

M. Sc. DEGREE END SEMESTER EXAMINATION : NOVEMBER 2023**SEMESTER 1 : ENVIRONMENTAL SCIENCE****COURSE : 21P1EVST01 : FUNDAMENTALS OF ENVIRONMENTAL SCIENCE***(For Regular - 2023 Admission and Improvement/Supplementary -2022/2021 Admissions)*

Duration : Three Hours

Max. Weights: 30

PART A**Answer any 8 questions****Weight: 1**

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| 1. | Comment on Sacred Groves. | (U, CO 5) |
| 2. | What is energy audit? | (U, CO 5) |
| 3. | Enumerate the sequential arrangement of different horizontal layers found in the soil. | (U, CO 3) |
| 4. | Comment on the principles of toxicology. | (U, CO 6) |
| 5. | Write a short note on meta population. | (U, CO 5) |
| 6. | What is 'Ecological guild'? | (U, CO 1, CO 3) |
| 7. | Write a short note on earthquake. | (R, CO 6) |
| 8. | What is meant by Character displacement? | (U, CO 3) |
| 9. | Differentiate GPP and NPP. | (U, CO 6) |
| 10. | What is atmospheric turbulence? | (U, CO 2, CO 3) |
| | | (1 x 8 = 8) |

PART B**Answer any 6 questions****Weights: 2**

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| 11. | How does the cybernetic system of an ecosystem maintain itself by some forms of information feed back into the system. Explain with example. | (An, CO 3) |
| 12. | Briefly describe the characteristics of a Community. | (U, CO 1, CO 3) |
| 13. | Explain the term disaster recovery in relation to disaster management. | (U, CO 6) |
| 14. | Write any five techniques used to measure the productivity. | (U, CO 6) |
| 15. | Write notes on the radioisotopes of ecological importance. | (U, CO 6) |
| 16. | Write a short note on the following. A) Soil moisture content b) Soil erodibility | (U, CO 3) |
| 17. | Which are the three different structures or pattern of distribution of population usually seen in an ecosystem? | (U, CO 5) |
| 18. | Explain Wind Rose with a neat diagram. | (U, CO 2, CO 3) |
| | | (2 x 6 = 12) |

PART C**Answer any 2 questions****Weights: 5**

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| 19. | Comment on floods as an environmental disaster in the mountain regions of Kerala. Explain how this disaster can be managed. | (An, CO 6) |
| 20. | Discuss the role of UN conventions on Environmental protection. | (U) |

21. Explain the diagrammatic representation of the trophic structure (number, biomass) and trophic function (energy transformation at each level) in an ecosystem. (An, CO 1, CO 4)
22. Define the concept of community and explain different ways of measuring species diversity in a community. (U, CO 1, CO 3)
(5 x 2 = 10)

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
CO 1	Recall core concepts and methods of ecological sciences and their application in environmental problem-solving	U	6, 12, 21, 22	13
CO 2	Explain the transnational character of environmental problems and ways of addressing them	U	10, 18	3
CO 3	Identify the primary environmental problems (e.g., invasive species, climate change, small populations, pollution) and the science behind those problems	An	3, 6, 8, 10, 11, 12, 16, 18, 22	17
CO 4	Discover the inter-relationship between organism in population and communities (population ecology).	Cr	21	5
CO 5	Assess the biological productivity of nature and its relations with mankind	Cr	1, 2, 5, 17	5
CO 6	Develop skills required to research and analyze environmental issues scientifically	Cr	4, 7, 9, 13, 14, 15, 19	14

Cognitive Level (CL): Cr - CREATE; E - EVALUATE; An - ANALYZE; A - APPLY; U - UNDERSTAND; R - REMEMBER;