

**M.Sc. BOTANY**  
**SECOND SEMESTER (REPEAT)**  
**PLANT ECOLOGY**  
**MSB-201**

**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 following helps to understand the feeding relationships and the interactions between organisms in any ecosystem:
  - Food chain
  - Food web
  - Ecological pyramid
  - Ecological succession
- The concept of ecological pyramid was developed by:
  - Dash
  - Charles Elton
  - Dempster
  - Lindman
- The process involving energy transformation will not occur spontaneously unless there is degradation of energy is:
  - Entropy
  - Trophic-Dynamic concept
  - First law of thermodynamics
  - Second law of thermodynamics
- The conversion of nitrogen into nitrates is called:
  - Ammonification
  - Nitrification
  - Denitrification
  - Electrochemical methods
- Logistic model is represented by:
  - $dN/dT = rN(K-N)/K$
  - $dN/dT = rN$
  - $(k-N) = rN$
  - $dN=Dt$
- When a stationary and stable age distribution exists, the specific growth rate is called:
  - Co-efficient of population growth
  - Carrying capacity
  - Age structure
  - Intrinsic rate of natural increase
- Density increases rapidly in exponential or compound interest fashion and stops abruptly as environmental resistance or another limit become effective more or less suddenly in:
  - The J shaped form of growth curve
  - Sigmoid form
  - Acceleration phase
  - Survivorship curve
- Suppose in an ecosystem considering the availability of space, food and availability of minimum space requirement of an individual of species.  $K=100$ .  $N=99$ . What is the carrying capacity?
  - 1
  - 0.01
  - 0
  - 0.001
- No. of quadrats in which species A occurred/total no. of quadrats examined \*100?
  - Density
  - Relative Density
  - Frequency
  - Relative Frequency

10. The diagrammatic representation of phenological events is called:
  - a. Phenology
  - b. Phenogram
  - c. Biological spectrum
  - d. IVI
11. Climax community results from which major activity?
  - a. Succession
  - b. Cohabitation
  - c. Stratification
  - d. Competition
12. The bare area is occupied by new community by the migrated species is known as:
  - a. Stabilization
  - b. Competition
  - c. Nudation
  - d. Invasion
13. Which is the characteristic of Buffer zone of biosphere reserve?
  - a. No human activity is allowed
  - b. Free human activity occur
  - c. Human activity is limited
  - d. Wild animals are absent
14. WCMC founded in:
  - a. 2001
  - b. 2000
  - c. 2003
  - d. 2002
15. Animal symbol of WWF is:
  - a. Tiger
  - b. Hornbill
  - c. Peacock
  - d. Giant Panda
16. Critically Endangered is the highest risk category assigned by the IUCN for:
  - a. Domesticated species
  - b. Exotic species
  - c. All of the above
  - d. Wild species
17. Often in water bodies subjected to sewage pollution fishes dies due to:
  - a. Pathogens related to sewage
  - b. Reduction of dissolved O<sub>2</sub> caused by microbial activity
  - c. Clogging of their gills by solid substances
  - d. Foul smell
18. UNEP founded in:
  - a. 1990
  - b. 1974
  - c. 1972
  - d. 1994
19. GEF full form:
  - a. Global Environment Facility
  - b. Global Environment Factor
  - c. Global Essential Facility
  - d. Global Essential Factor
20. Field gene bank is the most common method of conserving genetic resources with:
  - a. Recalcitrant seeds
  - b. Orthodox seeds
  - c. Pollen grains
  - d. Seeds

**( Descriptive )**

Time : 2 hr. 30 mins.

Marks : 50

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

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|-------------------------------------------------------------------------------------------------------------------------|--------|
| 1. Define Ecosystem. Describe four important functional components of Ecosystem.                                        | 2+8=10 |
| 2. Define birth rate and death rate in terms of Population Ecology. Describe population growth curve in detail.         | 3+7=10 |
| 3. Write notes on:<br>a) Positive interactions<br>b) R and K selected species                                           | 5×2=10 |
| 4. What is Community? Describe the different quantitative characteristics of community with proper formula.             | 2+8=10 |
| 5. What is ecological succession? Discuss in detail the type and the general process of succession.                     | 2+8=10 |
| 6. What is air pollution? Discuss the major cause of air pollution and its effect in the ecosystem.                     | 2+8=10 |
| 7. Write short notes on:<br>a) Field gene bank<br>b) Water pollution                                                    | 5×2=10 |
| 8. What is conservation biology? Discuss in detail about International efforts and Indian initiatives for conservation. | 2+8=10 |

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