

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

**SET  
C**

[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

- Which is the characteristic of Buffer zone of biosphere reserve?
  - No human activity is allowed
  - Free human activity occur
  - Human activity is limited
  - Wild animals are absent
- First national park of India was:
  - Panna national park
  - Kaziranga national park
  - Jim Corbett national park
  - Satpura national park
- WWF is a:
  - Central governmental organisation
  - State governmental organisation
  - Non governmental organisation
  - Both a and b
- UNEP full form is:
  - United Nations Education Programme
  - Union of National Environment Programme
  - Union of National Education Programme
  - United Nations Environment Programme
- Often in water bodies subjected to sewage pollution fishes dies due to:
  - Pathogens related to sewage
  - Reduction of dissolved O<sub>2</sub> caused by microbial activity
  - Clogging of their gills by solid substances
  - Foul smell
- When a threatened plant needs urgent measures to save it from extinction, the desirable approach is:
  - In situ conservation
  - Ex situ conservation
  - Cryopreservation
  - Biopreservation
- Critically Endangered is the highest risk category assigned by the IUCN for:
  - Domesticated species
  - Exotic species
  - All of the above
  - Wild species
- Field gene bank is the most common method of conserving genetic resources with:
  - Spores
  - Orthodox seeds
  - Pollen grains
  - Recalcitrant seeds
- Ozone depletion is caused due to increase in the level of:
  - Water vapour
  - Oxygen
  - Chlorofluorocarbon
  - Carbon monoxide

10. The Botanical Garden and the National Botanical Research Institute are located respectively at:
- |                           |                        |
|---------------------------|------------------------|
| a. Pune and Howrah        | b. Howrah and Lucknow  |
| c. Darjeeling and Lucknow | d. Shimla and Dehradun |
11. Ecology deals with the group of different kinds of populations in an area is known as:
- |               |               |
|---------------|---------------|
| a. Community  | b. Succession |
| c. Cohabitant | d. Ecotone    |
12. Individual study of a species is known as:
- |               |                    |
|---------------|--------------------|
| a. Autecology | b. Synecology      |
| c. Ecology    | d. Habitat ecology |
13. The concept of using Subscripts to show the energy content of different trophic levels is known as:
- |                                        |                      |
|----------------------------------------|----------------------|
| a. Y shaped energy flow model concept  | b. Eltonian concept  |
| c. Lindeman's Trophic -Dynamic concept | d. None of the above |
14. When a stationary and stable age distribution exists, the specific growth rate is called:
- |                                      |                                       |
|--------------------------------------|---------------------------------------|
| a. Co-efficient of population growth | b. Carrying capacity                  |
| c. Age structure                     | d. Intrinsic rate of natural increase |
15. 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:
- |                                      |                       |
|--------------------------------------|-----------------------|
| a. The J shaped form of growth curve | b. Sigmoid form       |
| c. Acceleration phase                | d. Survivorship curve |
16. 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?
- |      |          |
|------|----------|
| a. 1 | b. 0.01  |
| c. 0 | d. 0.001 |
17. Phenology is:
- |                                            |                                     |
|--------------------------------------------|-------------------------------------|
| a. A quantitative character of a community | b. Defines diversity of a community |
| c. A qualitative character of a community  | d. Defines germination of a species |
18. Climax community results from which major activity:
- |                   |                 |
|-------------------|-----------------|
| a. Succession     | b. Cohabitation |
| c. Stratification | d. Competition  |
19. The bare area is occupied by new community by the migrated species is known as:
- |                  |                |
|------------------|----------------|
| a. Stabilization | b. Competition |
| c. Nudation      | d. Invasion    |
20. Which of the following is not a major greenhouse gas?
- |                   |                      |
|-------------------|----------------------|
| a. Carbon dioxide | b. Methane           |
| c. Water vapour   | d. Calcium carbonate |

**( Descriptive )**

Time : 2 hr. 30 mins.

Marks : 50

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

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|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 1. What is Ecosystem? Describe any three components of Ecosystem in brief with special reference to Y shaped model of energy flow with suitable diagram. | 2+5+3=10 |
| 2. What is Population? Describe the different attributes of population and population growth curve with suitable diagram.                                | 2+8=10   |
| 3. Write short notes on:<br>a) Food chain<br>b) R and K selected species                                                                                 | 5×2=10   |
| 4. What is Community? What are the different quantitative characters of a community? Discuss with proper formulas.                                       | 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 water pollution? Discuss the major cause of water pollution and its effect in the ecosystem.                                                  | 2+8=10   |
| 7. What is In situ conservation? Discuss in details the international and Indian initiatives taken for In situ conservation.                             | 2+8=10   |
| 8. Write short note on:<br>a) Field gene bank<br>b) Principles and practices of Ex situ conservation                                                     | 5×2=10   |

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