

Roll No. :

Total No. of Questions : 11]

[Total No. of Printed Pages : 3

BPF-2240

M.Sc. (Final) Examination, 2022

BIOTECHNOLOGY

Paper - VI

(Environmental Biotechnology)

Time : 3 Hours]

[Maximum Marks : 75

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section-B

(Marks : 5 × 5 = 25)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **5** marks.

Section-C

(Marks : 10 × 3 = 30)

Note :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **10** marks.

Section-A

1. Attempt all questions :

- (i) Define PAN.
- (ii) What are Resources ?

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- (iii) What is Acid Mine Drainage (AMD) ?
- (iv) Define Ozone Depletion.
- (v) What is Methemoglobinemia ?
- (vi) What is Activated Sludge ?
- (vii) Define Trickling Filters.
- (viii) What do you mean by Bioremediation ?
- (ix) What is Biofertilizers ?
- (x) What is GEMs ?

Section-B

2. Explain the mechanism of Ozone Depletion.

Or

Write note on water pollution.

3. Draw schematic diagram of waste water treatment.

Or

Describe the different methods of removal of microbial contaminants from water.

4. Define biogas. Briefly discuss the mechanism of biogas production.

Or

Write note on Vermicompost.

5. Define Biomining. How microbes are important in Biohydrometallurgy ?

Or

Write note on Phytoremediation. How a disturbed ecosystem can be restored by using phytoremediation ? Discuss.

6. Write note on nah operon.

Or

What is Microelectromechanical System (MEMS) ? Discuss in brief.

Section–C

7. What is Global Warming ? What are the major causes of global warming ? Discuss the effects and control of global warming.
8. Discuss in detail about various steps involved in waste water treatment with special reference to anaerobic treatment processes.
9. What do you mean by Solid Waste ? Classify it. Write a detailed note on effective management of solid waste.
10. What are Xenobiotics ? Explain the genetic regulations of Xenobiotic Biodegradation.
11. Define Polychlorinated biphenyls (PCBs). Explain the integrated treatment system with special reference to biodegradation of PCBs.