

KHAIRA COLLEGE KHAIRA, BALASORE

BOTANY QUESTION BANK

4TH SEMESTER

CC-9: ECOLOGY AND PHYTOGEOGRAPHY

1. The natural place of an organism or community is known as

1. Niche
2. Biome
3. Habitat
4. Habit

2. Which is the renewable exhaustible natural energy resource?

1. Coal
2. Petroleum
3. Kerosene
4. Biomass

3. According to Shelford's Law of Tolerance, the organisms wide environmental factor tolerance limit show

1. Narrow distribution with low population size
2. Wide distribution with high population size
3. Narrow distribution with high population size
4. Wide distribution with low population size

4. Plants growing under direct sunlight are known as

1. Heliophytes
2. Sciophytes
3. Psamophytes
4. Dicots

5. Plants growing under shade are known as

1. Psamophytes
2. Sciophytes
3. Heliophytes
4. Monocots

6. An orchid living on a tree exhibits

1. [Predator](#)
2. Mutualism
3. Commensalism
4. Parasitism

7. Which statement is correct with respect to the food chain?

1. Every component of the food chain forms a trophic level
2. Inter-relation between different food chains is known as a [food web](#)
3. All the chains formed by nutritional relations is used to understand energy flow.
4. All of the above

8. The process of vernalization is practised in

1. Cold countries
2. Hot countries
3. Only in sub-tropical countries
4. Only in tropical countries

9. Which of the following requires maximum energy?

1. Secondary consumer
2. Decomposer
3. Primary consumer
4. Primary producer

10. The bottom area where production is less than respiration in a pond ecosystem is termed as

1. Profundal zone

2. Tidal zone
3. Benthic zone
4. Limnetic zone

11. Which is not the characteristic of 'r' selected species?

1. Reproduce quickly
2. Parental care
3. A low survival rate of progenies
4. Produce a large number of progenies

12. Which is not the characteristic of a population?

1. Natality
2. Mortality
3. Stratification
4. Sex ratio

13. Lincoln index measures

1. Population mortality rate
2. Population natality rate
3. Population size
4. Population density

The correct answer is – 3. Population size.

14. Allelopathy refers to

1. Inhibition of growth of one species by another by the production of toxins
2. Inhibition of sporulation of pathogen by the host
3. Altering the reproductive cycle of one organism by another
4. Inhibition of growth of one species by another by preventing reproduction

15. The ratio between energy flow at different points in a food chain is known as

1. Ecological capacity

2. Ecological efficiency
3. Ecological assimilation
4. Ecological potential

16. The ability of a population to increase under ideal environmental conditions is called

1. Natality
2. Carrying capacity
3. Biotic potential
4. Absolute natality

17. In an ecosystem, the energy flow is always

1. Always unidirectional
2. Always bidirectional
3. In any direction
4. Always down directional

18. In thermal stratification, the middle region which shows vertical temperature change is called

1. Mesolimnion
2. Epilimnion
3. Metalimnion
4. Hypolimnion

19. Select a non-denitrifying bacteria

1. *Pseudomonas aeruginosa*
2. *Thiobacillus*
3. *Thiobacillus denitrificans*
4. *Bacillus ramosus*

20. Which one is a 'K' selected species?

1. Aspergillus
2. Human
3. Taraxacum

4. Grass

21. All species of Lemur are endemic to which area?

1. Madagascar
2. Seychelles Island
3. Galapagos Island
4. New Caledone

22. The upper part of an aquatic ecosystem contains

1. Nekton
2. Plankton
3. Benthos
4. both (1) and (2)

23. What type of food chain is it?

dead animals → blowfly maggot → maggots → frog → snake

1. Detrital food chain
2. Decomposer food chain
3. Predator food chain
4. Grazing food chain

24. Identify the mismatched pair

1. Tundra – Permafrost
2. Savanna – Acacia trees
3. Prairie – Epiphytes
4. Coniferous forest – Evergreen trees

25. “The pyramid of energy is always upright” states that

1. The energy conversion efficiency of herbivores is better than carnivores
2. The energy conversion efficiency of carnivores is better than herbivores
3. Producers have the lowest energy conversion efficiency
4. Energy conversion efficiency is the same in all trophic levels

26. The population of birds declined in an area where DDT was extensively used. Why?

1. The birds stopped laying eggs
2. The eggs laid by the birds did not hatch
3. The snakes ate the eggs
4. The DDT spray killed all the birds

27. Which of the following lake zones has phytoplanktons in abundance?

1. Littoral zone
2. Benthic zone
3. Limnetic zone
4. Profundal zone

28. Plant species with a wide range of genetic distribution evolve into a local population known as

1. Ecotype
2. Population
3. Ecosystem
4. Biome

29. dB is the abbreviation used for the quantitative expression of

1. The density of bacteria in a medium
2. A Particular Pollutant
3. Dominant Bacillus in a culture
4. A pesticide

30. The eggshell of birds becomes thin by the pollution from pesticides due to the interference in the activity of

1. Calmodulin
2. MgATPase
3. CaATPase
4. Calcium

1. Answer any ten questions from the following: $1 \times 10 = 10$

- a) What is pedogenesis?
- b) What is physiologically dry soil?
- c) What is capillary water?
- d) Distinguish between holard and chresard.
- e) Give example from each rooted submerged hydrophytes and rooted emergent hydrophytes.
- f) What is food web?
- g) Distinguish between mor and mull humus?
- h) What is aquifer?
- i) Distinguish between autecology and synecology?
- j) Define standing crop.
- k) Which pyramid of number is inverted?
- l) Define hypervolume niche.
- m) Which soil horizon is known as eluvial zone?
- n) What is meant by life form?

2. Answer the following questions (any five): $2 \times 5 = 10$

- a) Distinguish between grazing and detritus food chain?
- b) Define ecotone and edge effect.
- c) Define commensalism.
- d) Differentiate between fundamental and realized niche.
- e) Define soil profile.

- f) What is ecological efficiency?
- g) Distinguish between autogenic and allogenic succession.
- h) Write 4 adaptive features from each hydrophytes and xerophytes.
- i) What do you mean by continental drift?
- j) Distinguish between peripatric and parapatric speciation?
- k) Define biome. What type of vegetation is observed in tropical rain forests?
- l) Distinguish between r and k selected species?
- m) Write the role of decomposer in ecosystem.

3. Answer the following questions (Any two): $5 \times 2 = 10$

- a) Define community. Write the analytical and synthetic characters use in community structure.
- b) Write the steps of ecological succession. What do you mean by climax stage?
- c) Define population. Write the characteristics of population.
- d) Write the principles and models of energy flow in ecosystem.
- e) Define biogeochemical cycle. Write down the nitrogen cycle.
- f) Define endemism. Describe the theories of endemism.
- g) Write the phytogeographical divisions of India with their local vegetation.