



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

SIXTH SEMESTER – APRIL 2023

18UPB6MC04 – ENVIRONMENTAL BIOTECHNOLOGY

Date: 08-05-2023

Dept. No.

Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

PART – A

(10 x 2 = 20 Marks)

Answer the following, each within 50 words.

1. Define biosphere.
2. What is thermal pollution?
3. Distinguish between bio-stimulation and bio-augmentation.
4. What is phycoremediation?
5. Comment on activated sludge?
6. What are oxidation ponds?
7. What are xenobiotics?
8. What are radionuclides?
9. Define bio-mining.
10. What are biodegradable plastics?

PART – B

(5 x 7 = 35 Marks)

Answer the following, each within 500 words; Draw diagrams and flowcharts wherever necessary

11. (a) Give a brief account on types of pollutants and their fate in the environment.
(OR)
(b) Explain about the major causes of climate change and their impacts on the environment.
12. (a) Explain the various bioremediation mechanisms.
(OR)
(b) Discuss about phytoremediation techniques.
13. (a) What is bio-sorption? Describe how this mechanism is used in the removal of heavy metal.
(OR)
(b) Give an account of removal of oil spill using microorganisms.
14. (a) Write an account on bioremediation of radioactive waste materials.
(OR)
(b) What is Biofiltration? Describe the structure and working of any two types of bio-filters.
15. (a) Write a note on bioleaching of copper.
(OR)
(b) Give a brief account on biogas production.

PART – C

(3 x 15 = 45 Marks)

Answer **ANY THREE** of the following, each within 1200 words. Draw diagrams and flowcharts wherever necessary

16. Write an essay on types and sources of air pollutants. Discuss in detail about their impacts on living organisms.
17. Write a detailed account on *ex-situ* bioremediation.
18. Describe the structure and working of trickling filters and rotating biological contactors.
19. Explain microbial degradation of any two xenobiotics you have studied.
20. Discuss about the various non-conventional energy resources.

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