

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



M.Sc.DEGREE EXAMINATION –BIOTECHNOLOGY

SECOND SEMESTER – APRIL 2018

17PBT2MC03– ENVIRONMENTAL BIOTECHNOLOGY

Date: 21-04-2018

Dept. No.

Max. : 100 Marks

Time: 01:00-04:00

PART – A (20 marks)

Answer ALL the Questions

I. Choose the correct answer

(5 x 1 = 5 Marks)

- _____ are an example of r-strategists.
a) Rodents b) Elephants c) Whales d) Humans
- The _____ standard is used to measure the quality of air.
a) PM₁₀ b) LD₁₀ c) PC₁₀ d) LD₅₀
- In water treatment procedures, the purpose of coagulation and flocculation is to
a) Disinfect b) Remove suspended fine particles
c) Soften the water d) Remove taste and odor
- Thiobacillus ferrooxidans* oxidises
a) Sulphur b) Uranium c) Copper d) Nitrogen
- The first step in the biodegradation of many contaminants is
a) Denitrification b) Dehalogenation c) Decarboxylation d) Transpeptidation

II. State whether the following are true or false.

(5x1=5 Marks)

- Kelp is an example of a foundation species.
- According to a global survey conducted in March 2017, Delhi ranks fifth in noise pollution.
- The concentration of ammonia in water influences the amount of chlorine required for disinfection.
- Actinomycetes have a higher capacity to bind metal ions when compared with fungi and bacteria.
- Xanthomonas campestris* is widely used in the recovery of petroleum.

III. Complete the following

(5 x 1 = 5 Marks)

- _____ partitioning enables two similar species to co-exist in a habitat by using non-overlapping resources.
- An _____ is an aerial photograph or image geometrically corrected such that the scale is uniform.
- Addition of alum enhances sedimentation by acting as a _____.
- Liquid emanated out of the waste is called _____.
- Anaerobic degradation of hydrocarbons more often occurs through _____.

IV. Answer the following within 50 words

(5 x 1 = 5 Marks)

- Differentiate between fundamental and realised niche.
- What is a helikite?
- What is Breakpoint chlorination?
- Mention the two common vermicomposting worms.
- What are recalcitrant chemicals?

PART B

Answer the following each within 500 words.

(5 x 8 = 40 marks)

Draw diagrams wherever necessary.

21. (a) Writes notes on predation and commensalism as interactions in a community.
OR
(b) Comment on the main anthropogenic activities that have affected biodiversity.
22. (a) Write a short note on remote sensing and GIS in environmental monitoring.
OR
(b) *Endosulfan has been referred to as the spray of death.* – Justify.
23. (a) Write briefly on activated sludge process and discuss the problems associated with it.
OR
(b) Comment on the characteristics of tannery effluent and its treatment.
24. (a) Write briefly on the types of *exsitu* bioremediation.
OR
(b) Give an account of the different stages of composting.
25. (a) Write briefly on degradation of aromatic hydrocarbons.
OR
(b) Discuss briefly the types and fate of pesticides in the environment.

PART – C

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

(2 x 20 = 40 Marks)

Draw diagrams wherever necessary.

26. Give an account on the factors that influence community structure.
27. Write an essay on the causes, effects and management of the Chernobyl nuclear plant accident.
28. Explain in detail the factors associated with biogasification and its production.
29. Write in detail on the different types of phytoremediation.
