STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086 (For candidates admitted during the academic year 2019 – 2020 & thereafter)

B. Sc. DEGREE EXAMINATION, NOVEMBER 2024 BRANCH V (a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY FIFTH SEMESTER

COURSE: MAJOR - COREPAPER: ECOLOGY AND ENVIRONMENTAL BIOTECHNOLOGYSUBJECT CODE: 19BT/MC/EE54TIME: 3 HOURSMAX.MARKS:100

SECTION –A

(18x1=18 Marks)

I. CHOOSE THE CORRECT ANSWER:

| 1. The major cause of environmental degradation is | |
|---|------------------------|
| a) Bio-magnification | b) Nitrogen deposition |
| c) Quorum quenching | d) Lyophilization |
| 2. The primary cause of acid rain is | |
| a) Nitrous oxide | b) Sulphur dioxide |
| c) Nitric acid | d) None of the above |
| 3. What do the arrows in a food web represent? | |
| a) Flow of energy | b) Producer |
| c) Consumer | d) Water flow |
| 4. The first trophic level consists of | |
| a) Energy | b) Producer |
| c) Consumer | d) Water flow |
| 5. The trophic level of the secondary consumers is at | |
| a) 1st level | b) 2nd level |
| c) 3rd Level | d) 4th level |

II. FILL IN THE BLANKS

6. Density is the number of plants rooted within each -----.

- 7. RSPM is expanded as
- 8. The process of mitigating pollutant in contaminated soil, air and water using plants is known as _____.

9. Flow of energy in an ecosystem is always -----.

10. The substances difficult to degrade are called------.

III. MATCH THE FOLLOWING

| 11. Ringlemann smoke chart | - Phytoremediation |
|----------------------------|--------------------|
| 12. NEPA | - Bioindicator |
| 13. Coliforms | - India |
| 14. EPA | - Air quality |
| 15. Duck weed | - USA |
| | |

IV. TRUE OR FALSE

- 16. Environment protection act started in 1985.
- 17. Acidophilic bacteria are involved in Bioleaching
- 18. *Typha* species is involved in phytoremediation.

V. ANSWER ANY SIX IN 50 WORDS:

(6 x 3=18 Marks)

19. Biotic component

- 20. Frequency percentage
- 21. Sunken stomata
- 22. Biomagnification
- 23. Vivipary germination
- 24. Xenobiotic
- 25. Risk characterization
- 26. Ecological amplitude
- 27. Rhizodegradation

SECTION - B

ANSWER ANY 4 OUT OF 6 QUESTIONS IN 200 WORDS EACH: (4x6=24 Marks)

- 28. Differentiate quadrat and transect methods of sampling.
- 29. Describe the vertical stratification with reference to a forest.
- 30. Enumerate the process of biotransformation of DDT.
- 31. List the morphological and anatomical adaptations of Hydrophytes.
- 32. How will you monitor the quality of air?
- 33. Explain the various methods of phytoremediation.

SECTION - C

ANSWER ANY 2 OUT OF 4 QUESTIONS IN 1000 WORDS EACH: (2x20=40 marks)

- 34. Elaborate Raunkiaer's biological spectrum of the plant community.
- 35. Describe the aquatic ecosystem with pond as an example.
- 36. Write details on the stages involved in Environmental Impact Assessment.
- 37. Highlight the uses of bioindicators in monitoring the state of environment.

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