

**B.Sc. BOTANY**  
**FOURTH SEMESTER**  
**ECOLOGY AND PHYTOGEOGRAPHY**  
**BSB-401**

**SET**  
**A**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

Marks: 20

(Objective)

Choose the correct answer from the following:

1 × 20 = 20

- The concept of Ecological pyramid was developed by:
  - Joseph Grinnel
  - Charles Elton
  - Odum
  - Hutchinson
- The transfer of food energy from plant source through a series of organism forms is called:
  - Ecological pyramid
  - Food chain
  - Food web
  - Trophic level
- Which one of the following is not a type of niche?
  - Trophic niche
  - Hypervolume niche
  - Overlapping niche
  - Habitat niche
- Increases rapidly in exponential manner and stops abruptly as environmental resistance is encountered suddenly in:
  - J shaped form of growth curve
  - Sigmoid form
  - Acceleration phase
  - Survivorship curve
- Theoretical maximum production of new individuals under ideal conditions refers to:
  - Realised natality
  - Realised mortality
  - Maximum natality
  - Minimum natality
- The term used for ecological interaction between two species where one species obtains a benefit from the relationship and the second species is affected by it:
  - Commensalism
  - Mutualism
  - Proto-cooperation
  - Parasitism
- $e = \sum (n_i/N)^2$  designate:
  - Shannon index of general diversity
  - Evenness index
  - Dominance index
  - Index of similarity
- Stable and mature community is called:
  - Climax community
  - Seral community
  - Stratification
  - Competition
- IVI signifies:
  - RF+RD+RA
  - RI+RK+RD
  - PI+PA+PR
  - RK+RM+RJ

0. Raunkiaer prepared phanerogamic flora of different life forms known as:
- Phenology
  - Biological spectrum
  - Phenography
  - Phenogram
11. Ginkgo biloba is an example of:
- Neo endemics
  - Ancient endemics
  - Palaeo endemics
  - Pseudoendemics
12. Which of the following is not a physical barrier for plant migration?
- Water deficiency
  - Sea
  - Mountain
  - Desert
13. Which of the following are the primary causes of water pollution?
- Plants
  - Animals
  - Human activities
  - None of the above
14. Chlorofluorocarbon are nonflammable chemicals mainly used in:
- Perfumes
  - Refrigerators
  - Air conditioners
  - All of the above
15. In most freshwater lakes, the algal productivity is limited by the availability of which of the following inorganic ions?
- Carbon
  - Nitrogen
  - Phosphorus
  - All of the above
16. In India, DDT was banned for its use in agriculture in:
- 1986
  - 1989
  - 1984
  - 1990
17. What is the protection and conservation of species in their natural habitat called?
- Ex-situ
  - In-situ
  - Off situ
  - No conservation
18. In which approach do we protect and conserve the whole ecosystem to protect the endangered species?
- Ex-situ
  - In-situ
  - Off situ
  - All of the above
19. Which of the following is an odd one?
- Corbett National Park
  - Ghana Bird Sanctuary
  - Western Ghats
  - Andaman and Nicobar Islands
20. How can viable material of endangered species be conserved?
- Gene pool
  - Herbarium
  - Gene library
  - Gene bank

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**( Descriptive )**

Time : 2 hr. 30 mins.

Marks : 50

[ Answer question no.1 & any four (4) from the rest ]

1. What is Ecosystem? Discuss energy flow with special reference to Y-shaped energy flow model. 2+8=10
2. What is Food chain and Food web? Describe two types of food chain with suitable example and diagram. 2+8=10
3. What is Population? Describe exponential and sigmoid growth curve in detail. 2+8=10
4. Write short notes on: 2.5×4=10
  - a) R and k selected species
  - b) Diversity
  - c) Succession
  - d) Mutualism
5. What is phytogeographical region of India? Discuss in detail the different phytogeographical region of India. 2+8=10
6. Write short notes on: 5×2=10
  - a) Endemism
  - b) Water pollution
7. What is the biodiversity status in India? Discuss the cause of loss of biodiversity. 2+8=10
8. What is conservation biology? Discuss in detail the Ex-situ and In-situ conservation. 2+8=10

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