

2024
M.Sc.
Fourth Semester
CORE – 12
BOTANY
Course Code: MBOC 4.21
(Ecology & Ecosystem Analysis)

Total Mark: 70
Time: 3 hours

Pass Mark: 28

Answer five questions, taking one from each unit.

UNIT-I

1. Explain the key concepts and principles relating to limiting factors of an ecosystem. Describe the role of soil in shaping a terrestrial ecosystem. 6+8=14
2. Briefly describe on the organization of the ecosystem. Speculate how might fire change the trajectory of a forest ecosystem development. 5+9=14

UNIT-II

3. What do you understand by carrying capacity? Discuss the various factors that regulate population growth. 5+9=14
4. What are ecotypes and under what conditions might they arise? Discuss on the concept of ecological niche. 9+5=14

UNIT-III

5. Give a brief account on major life forms. Compare the biological spectra of the various regions of India. 9+5=14
6. Briefly describe the analytical characters of a plant community. With examples, distinguish between quantitative and qualitative characteristics of a community. 9+5=14

UNIT-IV

7. Describe the principles and models associated with the energy flow through an ecosystem. Describe the factors and conditions that determines the efficiencies of ecological bioenergetics. 9+5=14
8. Give an account on the mechanism and significance of decomposition. Describe the key sources in nitrogen cycling. 9+5=14

UNIT-V

9. Compare and contrast resistance from resilience of an ecosystem. Explain resilience according to non-linear systems theory. 5+9=14
 10. Furnish a detailed discussion on the strategies of ecosystem development with reference to the various attributes of an ecosystem. 14
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