Organisms and Populations - Exemplar Solutions

Multiple Choice Questions (MCQs)

1. Autecology is the
(a) relation of a population to its environment
(b) relation of an individual to its environment
(c) relation of a community to its environment
(d) relation of a biome to its environment
Ans. (b) relation of an individual to its environment

2. Ecotone is
(a) a polluted area
(b) the bottom of a lake
(c) a zone of transition between two communities
(d) a zone of developing community
Ans. (c) a zone of transition between two communities

3. Biosphere is
(a) a component in the ecosystem
(b) composed of the plants present in the soil
(c) life in the outer space
(d) composed of all living organisms present on earth which interact with the physical environment
Ans. (d) composed of all living organisms present on earth which interact with the physical environment

4. Ecological niche is
(a) the surface area of the ocean
(b) an ecologically adapted zone
(c) the physical position and functional role of a species within the community
(d) formed of all plants and animals living at the bottom of a lake
Ans. (c) the physical position and functional role of a species within the community

BioSmartNotes

5. According to Allen's rule, the mammals from colder climates have
(a) shorter ears and longer limbs
(b) longer ears and shorter limbs
(c) longer ears and longer limbs
(d) shorter ears and shorter limbs
Ans. (d) shorter ears and shorter limbs

6. Salt concentration (salinity) of the sea measured in parts per thousand is
(a) 10-15
(b) 30-70
(c) 0-5
(d) 30-35

Ans (d) 30-35

7. Formation of tropical forests needs mean annual temperature and mean annual precipitation as
(a) 18 - 25°C and 150 - 400 cm
(b) 5 - 15°C and 50 - 100 cm
(c) 30 - 50°C and 100 - 150 cm
(d) 5 - 15°C and 100 - 200 cm
Ans. (a) 18 - 25°C and 150 - 400 cm

8. Which of the following forest plants controls the light conditions at the ground?
(a) Lianas and climbers
(b) Shrubs
(c) Tall trees
(d) Herbs
Ans. (c) Tall trees

9. What will happen to a well-growing herbaceous plant in the forest if it is transplanted outside the forest in a park?
(a) It will grow normally
(b) It will grow well because it is planted in the same locality
(c) It may not survive because of change in its microclimate
(d) It grows very well because the plant gets more sunlight
Ans. (c) It may not survive because of change in its microclimate

10. If a population of 50 Paramecium present in a pool increases to 150 after an hour, what would be the growth rate of population?
(a) 50 per hour
(b) 200 per hour
(c) 5 per hour
(d) 100 per hour
Ans. (d) 100 per hour

11. What would be the per cent growth or birth rate per individual per hour for the same population mentioned in the previous question (Question 10)?
(a) 100
(b) 200
(c) 50
(d) 150
Ans. (b) 200

12. A population has more young individuals compared to the older individuals. What would be the status of the population after some years?
(a) It will decline
(b) It will stabilise
(c) It will increase

(d) It will first decline and then stabilise
Ans. (c) It will increase

13. What parameters are used for tiger census in our country's national parks and sanctuaries?
(a) Pug marks only
(b) Pug marks and faecal pellets
(c) Faecal pellets only
(d) Actual headcounts
Ans. (b) Pug marks and faecal pellets

14. Which of the following would necessarily decrease the density of a population in a given habitat?
(a) Natality > mortality
(b) Immigration > emigration
(c) Mortality and emigration
(d) Natality and immigration
Ans. (c) Mortality and emigration

15. A protozoan reproduces by binary fission. What will be the number of protozoans in its population after six generations?
(a) 128
(b) 24
(c) 64
(d) 32
Ans. (c) 64

16. In 2005, for each of the 14 million people present in a country, 0.028 were born and 0.008 died during the year. Using exponential equation, the number of people present in 2015 is predicted as
(a) 25 millions
(b) 17 millions
(c) 20 millions
(d) 18 millions
Ans. (b) Exponential equation

BinSmartNotes

17. Amensalism is an association between two species where
(a) One species is harmed, and other is benefitted
(b) One species is harmed, and other is unaffected
(c) One species is benefitted, and other is unaffected
(d) Both the species are harmed.
Ans. (b) one species is harmed, and other is unaffected

18. Lichens are the associations of
(a) bacteria and fungi
(b) algae and bacteria
(c) fungus and algae

(d) fungus and virus
Ans. (c) fungus and algae

19. Which of the following is a partial root parasite?
(a) Sandalwood
(b) Mistletoe
(c) Orobanche
(d) Ganoderma
Ans. (a) Sandalwood

20. Which one of the following organisms reproduces sexually only once in its lifetime?
(a) Banana plant
(b) Mango
(c) Tomato
(d) Eucalyptus
Ans. (a) Banana plant

Very Short Answer Type Questions

1. Species that can tolerate narrow range of temperature are called.....
Ans. Stenothermal Organisms
Temperature, a major abiotic factor, affects the metabolism, activity, and so many other physiological functions of the organism. Based on temperature tolerance, organisms can be classified as eurythermal and stenothermal.

- (i) Eurythermal organisms can tolerate and thrive in a wide range of temperatures.
- (ii) Stenothermal organisms tolerate only a narrow range of temperatures.

2. What are eurythermic species?
Ans. Eurythermic species are those species that possess or show a wide range of temperature tolerance.

3. Species that can tolerate wide range of salinity are called.....
Ans. Euryhaline species: Water, another major abiotic component, affects the life of organisms. The quality of water, like pH, salinity (salt concentration), is a water-related problem faced by aquatic organisms. Organisms or species that can tolerate a wide range of salinity are regarded as euryhaline species.

4. Define stenohaline species.
Ans. Stenohaline species are those species that show a narrow range of salinity tolerance.

5. What is the interaction between two species called?
Ans. The interaction between two species is called interspecific interaction. These could be beneficial, detrimental, or neutral to one of the species or both.

6. What is commensalism?
Ans. Commensalism is an interaction where one species benefits and the other is unaffected. e.g., an orchid growing as an epiphyte on a mango branch.

7. Name the association in which one species produces poisonous substance or a change in environmental conditions that is harmful to another species.
Ans. Parasitism is the association in which one species produces a poisonous substance or a change in environmental conditions that is harmful to another species. Examples are protozoans such as Amoeba and *Plasmodium vivax* that live in the human body and cause diseases.

8. What is mycorrhiza?
Ans. Mycorrhiza is a symbiotic association between a fungus and the root of higher plants like conifers, i.e., *Pinus,* and leguminous plants. Note: Fungal hyphae get protection and nourishment from their symbiont, which in turn helps in the absorption of organic solutes by higher plants.

9. Emergent land plants that can tolerate the salinities of the sea are called.
Ans. Halophytes are emergent land plants that can tolerate the salinity of the sea and are even able to maintain their water supply from the same source are called halophytes.

10. Why do high altitude areas have brighter sunlight and lower temperatures as compared to the plains?
Ans. At high altitude, the sunlight is brighter compared to the plains, it is because of the reduced distance from the sun and the particles in the free air. Similarly, lower temperatures are because of lower atmospheric pressure, which is higher in plains as compared to high altitudes.

11. What is homeostasis?
Ans. Homeostasis is the tendency of the organism to maintain a constant internal environment despite varying external environmental conditions, like temperature.

12. Define aestivation.
Ans. Aestivation is a behavioural adaptation to avoid extreme heat and dessication in the summer season. In which the organism slows down its metabolic activities.
It is also known as summer sleep.

13. What is diapause and its significance?
Ans. It is a stage of suspended development that some organisms, like zooplanktons in lakes and ponds, adopt to survive under unfavourable conditions.

BiosmartNotes

14. What would be the growth rate pattern, when the resources are unlimited?
Ans. In the case of unlimited resources, the pattern of growth rate is exponential.

15. What are the organisms that feed on plant sap and other plant parts called?
Ans. The organisms that feed on plant sap and other parts of plants are termed as phytophagous.

16. What is high altitude sickness? Write its symptoms.
Ans. High altitude sickness is experienced by people going to high altitudes, where oxygen concentrations are low, and the body system reacts by developing symptoms like nausea, headache, and heart palpitations.

17. Give a suitable example of commensalism.
Ans. An interaction between a blue whale and the barnacle growing on its back is an example of commensalism (an interspecific relation) between them.

18. Define ectoparasite and endoparasite and give suitable examples.
Ans. Ectoparasite feeds on the external surface of the host organism, e.g., Lice on humans and ticks on dogs. Many marine fish are infested with ectoparasitic copepods.
Endoparasites live inside the host body at different sites (liver, kidney, lungs, red blood cells, etc.). Such as malarial parasites, *P. vivax*, gut parasites, i.e., tapeworm.
Their morphological and anatomical features of endoparasites are greatly simplified while emphasising their reproductive potential.

19. What is brood parasitism? Explain with the help of an example.
Ans. Brood parasitism is the phenomenon in which an organism (parasite) lays eggs in the nest of another organism (host).
e.g., Cuckoo (koel) bird lays its eggs in the nest of its host and lets the host incubate them. The eggs of the parasitic bird resemble the host's egg in size and colour to reduce the chances of the host bird detecting the foreign eggs and ejecting them from the nest.

Short Answer Type Questions

1. Why are coral reefs not found in the regions from West Bengal to Andhra Pradesh, but are found in Tamil Nadu and on the east coast of India?
Ans. Coral reefs are found in zones with high salt concentration (salinity), optimal temperature, and with less saline conditions, which fairly facilitate the colonisation of corals. In case of high siltation and water flow, coral reefs do not colonise.

2. If a freshwater fish is placed in an aquarium containing seawater, will the fish be able to survive? Explain, giving reasons.
Ans. No, a freshwater fish placed in the aquarium containing seawater will not be able to survive. Because its body system is adapted to function normally in a narrow range of salinity and it cannot survive in the high salinity of seawater.

3. Why do all the freshwater organisms have contractile vacuoles, whereas majority of marine organisms lack them?
Ans. The contractile vacuole helps in osmoregulation. Because the cellular environment of a freshwater organism is hypertonic, the water diffuses inside the cell constantly and gets collected in the contractile vacuole, which squeezes the extra water out of the cell periodically. Thus, keeping the internal environment constant. While in the case of marine organisms, this does not occur due to high salinity, therefore no need for a contractile vacuole.

4. Define heliophytes and sciophytes. Name a plant from your locality that is either heliophyte or sciophyte.

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Ans. Plants growing well in bright sunlight or favouring bright light are called heliophytes or sun plants. While those plants that require low intensity of light or partial shade for growing are termed as shade-loving plants or sciophytes.

5. Why do submerged plants receive weaker illumination than exposed floating plants in a lake?
Ans. Submerged plants receive weaker illumination than exposed floating plants in a lake because not all colours of the visible components of the spectrum of light do not enter or penetrate the depths of water.

6. In a seashore, the benthic animals live in sandy, muddy, and rocky substrata and accordingly developed the following adaptations.
(a) Burrowing
(b) Building cubes
(c) Holdfasts/peduncle
Find the suitable substratum against each adaptation.
Ans. In a seashore, water currents restrict the distribution of organisms. In streamed areas of the ocean, animals are strong swimmers or possess attaching organs such as a peduncle, or live under stones, in burrows, etc.
Burrowing animals like tubeworms, Nerlies are strong swimmers. Burrowing, building cubes, and holdfast or penduncle adaptations are found in sandy, muddy, and rocky substrata, respectively.

7. Categorise the following plants into hydrophytes, halophytes, mesophytes, and xerophytes. Give reasons for your answers.
(a) Salvinia
(b) Opuntia
(c) Rhizophora
(d) Mangifera
Ans.

- (a) Salvinia is a hydrophyte – Partially or completely submerged in water.
- (b) Opuntia is a xerophyte – Dry habitat succulent leaves.
- (c) Rhizophora is a halophyte – Saline habitat
- (d) Mangifera is a mesophyte – Terrestrial habitat.

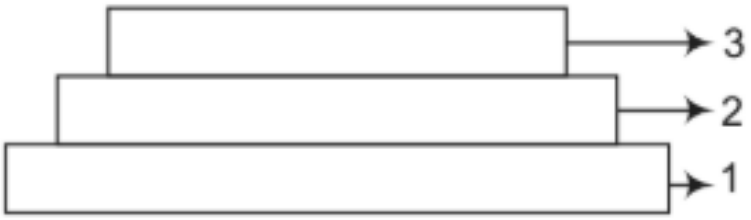
8. In a pond, we see plants which are free-floating, rooted-submerged, rooted-emergent rooted with floating leaves. Write the type of plants against each of them.
(a) *Hydrilla*
(b) *Typha*
(c) *Nymphaea*
(d) *Lemna*
(e) *Vallisneria*
Ans.

- (a) *Hydrilla* is a submerged hydrophyte
- (b) *Typha* is a rooted emergent
- (c) *Nymphaea* is rooted with floating leaves
- (d) *Lemna* is free free-floating hydrophyte
- (e) *Vallisnaria* is a rooted submerged hydrophyte.

9. The density of a population in a habitat per unit area is measured in different units. Write the unit of measurement against the following
(a) Bacteria .....
(b) Banyan .....
(c) Deer .....
(d) Fish .....
Ans. The density of population per unit area is measured in the following units

- (a) The density of a bacterial population in a habitat per unit area is measured in volume/number unit.
- (b) Biomass/area/region is a measuring unit for the density of the population of banyan.
- (c) Number/area is a measuring unit for the density of the population of deer.
- (d) Weight/area is a measuring unit for the density of the population of fish.

10.



(a) Label the three tiers 1, 2, 3 given in the above age pyramid.
(b) What type of population growth is represented by the above age pyramid?
Ans.

- (a) The three tiers are to be labelled as
  - (i) Pre-reproductive phase
  - (ii) Reproductive phase
  - (iii) Post-reproductive phase
- (b) The given age pyramid represents the expanding type of population growth.

11. In an association of two animal species, one is a termite which feeds on wood and the other is a protozoan, Trichonympha present in the gut of the termite. What type of association they establish?
Ans. The termite provides shelter and space for the protozoan Trichonympha to live. The Protozoa present in the gut digest the wood, which termite feeds upon. In the absence of Trichonympha, the termite is unable to digest wood and hence dies. Thus, the association of two given animal species represents mutualism.

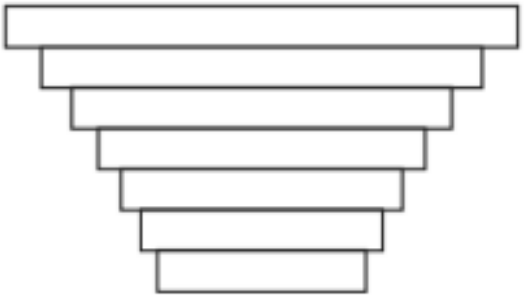
12. Lianas are vascular plants rooted in the ground and maintain erectness of their stem by making use of other trees for support. They do not maintain direct relation with those trees. Discuss the type of association the lianas have with the trees.
Ans. The type of association the lianas have with the trees is commensalism because the plant gets the support of the tree without harming or providing any benefit to the tree.

13. Give the scientific names of any two microorganisms inhabiting the human intestine.

Ans. The scientific names of two microorganisms inhabiting the human intestine are *Escherichia coli* and *Lactobacillus*.

14. What is a tree line?
Ans. The tree line is the edge of the habitat where trees are capable of growing. Due to environmental conditions such as cold temperature, high altitude, or lack of moisture, the trees are not found beyond this line, and if found, show stunted growth or form low-density matted bushes.

15. Define 'zero population growth rate'. Draw an age pyramid for the same.
Ans. When the pre-reproductive age group individuals are comparatively fewer and both reproductive and post-reproductive stages are almost in equal stage, i.e., at the same level. It is a zero population growth rate. An inverted bell-shaped age pyramid is obtained for a zero population growth rate.



16. List any four characters that are employed in human population census.
Ans. A population has the following characteristics that are employed inthe human population census.

- (i) Natality and mortality
- (ii) Sex ratio
- (iii) Population density
- (iv) Age distribution
- (v) Population growth

17. Give one example for each of the following types
(a) Migratory animal
(b) Camouflaged animal
(c) Predator animal
(d) Biological control agent
(e) Phytophagous animal
(f) Chemical defense agent
Ans.

- (a) Migratory animal-American buffalo and dolphin.
- (b) Camouflaged animal-Grasshopper and chameleon.
- (c) Predator animal-Lion.
- (d) Biological control agent-Myxoma virus to kill European rabbits and Gambusia fish to check the growth of mosquito larvae.
- (e) Phytophagous animal-Insects (beetle, butterfly, etc.).
- (f) Chemical defense agent-Cardiac glycosides.

BrainSmartNotes

18. Fill in the blanks

Species A	Species B	Type of Interaction	Example
+	-	____	____
+	+	____	____
+	____	Commensalism	____

Ans.

Species A	Species B	Type of Interaction	Example
+	-	Predation	Phytophagous animals and plants.
+	+	Protocoperation	Oxpecker and black rhino
+	-	Commensalism	Sea anemone and Hermit crab

19. Observe the set of 4 figures A, B, C, and D and answer the following questions.
I. Which one of the figures shows mutualism?
II. What kind of association is shown in D?
III. Name the organisms and the association in C.
IV. What role is the insect performing in B?


Fig. (A)

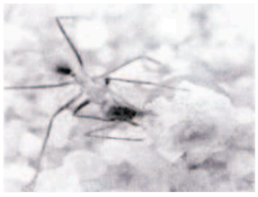


Fig. (B)


Fig. (C)

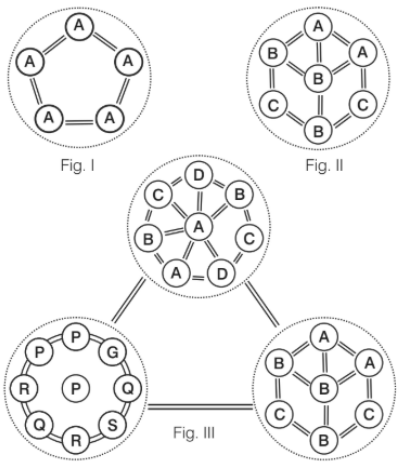

Fig. (D)

Ans.

- I. Figure A shows a pollinator (bee) on a flower. The association between a pollinator insect and a plant is termed mutualism.
- II. Predation.
- III. Egrets and grazing cattle are a good example of commensalism.
- IV. Scavenging- The insect is playing the role of a scavenger.

Long Answer Type Questions

1. Comment on the following figure: I, II, and III, A, B, C, D, G, P, Q, R, S are species.



Ans.

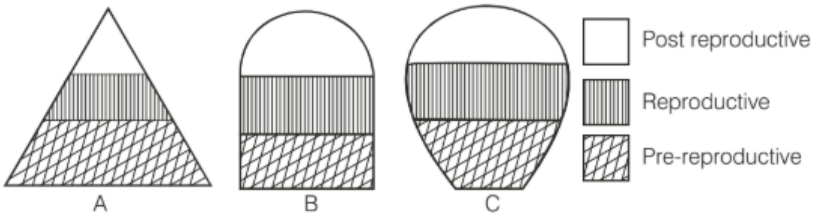
- Figure I: It is a single population and all individuals are of the same species, i.e., individuals interact among themselves and their environment in intraspecific interactions.
- Figure II: It is a community and it contains three populations of species A, B, and C. They interact with each other and their environment, and it is called interspecific interaction.
- Figure III: It is a biome. It contains three communities, of which one is in climax and the other two are in different stages of development. All three communities are in the same environment, and they interact with each other and their environment.

2. An individual and a population has certain characteristics. Name these attributes with definitions.

Ans. An individual and a population have certain attributes, like a pattern of distribution. dispersal, biotic potential, and gene pool.

- The phenomenon of distribution of individuals within geographical boundaries of the population is termed interpopulation dispersion or internal distribution patterns or dispersion.
- Dispersal: An individual is dispersed at one or another time during their life in a population, which is revealed by immigration or emigration.
    - (i) Immigration is the number of individuals of the same species that have come into the habitat from elsewhere during a specified time period.
    - (ii) Emigration is the number of individuals of the population who exit or leave the habitat and go elsewhere during a specified time period.
- Biotic Potential: Biotic potential is the natural capacity of a population to increase its size under ideal environmental conditions.
- Gene pool: All the genotypes of all individuals in a breeding population are referred to as the gene pool.

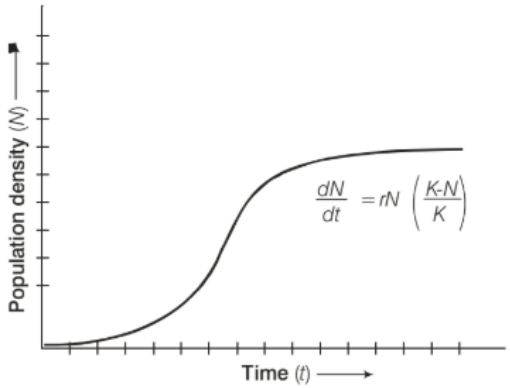
3. The following diagrams are the age pyramids of different populations. Comment on the status of these populations.



Ans.

- Figure A: It is a 'pyramid' shaped age pyramid. In this figure, the base, i.e., pre-reproductive stage, is very large as compared with the reproductive and post-reproductive stages of the population. This type of age structure indicates that the population would increase rapidly.
- Figure B: It is an 'inverted bell' shaped pyramid. In this figure, the pre-reproductive and reproductive stages are the same. This type of age structure indicates that the population is stable.
- Figure C: It is a 'urn' shaped pyramid. In this figure, the pre-reproductive and reproductive stages are fewer than the post-reproductive stages of this population. In this population, more older people are present. This type of age structure indicates that the population is definitely declining.

4. Comment on the growth curve given below.



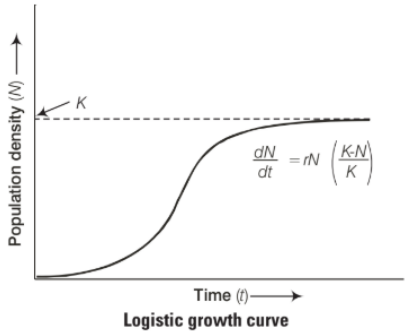
Ans. The growth curve shown above is a logistic growth curve or S-shaped curve. The logistic growth curve is considered more realistic because unlimited resources are not available in an ecosystem or in a habitat, where

- K stands for carrying capacity.
- N–indicates population density, which is the number of species of a population per unit area.
- r–is for the intrinsic rate of natural increase.

5. A population of Paramecium caudatum was grown in a culture medium. After 5 days, the culture medium became overcrowded with Paramecium and had depleted nutrients. What will happen to the population, and what type of growth curve will the population attain? Draw the growth curve.
Ans. Initially, after a lag phase, the population will grow in an exponential manner as the nutrients and space will be abundant. When the food sources get depleted, the population density starts decreasing and ends in an asymptote phase, then the population density reaches the carrying capacity (maximum number of individuals of a population or species that a given environment can sustain indefinitely).
The population shows a pattern of logistic growth, giving an S-shaped curve.
Where

- K = carrying capacity

- N = population density at time ‘t’
- r = Intrinsic rate of natural increase



Logistic growth curve

6. Discuss the various types of positive interactions between species.

Ans. The interspecific interactions are of three types: positive or beneficial, negative or antagonistic, and neutral interactions.

Some positive interactions are scavenging, commensalism, protocooperation, and mutualism.

- Mutualism. This interaction confers benefits on both the interacting species, e.g.,
    - (i) Lichens represent an intimate mutualistic relationship between a fungus and photosynthesising algae or cyanobacteria.
    - (ii) The mycorrhizae are associations between fungi and the roots of higher plants. The fungi help the plant in the absorption of essential nutrients from the soil, while the plant, in turn, provides the fungi with energy-yielding carbohydrates.
    - (iii) Plants offer nectar, juicy and nutritious fruits to animals that help pollinate their flowers and disperse their seeds.
- Commensalism: This is the interaction in which one species benefits without affecting the other.
    - (i) An orchid growing as an epiphyte on a mango branch.
    - (ii) Barnacles growing on the back of a whale.
    - (iii) The cattle egret forages close to the cattle that stir up and flush out insects from the vegetation.
    - (iv) Sea anemone that has stinging tentacles and the clown fish that lives among them to get protection from predators.
- Scavenging is the act of feeding by scavengers like bacteria, fungi on the remains of dead animals.
- Protocooperation is a type of relationship in which both partners mutually obtain benefits.
- But they associate purely to benefit from each other and can live without each other.

7. In an aquarium, two herbivorous species of fish are living together and feeding on phytoplankton. As per the Gause’s principle, one of the species is to be eliminated in due course of time, but both are surviving well in the aquarium. Give possible reasons.

Ans. Competition is a rivalry relationship between two or more organisms. A competition between individuals of the same species (intraspecific) is more acute than the competition between individuals of different species, as all the members in an intraspecific competition have the same basic requirements, like food, water, light, space, mating, and shelter. But this is true only when resources are limited. According to Gause's principle, one of the species is to be eliminated.

But studies recently have revealed that species facing intraspecific competition may evolve mechanisms to encourage co-existence rather than exclusion. This can also be done by a method known as ‘ resource partitioning’.

8. While living in and on the host species, the animal parasite has evolved certain adaptations. Describe these adaptations with examples.

Ans. Parasites have evolved special adaptations such as

- (i) The loss of unnecessary sense organs, as in lice, mites, and fleas don't have wings.
- (ii) Presence of adhesive organs or suckers to cling to the host in tapeworms and leeches.
- (iii) Loss of digestive system, i.e.. ., tapeworm.
- (iv) High reproductive capacity, i.e.. ., roundworm produces large progeny.

9. Do you agree that regional and local variations exist within each biome? Substantiate your answer with suitable example.

Ans. A biome can be defined as a large community of the world, and shows that areas with similar climate have communities of the same type. Climate is the main factor that determines the type of soil, which in turn determines the type of vegetation. The type of vegetation and climate together determine the kind of microorganisms and animals.

The other determining factors are latitude and altitude, intensity and duration of winter and summer days, water mass, and topography. The main biome of the world does not show the boundary of any country, and regional and local variations exist in each biome. e.g., temperate deciduous forests receive an annual precipitation between 75-150 cm, and tropical rain forests show a rainfall above 140 cm/yr, which may reach up to 400 cm/yr.

10. Which element is responsible for causing soil salinity? At what concentration does the soil become saline?

Ans. Soil salinity is the salt content in soil, which is caused by improper irrigation. The process of increasing salt content is termed salinisation.

Causes of Soil Salinity

- The high salt concentration of soil is caused by an improper irrigation method from a salt-laden water table.
- When salt concentration in the soil is increased, it accumulates due to evaporation.
- Human activities like fertilising crops are also responsible for the salinity of the soil.
- As fertilisers contain potassium, which can form a naturally occurring salt-sylvite. Salinity of soil degrades soil and vegetation.
- Normally, the pH value of soil ranges between 2.2-9.7, above which the soil is degraded by salt content.

11. Does light factor affect the distribution of organisms? Write a brief note giving suitable examples of either plants or animals.

Ans. Plants require sunlight for photosynthesis. Therefore, light is an important factor that affects the distribution of plants. e.g.,

- (i) Many species of small plants (herbs and shrubs) growing in forests are adapted to photosynthesise optimally under very low light conditions, so they will be seen distributed in shady areas under tall, canopied trees.

- (ii) Many plants in the shade will grow vertically to gain access to light. These plants will appear to have smaller leaves and smaller than others of the same species of the same age found in conditions with better sunlight.
- (iii) Large-sized trees will be present in areas that get abundant sunlight.
- (iv) Plants dependent on sunlight to meet their photoperiodic requirements for flowering will try to be distributed in areas where this requirement is met for their reproductive success.

12. Give one example for each of the following
I. Eurythermal plant species .....
II. A hot water spring organism .....
III. An organism seen in deep ocean trenches .....
IV. An organism seen in the compost pit .....
V. A parasitic angiosperm .....
VI. A stenothermal plant species .....
VII. Soil organism .....
VIII. A benthic animal .....
IX. Antifreeze compound seen in Antarctic fish.....
X. An organism which can conform.....
Ans.

- I. Mango, *Acacia*
- II. Archaebacteria
- III. Jellyfish
- IV. Earthworm
- V. *Cuscuta*
- VI. *Cocos nucifera*
- VII. Bacteria
- VIII. Octopus
- IX. Salt content (osmotic regulation)
- X. All plants and fish like large-mouth bass (temperature conformer)

BioSmartNotes