



BRAINWARE UNIVERSITY

Term End Examination 2023-2024

Programme – B.Sc.(FND)-Hons-2022/B.Sc.(PSY)-Hons-2022

Course Name – Biodiversity and Conservation

Course Code - GEBT302

(Semester III)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Identify that in plant taxonomy, what is the study of the arrangement of leaves called?
- | | |
|---------------|----------------|
| a) Phyllotaxy | b) Mycology |
| c) Embryology | d) Ethnobotany |
- (ii) Select the correct order of taxonomic hierarchy from the following options:
- | | |
|---|---|
| a) Kingdom-Class-Order- Phylum-Family-Genus-Species | b) Kingdom-Phylum-Class-Order-Family-Genus-Species |
| c) Phylum-Class-Order-Family-Genus-Species-Kingdom | d) Kingdom-Phylum-Order- Class-Family-Genus-Species |
- (iii) Select which code governs the naming of algae, fungi, and plants?
- | | |
|--|---|
| a) International Code of Nomenclature for Zoology (ICNZ) | b) International Code of Nomenclature for Bacteria (ICNB) |
| c) International Code of Nomenclature for Viruses (ICNV) | d) International Code of Nomenclature for algae, fungi, and plants (ICNafp) |
- (iv) Suppose you discover a new plant species and want to determine its evolutionary history. Select which method of taxonomy would you use?
- | | |
|------------------------|---------------------------|
| a) Numerical Taxonomy | b) Molecular Taxonomy |
| c) Ecological Taxonomy | d) Morphological Taxonomy |
- (v) Infer which term describes a region with exceptionally high levels of biodiversity and high numbers of endemic species?
- | | |
|-------------------------|----------------------|
| a) Biome | b) Ecosystem |
| c) Biodiversity hotspot | d) Biosphere reserve |
- (vi) Infer that the concept of "hotspots" in biodiversity conservation was introduced by:
- | | |
|-------------------|------------------|
| a) Charles Darwin | b) Rachel Carson |
| c) Norman Myers | d) Jane Goodall |
- (vii) Interpret that which organization is responsible for maintaining the Red List of threatened species?

- a) Greenpeace
 c) International Union for Conservation of Nature (IUCN)
- b) World Wildlife Fund (WWF)
 d) United Nations Environmental Programme (UNEP)
- (viii) What does Ecological Taxonomy use to classify plants into groups?
- a) Morphological features
 c) Chemical data
- b) Habitat preferences and growth requirements
 d) DNA sequences
- (ix) Relate that the loss of biodiversity is often measured by the decline in:
- a) The number of humans on Earth
 c) The number of species per unit area
- b) The number of extinctions per year
 d) The number of invasive species
- (x) Infer how is molecular data used in Molecular Taxonomy?
- a) To study plant relationships in the field
 c) To construct phylogenetic trees showing evolutionary relationships
- b) To identify plant habitats
 d) To analyze plant anatomy
- (xi) Relate that which of the following is a direct consequence of habitat fragmentation?
- a) Increased genetic diversity
 c) Decreased species diversity
- b) Larger and more stable populations
 d) Enhanced ecosystem services
- (xii) Select the main purpose of captive breeding programs in conservation
- a) To domesticate wild animals
 c) To increase genetic diversity of endangered species
- b) To create hybrid species
 d) To reduce biodiversity in captivity
- (xiii) Show which international agreement aims to regulate international trade in endangered species?
- a) Convention on Biological Diversity (CBD)
 c) Kyoto Protocol
- b) Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
 d) Paris Agreement
- (xiv) Select what is the primary driver of the current mass extinction event?
- a) Asteroid impact
 c) Volcanic eruptions
- b) Overhunting by humans
 d) Climate change
- (xv) Define the term Ecological Niche
- a) The physical location where a species lives
 c) The total population size of a species
- b) The role and position of a species in its ecosystem
 d) The number of species in a given habitat

Group-B

(Short Answer Type Questions)

3 x 5=15

2. What does alpha diversity represent in ecology? (3)
3. What is the concept of a species in biology? (3)
4. Explain the significance of carbon, nitrogen, and phosphorus cycling in ecosystems? (3)
5. What are biotic and abiotic factors in an ecosystem, and how do they interact with each other? (3)
6. How do protected areas contribute to conservation efforts? (3)

OR

Explain the concept of in-situ conservation (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Explain the significance of biosphere reserve. (5)

8. Discuss the objectives, impact, and challenges faced by Project Tiger in India, highlighting its significance in the conservation of biodiversity and the preservation of ecological balance. (5)
9. Discuss Darwin's Theory of Evolution by Natural Selection (5)
10. Define the concept of species in biology. What are some challenges in defining and identifying species? (5)
11. Write down the difference between ex-situ conservation and in-situ conservation (5)
12. Evaluate the concept of ecological succession in ecosystems. Provide an example of ecological succession in an Indian context. (5)

OR

Assess the term "climax community" in the context of ecological succession. How does a climax community contribute to ecosystem stability? (5)
