

B. Sc. DEGREE EXAMINATION, NOVEMBER 2014
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. Homeostasis is
 - a) Tendency of biological systems to change with change in environment
 - b) Tendency of biological systems to resist
 - c) Disturbance of self regulatory system and natural controls
 - d) Biotic materials used in homeopathic medicines.
2. Which of the following bacterium is called as the superbug that could clean up oil spills:
 - a) *Bacillus subtilis*
 - b) *Pseudomonas denitrificans*
 - c) *Pseudomonas putida*
 - d) *Bacillus denitrificans*
3. A cross-section of an area used as a sample for recording , mapping or studying vegetation is known as
 - a) loop method
 - b) quadrat method
 - c) line method
 - d) transect method
4. D.D.T. is
 - a) Non-pollutant pesticide
 - b) An antibiotic
 - c) A non-degradable pollutant
 - d) A biodegradable pollutant
5. Minamata disease is caused by:
 - a) Mercury
 - b) Lead
 - c) PAN
 - d) SO₂

II. FILL IN THE BLANKS**(5x1= 5)**

6. Food chain in which microorganisms breakdown the food formed by primary producers is _____.
7. _____ refers to the degree of dispersion in terms of percentage occurrence.
8. _____ is the inherent potential or capacity of a material to cause adverse effects in living organisms.
9. The process of converting environmental pollutants into harmless products by naturally occurring microbes is called _____.
10. The contact reaction between a chemical or physical agent and a biological system is known as _____.

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

11. Energy flow in ecosystem is always Bidirectional.
12. The dose of material that is estimated to be lethal to 50% of the test organisms is median lethal dose (LD50).
13. Plant communities are not reliable indicators than individual species.
14. Relative risk is the ratio of the risk in the exposed population to the risk in the unexposed population.

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

- | | | |
|---------------------------------------|---|---------------------|
| 15. Energy pyramid | - | biological leaching |
| 16. Indicators of petroleum deposits | - | LD ₅₀ |
| 17. <i>Ferrobacillus ferrooxidans</i> | - | protozoans |
| 18. Median lethal dose | - | always upright |

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

19. Biotic component
20. Mutualism
21. What is Shannon's index?
22. Stratification.
23. Define biomagnification.
24. Acute toxicity.
25. What is phytoremediation?
26. Xenobiotic compound
27. Risk characterisation

SECTION - B

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

28. Explain Quadrat method and its kinds briefly.
29. With the help of diagrams explain the different types of ecological pyramids.
30. Write short notes on the following: a) Density b) Cover c) Frequency
31. What is Biotransformation? Add a note on Biotransformation of DDT.
32. What are the advantages and disadvantages of bioleaching?
33. Discuss Risk Characterisation.

SECTION - C

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

34. What is food chain and food web? Explain with the help of suitable examples.
35. Explain Raunkiaer's life form classes of plant community.
36. What are bioindicators? Discuss with suitable examples, how these may be used in monitoring the state of environment?
37. Enumerate the parameters, methods and significance of monitoring the quality of Environment.
