

CORE-II (PRINCIPLES OF ECOLOGY)

Answer the following questions [1 marks]

1. Ecology deals with the study of:

- a) Living beings
- b) Living and non living components
- c) Reciprocal relationship between living and non living components
- d) Environment

2. Autoecology deals with

- a) Ecology of species
- b) Ecology of many species
- c) Ecology of community
- d) All the above

3. Synecology deals with

- a) Ecology of many species
- b) Ecology of many populations
- c) Ecology of community
- d) None of the above

4. Ecotype is a type of species in which environmentally induced variations are

- a) Temporary
- b) Genetically fixed
- c) Genetically not related
- d) None of the above

5. The term 'Biocoenosis' was proposed by

- a) Transley
- b) Carl Mobius
- c) Warming
- d) None of the above

6. The pyramid of energy in any ecosystem is

- a) Always upright
- b) May be upright or inverted
- c) Always inverted
- d) None of the above

7. Energy flow in ecosystem is

- a) Unidirectional
- b) Bidirectional

- c) Multidirectional
- d) None of the above

8. An ecosystem must have continuous external source of

- a) minerals
- b) energy
- c) food
- d) All of the above

9. The source of energy in an ecosystem is

- a) ATP
- b) Sunlight
- c) D.N.A
- d) R.N.A

10. Trophic levels are formed by

- a) Only plants
- b) only animals
- c) Only carnivorous
- d) Organisms linked in food chain

11. Biotic potential is counteracted by

- a) Competition with other organisms
- b) Producer is the largest
- c) Limitation of food supply
- d) None of the above

12. Definition of ecosystem is

- a) The community of organisms together with the environment in which they live
- b) The abiotic component of a habitat
- c) The part of the earth and its atmosphere which inhibits living organisms
- d) A community of organisms interacting with one another

13. In a food chain of grassland ecosystem the top consumers are

- a) Herbivorous
- b) Carnivorous
- c) Bacteria
- d) Either carnivorous or herbivorous

14. MAB stands for

- a) Man and biosphere
- b) Man, antibiotics and bacteria
- c) Man and biotic community
- d) Mayer, Anderson and Bisby

15. Species that occur in different geographical regions separated by special barrier are:

- a) Allopatric
- b) Sympatric
- c) Sibling
- d) None of the above

Answers:

1-c	2-a	3-c	4-b	5-b
6-a	7-a	8-b	9-b	10-d
11-d	12-a	13-b	14-a	15-a

Answer the following questions in 2-3 sentences [1.5 marks]

1. What is autecology?
2. What is synecology?
3. What is ecosystem?
4. Define food chain. Give its types.
5. What is Photosynthetically Active Radiation (PAR)?
6. Energy flow in ecosystem is unidirectional in nature. Explain.
7. Define ecological pyramids.
8. What are biogeochemical cycles?
9. What do you understand by population density?
10. State about fecundity tables.
11. What is age ratio and sex ratio?
12. What is species richness?
13. What is dominance in community?
14. What is diversity and abundance in a community?
15. State about vertical stratification.
16. What is ecological succession?
17. What is a climax community?
18. What is biological data?
19. Differentiate between frequency polygon and histogram.
20. What are the merits and demerits of range?

Answer the following questions in 75-100 words [2 marks]

1. Differentiate between autecology and synecology?
2. What is detritus food chain?
3. What do you understand by grazing food chain?
4. What do you know about food web?
5. What is 10% law?
6. What are the different types of ecological pyramids?
7. What is natality rate and mortality rate in population?
8. What are life tables?
9. What are survivorship curves?
10. Differentiate between exponential and logistic growth.
11. What is dispersal and dispersion?
12. What are r- strategists?
13. What are k- strategists?
14. What is ecotone and edge effect?
15. What is hypothesis testing?
16. Give some negative population interactions.
17. Give some positive population interactions.
18. Differentiate between chi-square test and t-test.

Answer the following questions in 500 words [6 marks]

1. Explain the types of ecosystem with one example in detail.
2. What is food chain? State about detritus and grazing food chain.
3. Explain linear and Y-shaped food chains.
4. Write a short note on energy flow through the ecosystem.
5. Explain nitrogen cycle.
6. What are the laws of limiting factors? Explain.
7. State about physical factors- light and temperature.
8. Write a short note on ecology in wildlife conservation and management.
9. Give the different attributes of population.
10. Explain about exponential and logistic growth. Also give the equation and patterns.
11. Differentiate between r and k strategists.
12. Give an account on population regulation.
13. Briefly describe population interactions.
14. State about Gause's principle with laboratory and field examples.
15. Give the different characteristics of a community.
16. What are the theories pertaining to climax community?
17. Explain ecological succession with one example.

18. Explain the measures of dispersion.
19. State about chi-square test and t-test.
20. What are the different measures of central tendency? Add a note on sampling techniques.