STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted during the academic year 2011 – 2012)

SUBJECT CODE: 11ZL/MC/EB64

B. Sc. DEGREE EXAMINATION APRIL 2014
BRANCH VI.A. ADVANCED ZOOLOGY & BIOTECHNOLOGY
SIXTH SEMESTER

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

SECTION – A

ANSWER ALL QUESTIONS : **(10 X 3 = 30)**

1. Name any three microbes and state their uses.

2. Expand:
   i) CFC ii) PCB iii) DDT

3. Comment on Superbug.

4. Differentiate Bioremediation and Phytoremediation.

5. Fill in the blanks:
   i) The process of uptake into an organism from the abiotic compartments is known as _____.
   ii) Bioaugmentation is a part of _____ strategy.
   iii) _____ is a waste material discharged into the environment, treated or untreated.
   iv) _____ is the process by which water bodies receive excess nutrients, primarily nitrogen and phosphorous, which stimulate excessive algal and plant growth.
   v) Biodiesel is typically made by chemically reaching _____ with an alcohol producing fatty acid esters.
   vi) Liquid mixture of aqueouly insoluble matter is known as _____.

6. Match the following:

Enzymes	Applications
a. Trypsin	Dairy
b. Lactase	Detergents
c. Lipase	Fruit juices
d. Cellulase	Leather and Medicine
e. Protease	Starch
f. β-amylase	Brewing and Baking

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7. Define transposons.

8. What is "Settling" process in Activated sludge treatment?

9. State whether true or false:
   a. Thermophilic organisms that often yield enzymes are themselves stable at high temperature.
   b. The conjugate protein, myoglobin, is present in muscles and it is a carbon-di-oxide carrier.
   c. Microbes employed in biofilters are mesophilic.
   d. A cloned gene is injected into the nucleolus of a fertilized egg.
   e. Hazardous waste containing heavy metals generally should not be bioprocessed.
   f. Transgenic cattle were created to produce milk containing human protein which help in treatment of human emphysema.

10. Differentiate aerobic lagoon and anaerobic lagoon.

SECTION – B

ANSWER ANY FIVE QUESTIONS : **(5 X 6 = 30)**

11. Explain Biomarkers and Biosensors.
12. Explain the Biodegration of organic compounds.
13. Write about the applications of Genetically Modified Organisms.
14. Elaborate Sewage water treatment.
15. What are Bio fertilizers and explain their uses?
16. Explain Bioleaching and its impact.
17. Give a brief account on Biopolymers and Bioplastics.

SECTION – C

ANSWER ANY TWO QUESTIONS : **(2 X 20 = 40)**

18. Write an essay on Bioremediation technique *in-situ* and *ex-situ*.
19. Explain wastewater treatment from tannery and dairy industries.
20. Explain in detail the need for recovery of resources.
21. Give a detailed account on Biofuels.

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