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**M.Sc. (Third Semester)
EXAMINATION, Dec. - Jan., 2021-22**

BOTANY**Paper - Second****(Plant Ecology-I)****(Ecosystem and Vegetation Ecology)***Time : Three Hours]**[Maximum Marks : 80***Note:** Attempt all sections as directed.**Section - A****(Objective/Multiple Choice Questions)****(1 Mark each)****Note : Attempt all questions.****Choose the correct answer :**

1. The term Ecosystem was first proposed by
 - (A) A. G. Tansley
 - (B) Karl Mobius
 - (C) S.A. Forbes
 - (D) G. F. Morozov

2. Which of the following is a recognizable stage of decomposition?
 - (A) Formation of detritus
 - (B) Formation of Humus
 - (C) Formation of Minerals
 - (D) All of these
3. The rate of storage of organic matter not used by the heterotrophs known as-
 - (A) Gross Primary Productivity
 - (B) Net community Productivity
 - (C) Net Primary Productivity
 - (D) Secondary Productivity
4. Annual gross production is maximum for which of the following?
 - (A) Grassland
 - (B) Moist forest
 - (C) Estuaries
 - (D) Deep ocean
5. 'Y' shaped energy flow model explains energy flow in-
 - (A) Grazing food chain only
 - (B) Detritus food chain only
 - (C) Both Grazing and Detritus food chain
 - (D) Parasitic food chain only.

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6. To whom the EIA project is submitted for evaluation?
- (A) Authorizing authority
 - (B) Environmental authority
 - (C) EIA authority
 - (D) All of these
7. Compatibility between energy and Economics is a-
- (A) Premises of sustainable development
 - (B) Precondition of sustainable development
 - (C) Agenda of the sustainable development
 - (D) All of these
8. Which of the following is an indicator of sustainable development?
- (A) No poverty
 - (B) Gender equality
 - (C) Decent economic growth
 - (D) All of these
9. The ability for an ecosystem to remain unchanged is known as:
- (A) Resilience
 - (B) Resistance
 - (C) Restoration
 - (D) Perturbation

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10. Which of the following has three main sequential phases arrival, establishment and spread?
- (A) Restoration
 - (B) Invasion
 - (C) Introduction
 - (D) All of these
11. Which of the following is a synthetic character of plant community?
- (A) Fidelity
 - (B) Vitality
 - (C) Physiognomy
 - (D) Sociability
12. Which of the following is a Phytosociological method of vegetation sampling?
- (A) Quadrat method
 - (B) Transect method
 - (C) Point method
 - (D) All of these
13. An entire set of conditions under which an organism survives and reproduces itself is known as -
- (A) Fundamental niche
 - (B) Realized niche
 - (C) Ecological niche
 - (D) None of these

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14. Ordination means -
- (A) Collection of data
 - (B) Analysis of data
 - (C) Summarization of data
 - (D) Both (B) and (C)
15. Inter - specific association can be -
- (A) Antagonistic
 - (B) Mutualistic
 - (C) Competitive
 - (D) All of these
16. Climax pattern hypothesis was given by -
- (A) Whittaker
 - (B) Tansley
 - (C) Clements
 - (D) Fosberg
17. The cause of nudation in process of succession is.
- (A) Topographic
 - (B) Climatic
 - (C) Biotic
 - (D) All of these

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18. Hydrilla and vallisnaria are the examples of which stage of Hydrarch succession?
- (A) Rooted submerged stage
 - (B) Rooted floating stage
 - (C) Reed swamp stage
 - (D) Sedge meadow stage
19. Changes in Ecosystem properties during succession may become
- (A) Fluctuational
 - (B) Directional
 - (C) Both (A) and (B)
 - (D) Random
20. Connell and slatyer proposed which of the following model of succession?
- (A) Facilitation model
 - (B) Tolerance model
 - (C) Inhibition model
 - (D) All of these

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Section - B

(Very Short Answer Type Questions)

(2 Mmarks each)

Note : Attempt all questions in 2-3 lines.

1. What is Primary production?
2. What do you mean by litter fall?
3. What is Resilience?
4. What do you understand by Ecosystem restoration?
5. What is ecological Niche?
6. What is community?
7. What do you understand by fluctuational changes?
8. What do you mean by Temporal changes?

Section - C

(Short Answer Type Questions)

(3 Marks each)

Note: Answer all questions within 75 words.

1. Describe the global pattern of Primary production.
2. Explain the trophic organization.
3. What are sustainability indicators?
4. Discuss the usefulness of EIA.
5. Describe the types of Niches.

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6. Explain the Mutualism.
7. Explain the difference between cyclic and Non cyclic changes.
8. Describe the relay floristic.

Section - D

(Long Answer Type Questions)

(5 Marks each)

Note: Answer any four questions within 150 words.

1. Discuss the sedimentary types of Bio-geo-chemical cycles.
2. Describe the ecological efficiencies.
3. Describe the Anthropogenic perturbations.
4. Discuss the plant invasion.
5. Describe the quantitative characters of plant community.
6. Give examples of Interspecific associations.
7. Discuss the changes in Ecosystem properties during succession.
8. Write the theories of climax community in succesion.

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