

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted during the academic year 2011 - 12)

SUBJECT CODE: 11BT/MC/EE54

B. Sc. DEGREE EXAMINATION, NOVEMBER 2013
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

I. Define each of the following in one sentence: (3 x 1=3)

1. Food web
2. Stratification
3. Ecological niche

II. Choose the correct answer of the following: (5 x 1 = 5)

4. Which one of the following is not a functional unit of an ecosystem?
 - a) Productivity
 - b) Stratification
 - c) Energy flow
 - d) Decomposition
5. Which one of the following is not a gaseous biogeochemical cycle in ecosystem?
 - a) Nitrogen cycle
 - b) Carbon cycle
 - c) Sulphur cycle
 - d) Phosphorus cycle
6. Minamata disease is associated with toxicity of
 - a) Cadmium
 - b) Chromium
 - c) Mercury
 - d) Lead
7. Environmental biotechnology involves
 - a) the use of microbes to clean up the environment
 - b) bioremediation
 - c) the study of benefits and hazards associated with GMMs
 - d) all of these
8. The use of living microorganism to degrade environmental pollutants is called
 - a) microremediation
 - b) nanoremediation
 - c) bioremediation
 - d) all of these

III. Fill in the blanks:**(5 x 1 = 5)**

9. _____ is called as the superbug that could clean up oil spills.
10. The process of converting environmental pollutants into harmless products by naturally occurring microbes is called _____.
11. A non directed physico chemical interaction between heavy metal ions and microbial surface is called _____.
12. Chlorella species are widely used in the removal of _____.
13. Many individuals of the same species living together in a defined area form a _____.

IV. State whether True or False:**(5 x 1 = 5)**

14. The process of extracting metals from ore bearing rocks is called bioleaching.
15. Ex situ bioremediation involves the removal of pollutants and collection at a place to facilitate microbial degradation
16. DDT is used in pollution control.
17. Entox is a method to detect the ecological niche.
18. EIA is biomonitoring of Ecosystem

V. Answer any six in 50 words:**(6 x 3=18)**

19. Components of an ecosystem.
20. Food chain
21. Energy flow
22. Kinds of Ecosystem
23. Homeostasis
24. Phytoremediation.
25. Hazard identification
26. Acute Toxicity
27. Periodicity

Section B**VI. Answer any 4 out of 6 questions in 200 words each:****(4 x 6=24)**

28. Explain the biodegradation of xenobiotics using microbes
29. Give an account on Shanon's Index of General Diversity
30. Write short notes on biosensors.
31. Describe biomagnification and bioaccumulation of toxicants.
32. Describe biotransformation with reference to DDT.
33. Enlist the methods of testing toxicity and explain any two briefly.

Section C**VII. Answer any 2 out of 4 questions in 1000 words each:****(2 x 20=40)**

34. Give a detailed account on the quantitative analysis of plant communities.
35. What is Environmental Impact Assessment? Explain the stages of EIA in detail.
36. Describe bioleaching in detail.
37. Write descriptive notes on bioremediation.
