



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc.DEGREE EXAMINATION – BIOTECHNOLOGY

SECOND SEMESTER – APRIL 2017

16PBT2MC02- FERMENTATION TECHNOLOGY

Date: 21-04-2017
01:00-04:00

Dept. No.

Max. : 100 Marks

PART – A

Answer ALL the Questions

I. Choose the correct answer

(5x1 = 5 Marks)

- Which of the following have Type I survivorship curve?
a) Animals
b) Birds
c) Humans
d) Rats
- River Ganga (Rejuvenation, Protection and Management) Authorities Order was passed in
a) 1986
b) 2000
c) 2006
d) 2016
- _____ involves the injection of air under pressure below the water table to increase groundwater oxygen.
a) Bioventing
b) Biosparging
c) Bioaugmentation
d) Biomining
- The process of extracting metals from ore bearing rocks is called
a) bioextraction
b) microbial extraction
c) biofiltration
d) bioleaching
- Metallothioneine is rich in
a) Cysteine
b) Serine
c) threonine
d) Asparagine

II. State whether the following are true or false, if false, give reason

(5x1=5 Marks)

- Eradication of *Proposis juliflora* is underway in Tamilnadu .
- Traffic sound account for about 50% of Delhi's noise pollution.
- Nitrification and denitrification are the important anaerobic reactions in sewage treatment.
- As the amount of organic matter present in water increases, the biological oxygen demand increases.
- Biodegradation of aliphatic hydrocarbons is slow due to their low solubility in aqueous medium.

III. Complete the following

(5x1=5 Marks)

- In _____, a previously occupied area is re-colonized after a disturbance kills the entire community.
- _____ are fine inhalable air pollutants with a diameter of 2.5 μ or less
- Non directed physic chemical interaction between heavy metals and microbial surface is called _____.
- Biomass and wastewater added to activated sludge process is called _____.
- The process of using fungi for bioremediation is termed _____.

IV. Answer the following within 50 words

(5x1 = 5 Marks)

- What is ecotone?
- Define helikite.
- What is break point chlorination?
- What is pyrolysis?
- Name the biogas plants approved by NPDB.

PART B

Answer the following each within 500 words.

(5x8 = 40 marks)

Draw diagrams and flowcharts wherever necessary

21. (a) Write short notes on: i. Niche ii. K selected species
OR
b) Explain the concept of metapopulation, dispersal and fragmented habitats.
22. (a) What were the causes of the Chernobyl disaster? Comment on its impact on health and environment.
OR
b) Endosulfan is called the spray of death. – Discuss.
23. (a) Write briefly on nitrification and denitrification in sewage treatment.
OR
b) Discuss the different methods of chlorination.
24. (a) What is composting? Explain the different stages of composting.
OR
b) Write a short note on the five technology options available for the treatment of radioactive Waste.
25. (a) Write the characteristics of tannery effluent and its treatment.
OR
b) How is petroleum hydrocarbons degraded aerobically? Add a note on the enzymes involved in the process.

PART – C

Answer any TWO of the following, each within 1500 words.

(2 x20 = 40 Marks)

Draw diagrams and flowcharts wherever necessary.

26. Explain how *in situ* and *exsitu* approaches help in conservation of bioresources. Add a note on Biodiversity Act, 2002.
27. What is remote sensing? Discuss with suitable examples the applications of remote sensing in environmental monitoring and assessment.
28. Explain the aerobic processes in waste water treatment.
29. Give a detailed account of phytoremediation and its mechanisms.

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