

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

SUBJECT CODE: 15BT/MC/EE54

B. Sc. DEGREE EXAMINATION, NOVEMBER 2017  
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 marks)

I. CHOOSE THE CORRECT ANSWER:

(5x1= 5)

1. Why does DDT magnify within food chains when certain other chemicals do not ?
  - a . DDT is more toxic .
  - b . DDT is stored in animal fat and is not readily eliminated from the body.
  - c . DDT is now present in great quantities in most natural habitats.
  - d . All of these are correct.
2. Lichens are used as
  - a . Source of wood.
  - b . Initial vegetation for waste lands.
  - c . To check air pollution.
  - d . Bio- indicator of water and air pollution.
3. The National Air quality program monitors which of the following pollutants at all location
  - a. CO<sub>2</sub>,SO<sub>2</sub> and NO<sub>x</sub>
  - b. SO<sub>2</sub> NO<sub>x</sub> and suspended particulate matter
  - c. O<sub>2</sub>.CO<sub>2</sub> and CFC
  - d. CFC,CO<sub>2</sub> and particulate matter
4. Which of the following is not at the heart of safety management?
  - a. Risk Management
  - b. Hazard identification
  - c. Auditing
  - d. Training
5. The density of a species is the numerical representation of its individuals in an unit area or volume
  - a. Population density
  - b. Dominance
  - c. Abundance
  - d. Frequency

II. FILL IN THE BLANKS

(5x1= 5)

6. Severe effects suffered by organisms from short term exposure to toxic chemicals results in .....
7. Filtering water through a mass of roots to remove toxic substances is called .....
8. .... is a quantitative estimation of how toxic a substance is to humans at increasing levels of exposure.
9. The various processes of plant life is called the .....
10. .... is used to separate particulate matter from the air.

**III. TRUE/FALSE****(4x1=4)**

11. Exposure assessment does not examine the frequency timing and levels of contact with the stressor.
12. Magnification of toxins increases in an ecosystem along with the trophic levels.
13. Memory loss and depression are two long term effects of PCP.
14. The relative distribution of a species within the community is known as its frequency.

**IV. MATCH THE FOLLOWING****(4x1=4)**

- |                           |   |   |
|---------------------------|---|---|
| 19. Bioleaching           | – | Identification of chemical hazards                    |
| 20. Risk Characterization | – | Hallicinogenic effect                                 |
| 21. Exotoxicity           | – | microbial enzymes used to extract metal from ore      |
| 22. PCP                   | – | Examines risk from exposure to environmental stressor |

**V. ANSWER ANY SIX IN 50 WORDS:****(6 x 3=18)**

19. Loop method.
20. Index of Dominance
21. Bioindicator
22. Scoping
23. Risk Characterization
24. Water hardness
25. Xenobiotics
26. Sub acute test
27. Stratification

**SECTION - B****VI. ANSWER ANY 4 OUT OF 6 QUESTIONS IN 200 WORDS EACH: (4 x 6=24)**

28. What is the principle behind the extraction of metals using Bacteria by the process bioleaching?
29. Write the effects of bioaccumulation on terrestrial system.
30. Give a brief account on risk assessment.
31. Explain with example the types of air pollution control methods
32. Write a short note on Biosensors.
33. Describe the two types of transect methods. Explain its advantages and disadvantages.

**SECTION - C****VII. ANSWER ANY 2 OUT OF 4 QUESTIONS IN 1000 WORDS EACH: (2 x 20=40)**

34. Give an account of Phytoremediation.
35. Write an essay on Bioindicators.
36. Explain the administration procedure for EIA studies. What are the advantages and disadvantages of public participation?
37. Explain Raunkaier's Biological Spectrum.

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