
- OR**
- What is biomagnification? describe the process of biomagnification of pesticides. 16
2. What is bioleaching? Describe various techniques of bioleaching. 16
- OR**
- Give an account on:
- a) Biotransformation of mercury. 8
- b) Biodegradation of hydrocarbons. 8
3. Write a note on following-
- a) Phytoremediation & its applications. 8
- b) Management of mine spoil dumps. 8
- OR**
- Write a note on following-
- c) Concept of reclamation & revegetation. 8
- d) High rate transpiration systems. 8
4. Discuss in detail global warming & its impact on climate change. 16
- OR**
- Explain the terms:
- a) Acid mine drainage. 8
- b) Green House Effect. 8
5. Give a brief account on:
- a) Causes of eutrophication. 4
- b) Biotransformation of DDT. 4
- c) Restoration of wasteland ecosystems. 4
- d) Acid rain 4
