

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted during the academic year 2008-09)

SUBJECT CODE: BT/MC/EE54

B. Sc. DEGREE EXAMINATION, NOVEMBER 2010
BRANCH V (a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY
FIFTH SEMESTER

COURSE : MAJOR – CORE
PAPER : ECOLOGY AND ENVIRONMENTAL BIOTECHNOLOGY
TIME : 3 HOURS **MAX.MARKS:100**

SECTION -A **(18x1= 18)**

I Choose the correct answer **(6x1=6)**

1. In which of the following, the available free energy is very high?
a) Tertiary consumers b) secondary consumers
c) decomposers d) producers
2. The primary producers in oceanic environment are
a) grasses b) benthos c) phytoplanktons d) Zooplanktons
3. The removal of pollutants using algal biomass is called
a) phytoremediation b) phycoremediation
c) mycoremediation d) rhizofiltration
4. Pick the odd one out:
a) CFC b) DDT c) PCB d) PCP
5. Which one of the following microbe is used in bioleaching?
a) *Desulfovibrio* sp. b) *Thiobacillus* sp. c) *Bacillus* sp. d) *Vibrio* sp.
6. Name the organism which is used as an indicator for air pollution.
a) algae b) pines c) lichen d) moss

II State True or False **(3x1=3)**

7. Materials tend to become more concentrated as they move along a food chain.
8. The number and position of chlorine atoms in a substance determine its biodegradability.
9. Responses of plants and animals under a given set of environmental conditions will be the same qualitatively and quantitatively as under a different set of conditions.

III Match the following **(3x1=3)**

- | | | |
|---------------------------|---|--------------------------|
| 10. Phenology | - | a. MIR and PR |
| 11. Ecosystem | - | b. Whittaker |
| 12. Risk characterisation | - | c. Qualitative character |
| | - | d. niche |

IV Complete the following (6x1=6)

13. Nutrient cycling in an environment is due to the activity of _____.
14. _____ is a process to increase the biological activity by increasing the supply of oxygen to the soil.
15. _____ is a set of interconnected food chains by which energy and materials circulate within an ecosystem.
16. _____ is the most suitable technique for metal recovery from low grade ores.
17. The buds of _____ are completely hidden in the soil, as bulbs and rhizomes.
18. The substances difficult to degrade are called_____.

V. Answer any six of the following, each within 50 words only (6x3=18)

19. Define Homeostasis.
20. Distinguish between pyramid of number and pyramid of energy.
21. Write short notes on Raunkier's life form.
22. Distinguish between selective and nonselective exposure tests.
23. What is bioaccumulation?
24. Mention the roles of EPA.
25. What is *in situ* bioleaching?
26. What is risk and risk assessment?
27. What is exposure assessment?

SECTION - B**Answer any FOUR questions. Each answer should not exceed 200 words. (4x6=24)**

28. What is food chain? Explain any one type of food chain.
29. Give an account of the various quantitative characters used in the plant community characterization.
30. Describe the process of biotransformation of DDT.
31. What is phytoremediation? Briefly write any two phytoremediation methods.
32. What are bioindicators? Describe their role in environmental monitoring.
33. Write in brief about environmental impact assessment.

SECTION – C**Answer any TWO questions. Each answer should not exceed 1000 words (2x20=40)**

34. Define ecosystem. Briefly describe the various components and structure of any one ecosystem you have studied.
35. Write an essay on methods of study of plant communities.
36. What is bio-magnification? With an example describe the process of bio-magnification. Add a note on factors affecting bio-magnification.
37. What are xenobiotics? Explain the process of biodegradation of Pentachlorophenol and Polychlorinated biphenyls.
