M.Sc. BOTANY
SECOND SEMESTER
PLANT ECOLOGY
MSB-201
[USE OMR SHEET FOR OBJECTIVE PART]

SET
B

Duration: 3 hrs.
Full Marks: 70

(**Objective**)

Time: 30 mins.
Marks: 20

Choose the correct answer from the following:
1×20=20

1. Climax community results from which major activity?
   a. Succession
   b. Cohabitation
   c. Stratification
   d. Competition

2. The bare area is occupied by new community by the migrated species is known as:
   a. Stabilization
   b. Competition
   c. Nudation
   d. Invasion

3. 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

4. WCMC founded in:
   a. 2001
   b. 2000
   c. 2003
   d. 2002

5. Animal symbol of WWF is:
   a. Tiger
   b. Hornbill
   c. Peacock
   d. Giant Panda

6. 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

7. Often in water bodies subjected to sewage pollution fishes dies due to:
   a. Pathogens related to sewage
   b. Reduction of dissolved O_2 caused by microbial activity
   c. Clogging of their gills by solid substances
   d. Foul smell

8. UNEP founded in:
   a. 1990
   b. 1974
   c. 1972
   d. 1994

9. GEF full form:
   a. Global Environment Facility
   b. Global Environment Factor
   c. Global Essential Facility
   d. Global Essential Factor

10. Field gene bank is the most common method of conserving genetic resources with:
    a. Recalcitrant seeds
    b. Orthodox seeds
    c. Pollen grains
    d. Seeds

11. The following helps to understand the feeding relationships and the interactions between organisms in any ecosystem:
    a. Food chain
    b. Food web
    c. Ecological pyramid
    d. Ecological succession

12. The concept of ecological pyramid was developed by:
    a. Dash
    b. Charles Elton
    c. Dempster
    d. Lindman

13. The process involving energy transformation will not occur spontaneously unless there is degradation of energy is:
    a. Entropy
    b. Trophic-Dynamic concept
    c. First law of thermodynamics
    d. Second law of thermodynamics

14. The conversion of nitrogen into nitrates is called:
    a. Ammonification
    b. Nitrification
    c. Denitrification
    d. Electrochemical methods

15. Logistic model is represented by:
    a. $dN/dT = rN(K-N)/K$
    b. $dN/dT = rN$
    c. $(k-N) = rN$
    d. $dN=Dt$

16. 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

17. 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

18. 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

19. No. of quadrats in which species A occurred/total no. of quadrats examined *100?
    a. Density
    b. Relative Density
    c. Frequency
    d. Relative Frequency

20. The diagrammatic representation of phonological events is called:
    a. Phenology
    b. Phenogram
    c. Biological spectrum
    d. IVI

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(Descriptive)

Time : 2 hr. 30 mins.   Marks : 50

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

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: 5×2=10
    a) Positive interactions
    b) R and K selected species

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: 5×2=10
    a) Field gene bank
    b) Water pollution

8. What is conservation biology? Discuss in detail about International efforts and Indian initiatives for conservation.   2+8=10

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