STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI –600 086
(For candidates admitted during the academic year 2015– 2016 & thereafter)

SUBJECT CODE: 15BY/PE/ET14

M. Sc. DEGREE EXAMINATION, APRIL 2017
FOURTH SEMESTER

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

SECTION – A
ANSWER ALL THE QUESTIONS **(20 x 1 = 20)**

1. Mention the role of nitrifying bacteria in soil.
2. Comment on bioaugmentation and its role in environmental cleanup.
3. Define bioremediation.
4. State an advantage of *in situ* bioremediation.
5. Differentiate between dry bioreactor and slurry bioreactor.
6. What is an oxidation ditch?
7. Define $PM_{2.5}$ and comment on its impact on health.
8. What is grey water?
9. List one advantage and one disadvantage of a trickling filter.
10. State a reason why CRT monitors have been categorised as hazardous household waste.
11. Name the place that is known as the "e-waste capital of the world".
12. What is a xenobiotic compound?
13. State a method of disposal of biologically contaminated samples generated from hospitals.
14. What are genetic sensors?
15. Give an example of a bioelement used in a biosensor.
16. Give an application of vermiwash.
17. Differentiate between epigeic and anecic earthworms in terms of their habitat.
18. List two examples of microorganisms used as Biofertilizers.
19. Name two food crops that have been used as a sugar source for the production of bioethanol.
20. Define biomineralisation.

SECTION – B

ANSWER ANY FOUR QUESTIONS IN ABOUT 600 WORDS (4 x 10 = 40)

21. Explain bioleaching with an example.
22. Delhi is one of the most polluted cities in the world with an AQI of more than 300. Discuss the principal sources of air pollution and add a note on its control and management.
23. What is E-waste? Suggest strategies to manage it.
24. Write a note on the application of rDNA technology in bioremediation.
25. Elucidate how the microbial fuel cell is a green approach for the utilization of waste for the generation of bioelectricity.
26. Outline the principles of solid waste management.
27. Give an account of Phytoremediation.

SECTION – C

ANSWER ANY TWO QUESTIONS IN ABOUT 1500 WORDS (2 x 20 = 40)

28. Write an essay on genetically modified organisms in waste management.
29. Describe in detail the biological process of wastewater treatment.
30. Explain the current practices of dairy and leather waste management.
31. *"Organic waste is a valuable resource."* Justify this statement with reference to Vermiculture.

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