REV-01
MSB/14/19

2024/05

SET A

M.Sc. BOTANY
FOURTH SEMESTER
PLANT ECOLOGY
MSB-401 D

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs. **Full Marks: 70**

Objective

Time: 30 mins. **Marks: 20**

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

1. Which of the following is not a characteristic of biotic community?
   a. Dominance b. Stratification
   c. Composition d. Water vapour
2. The transitional zone or junction zone between two or more diverse communities is called:
   a. Ecospecies b. Ecotone
   c. Edge effect d. Seral community
3. Raunkiaer classification of plant was given in the year:
   a. 1932 b. 1933
   c. 1934 d. 1935
4. In these plants, the buds are usually buried in the soil or in bulbs and rhizomes where food is stored to withstand long period of adverse climatic conditions:
   a. Hemicryptophytes b. Therophytes
   c. Chamaephytes d. Cryptophytes
5. Diagrammatic representation of phonological events is called:
   a. Phenology b. Phenogram
   c. Phenotrophy d. Phenoecology
6. No of individuals of a species in all quadrats/no of individuals of all species in all quadrats *100 is the formula for:
   a. RF b. RA
   c. RD d. IVI
7. It is mainly concerned with reconstructing past biota, populations, communities, landscapes, environments, and ecosystems from available geological and biological evidence:
   a. Limnology b. Ecosystem
   c. Paleoecology d. Historical data
8. The ability and rate of an ecosystem to recover from a disturbance and return to its pre-disturbed state is called:
   a. Resistance b. Resilience
   c. Ecosystem stability d. Ecosystem Tolerance
9. Which of the following is not a functional component of ecosystem?
   a. Decomposers b. Material Cycling
   c. Energy flow d. Hoeostatis

10. Which of the following is a method of measuring primary production?
    a. Light and dark bottle method
    b. Harvest method
    c. Neither a nor b
    d. Both and b

11. Which is the popular method to calculate Diversity?
    a. Shannon's index
    b. Simpson's index
    c. Similarity index
    d. Pielou's index

12. Under steady state conditions, the essential material available most closely approaching the critical minimum needed is known as:
    a. Shelford's Law of tolerance
    b. Shelford's Law of minimum
    c. Leibig's Law of tolerance
    d. Liebig's Law of minimum

13. The organisms have an ecological minimum and maximum with a range in between which represents:
    a. The limit of depth
    b. The limit of species
    c. The limit of tolerance
    d. The limit of minimum tolerance

14. Honey bees, coral reefs, phytoplankton, butterflies are the examples of:
    a. Ecological succession
    b. Ecological indicators
    c. Ecological trophic levels
    d. Ecological population

15. Ecological indicators help us determine:
    a. Ecological impact and ecological load
    b. Pattern diversity
    c. Metapopulation
    d. Pollution

16. Which one of the following is not a measure of central tendency?
    a. Mean
    b. Median
    c. Mode
    d. Standard deviation

17. The formula to calculate the mean value is given by:
    a. Mean=x1+x2+..+*xnn*
    b. Mean=x1+X2
    c. Mean=Xnm/X1+X2
    d. Mean=x1=x2/xnm

18. Consider the given dataset with the odd number of observations arranged in descending order – 23, 21, 18, 16, 15, 13, 12, 10, 9, 7, 6, 5, and 2. What will be the median no.?
    a. 13
    b. 9
    c. 10
    d. 12

19. Consider the given dataset 5, 4, 2, 3, 2, 1, 5, 4, 5. What will be the mode?
    a. 4
    b. 2
    c. 5
    d. 3

20. $\blacksquare = \sqrt{\frac{\sum |x - \mu|^2}{N}}$

    formula for calculating:
    a. Mode
    b. Median
    c. Standard deviation
    d. Standard error

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(Descriptive)

Time : 2 hr. 30 mins. **Marks : 50**

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

1.	Define Community. Describe quantitative and qualitative characteristics of community in brief with proper formula.	2+8=10
2.	Write notes on: a) Paleoecology b) Life forms and biological spectrum	5×2=10
3.	What is Ecosystem? Describe three functional component of Ecosystem with special reference to Y-shaped energy flow model.	2+8=10
4.	What is Primary productivity? Describe the different measurement methods of primary productivity for terrestrial and aquatic ecosystems.	2+8=10
5.	What is Liebig's law of the minimum? Elaborate.	2+8=10
6.	Write a note on Ecological indicators with suitable examples.	10
7.	What is Biostatistics? Describe its role in Ecology.	2+8=10
8.	Write short notes on: a) Central Tendency b) Standard deviation and standard error	5×2=10

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