



National Open University of Nigeria
Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja
Faculty of Science
2024 1 EXAMINATION

COURSE CODE: ESM 426

CREDIT UNIT: 2

TIME: 2 HRS 15 MINS

Instruction: Attempt question number ONE (1) and any other TWO (2) questions. Question number one (1) is compulsory and carries 30 marks, while the other questions carry equal marks (20) each

- 1a. What are the dominant plant types in the marine ecosystem, and how does their productivity compare to land plants? 5Marks
- 1b. What are the major differences between the marine ecosystem and the land ecosystem in terms of environmental conditions? 5marks
- 1c. What is the concept of a climax community in ecological succession, and how does it relate to ecosystem stability?
- 1d. Provide examples of fragile and resilient ecosystems and explain their characteristics that make them so. 5marks
- 1e. How does the amplitude and elasticity of an ecosystem relate to its fragility? 5marks
The amplitude and elasticity of an ecosystem are essential factors in determining its fragility. The
- 1f. What is the relationship between ecosystem stability and fragility? 5marks
- 2a. Explain the concept of ecological dominants within a biotic community 5marks
- 2b. Differentiate between crude population density and ecological population density. 5marks
- 2c. What is the significance of growth rate in population ecology. 4marks
- 2d. Explain the concept of survivorship curves and provide an example of each type. 6marks
- 3a. What are the major characteristics that distinguish the forest ecosystem from the grassland ecosystem? 5marks
- 3b. What are the major sub-divisions of the tropical forest ecosystem, and how do they differ from each other? 5marks
- 3c. How does fire play a significant role in the grassland ecosystem, and why is it often associated with human activity? 5marks
- 3d. What is the role of trees in the tropical rainforest ecosystem, and how does their diversity contribute to the overall ecosystem dynamics? 5marks
- 4a. What factors contribute to the low biological productivity of deserts? 5marks
- 4b. Describe the features that make some of the plant and animal to survive in arid environment 5marks
- 4c. Explain the features of cold deserts or tundra. 4marks
- 4d. Compare and contrast the vegetation and animal life in hot deserts and cold deserts (tundra).

- 5a. What is the ecosystem concept and why is it important in Biogeography and ecology? 5marks
- 5b. How is an ecosystem structured, and what are its main components? 5marks
- 5c. What is ecological succession, and how does it lead to the development of ecosystems?
5marks
- 5d. What is the climax concept in ecosystem development, and how does it relate to stability?
5marks

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