



UNIQUE STUDY POINT

The Living Organisms and their Surroundings

Question 1: What is Habitat?

Answer: Habitat means a dwelling place (a home). The surroundings where organisms live is called a habitat. Different plants and animals live in different habitats. For example, the habitat of a frog species is fresh water, while the habitat of a camel is a desert.

Question 2: How are cactus adapted to survive in a desert?

Answer: Adaptation of cactus are as follows

- Leaf is replaced by spine to reduce transpiration
- Stems carry out photosynthesis
- A thick waxy layer surrounds leaf to retain water
- Roots of cactus are deeply rooted inside soil to absorb water

Question 3: Fill up the blanks

(a) The presence of specific features, which enable a plant or an animal to live in a particular habitat, is called _____.

(b) The habitats of plants and animals that live on land are called _____ habitat.

(c) The habitats of plants and animals that live in water are called _____ habitat.

(d) Soil, water, and air are _____ factors of a habitat.

(e) Changes in our surrounding that makes us respond to them are called _____.

Answer: (a) The presence of specific features, which enable a plant or an animal to live in a particular habitat, is called **adaptation**.

(b) The habitats of the plants and animals that live on land are called **terrestrial** habitat.

(c) The habitats of plants and animals that live in water are called **aquatic** habitat.

(d) Soil, water and air are the **abiotic** factors of a habitat.

(e) Changes in our surroundings that make us respond to them, are called **stimuli**.

Question 4: Which of the things in the following list are non-living?

Plough, Mushroom, Sewing machine, Radio, Boat, Water hyacinth, Earthworm.

Answer: Plough, sewing machine, Radio and Boat are nonliving things

Question 5: Give an example of a non-living thing, which shows any two characteristics of living things.

Answer: Bus and Machine both shows movement and consume energy.

Question 6: Which of the non-living things listed below, were once part of a living thing? Butter, Leather, Soil, Wool, Electric bulb, Cooking oil, Salt, Apple, Rubber.

Answer: Butter, Leather, Wool, Cooking oil, Apple and rubber were once part of a living thing.

Question 7: List the common characteristics of the living things.

Answer: Some common characteristics of living things are that they

- (a) require food
- (b) respire and excrete waste material
- (c) respond to stimuli in their environment
- (d) reproduce to maintain their number
- (e) move from one place to another
- (f) grow and die

Question 8: Explain, why speed is important for survival in the grasslands for animals that live there. (Hint: There are few trees or places for animals to hide in grasslands habitats).

Answer: In grasslands, there are very few trees to hide for animals from predators like lion and tiger. In small grasses, predators can easily locate their prey. So, these animals have to run fast to reach a safe place and escape from their predators. Thus, speed is important for survival in the grasslands for animals that live there.

Short Type Questions and Answers

Question 1. Name some plants which live in dry areas.

Answer: Plants like cactus, munj, kaner, accacia (keekar), seesam, etc., live in dry areas.

Question 2. Mention a few aquatic plants found in a pond.

Answer: Water hyacinth, hydrilla, spirogyra, water lily, lotus, lemna, etc.

Question 3. Name the places of living of following plants:

1. Cactus
2. Hydrilla

Answer:

1. Cactus: Desert
2. Hydrilla: Pond.

Question 4. What is adaptation?

Answer: The change in specific features or certain habits, which enables a plant or an animal to live in its surroundings is called adaptation.

Question 5. What is habitat?

Answer: The surrounding where organisms survive, flourish and reproduce is called a habitat.

Question 6. What are aquatic habitats?

Answer: Habitats of plants and animals that live in water are called aquatic habitat. '

Question 7. What are terrestrial habitats? Give examples.

Answer: The plants and animals that live on land are said to live in terrestrial habitats. ' For example, forests, grasslands, deserts, coastal and mountain region.

Question 8. What are biotic components?

Answer: The living things such as plants and animals in a habitat are its biotic components.

Question 9. Explain abiotic components.

Answer: Various non-living things such as rocks, soil, air and water in a habitat constitute its abiotic components.

Question 10. Define ecology.

Answer: The study of relationship between living organisms and their surroundings is called ecology.

Question 11. Why does a fish have slippery scales on its body?

Answer: A fish has slippery scales on its body. These scales protect the fish and also help in easy movement through water.

Question 12. Out of desert and aquatic plants, whose roots are almost absent?

Answer: Aquatic plants.

Question 13. Mountain is special terrestrial habitat where temperature is very low and most of the areas are covered with snow. What is flora and fauna of this habitat at higher altitudes?

Answer: Flora: Grasses, mosses and lichens.

Fauna: Snow bear, fox, water fowl, musk deer, wolf.

Snow leopards, yak and mountain goats.

Question 14. Why do camels have long legs?

Answer: Long legs of camels help them to lift their body above the ground. Thus, they are able to avoid direct contact with the hot ground.

Question 15. What are nocturnal animals? Give two examples of nocturnal animals.

Answer: Some animals are active during night time. These are called nocturnal animals. e.g., bats, cockroaches and owls.

Question 16. If strong winds blow only in one direction, what will be the effect on trees?

Answer: Trees will bend in direction of wind and attain typical shape.

Question 17. Why head and snout of snake is tapering?

Answer: It is adapted to burrowing and digging habit.

Question 18. Which plants have leaves without pores?

Answer: Underwater plants.

Question 19. Plants in hilly areas have to bear high speed winds and cold. Which adaptation best helps them to face such conditions?

Answer: Tall, thin and straight trunk with needle-shaped leaves.

Question 20. Give one example of

1. free floating plant
2. plants without root.

Answer:

1. Lotus
2. Ceratophyllum.

Question 21. Name the respiratory organ in

1. terrestrial animals
2. aquatic animals (fish)

Answer:

1. Lungs
2. Gills.

Question 22. How do the skins of animals living in cold places protect them from cold conditions?

Answer: The skin of animals like walrus, seals and penguins are thick and protect them from cold. Another way of protection from cold is by having thick fur.

Question 23. What is the adaptation mechanism of chameleon?

Answer: It changes its colours to suit with its surroundings.

Question 24. What do you mean by camouflage?

Answer: Camouflage is the ability of an organism to blend in with its surroundings.

Question 25. What is known as 'Lungs of the world'?

Answer: Amazon Rainforest is known as 'Lungs of the world'.

Question 26. What are blowholes?

Answer: The organs by which dolphin or whales breathe are called blowholes or nostrils.

Question 27. Differentiate between diurnal and nocturnal animals.

Answer: Diurnal animals: Animals which are active during the day time.

Nocturnal animals: Some animals like earthworms and cockroaches are active at night.

Question 28. Define predators and prey.

Answer: Predators: The animals which kill other animals for their food are called predators. Prey: The animals which are killed by predators for their food are called prey.

Question 29. Indicate which of the following are living and which are non-living: buffalo, grass, grasshopper, table, aeroplane, pencil, bicycle, crow, banyan tree.

Answer: Living things:

1. Buffalo
2. Grass
3. Grasshopper
4. Crow
5. Banyan

Non-living things:

1. Table
2. Aeroplane
3. Pencil
4. Bicycle
5. tree

Question 30. Name any four single-celled living organisms.

Answer:

1. Amoeba
2. Paramecium
3. Bacteria and
4. Yeast.

Question 31. What is reproduction?

Answer: It is a process by which living organism gives birth to the next generation of its own kind.

Question 32. What are the different types of reproduction?

Answer:

1. Asexual reproduction.
2. Sexual reproduction.

Question 33. What do you mean by vegetative propagation in plants?

Answer: It is a process of growing plants from any vegetative part of plant like leaf, stem, root, etc.

Question 34. Name the organs which are used by following animals for walking:

Birds, Fish, Horse

Answer:

Names of the animal	Organ used for locomotion
1. Birds	Wings
2. Fish	Fins
3. Horse	Limbs

Question 35. Name the type of locomotion in following animals:

fish, earthworm, cow, birds, frog

Answer:

Names of the animal	Type of locomotion
1. Fish	Swimming
2. Earthworm	Crawling
3. Cow	Walking
4. Birds	Flying
5. Frog	Jumping

Question 36. Why bacteria and viruses are considered as 'Immortal'?

Answer: Bacteria and viruses neither grow old nor die. Their growth remains continued for ever. They may survive a million years or even more if frozen or buried under salt. If they are buried in non-living environment, they stop growing but do not die. Whenever they get favourable conditions, they start growing again. Hence they are considered as 'immortal'.

Question 37. What is stimulus?

Answer: The change in environment that makes an organism to react or produce a change in its activities is called stimulus.

Question 38. What is the role of decomposers?

Answer: Decomposers maintain the balance of nutrients in the soil by decomposing dead plants and animals present in the soil. Hence, it is clear that the biotic and abiotic components of nature are interdependent.

Question 39. Write the differences between respiration and breathing.

Answer: Respiration: It is the process through which living things utilise oxygen to release the energy stored in food they eat.

Breathing: During breathing, when we inhale, air rich in oxygen moves from outside of our body to inside. When we breathe out, the air rich in carbon dioxide moves from inside of our body to outside.

Question 40. Differentiate between locomotion and movement.

Answer: Locomotion: It is the movement of an organism, bodily from one place to another. It involves the whole body as in walking, running, etc.

Movement: It is the change in the position of any part of the body with respect to its axis, e.g., shaking of head.

Question 41. What do you mean by acclimatisation?

Answer: Acclimatisation refers to the small changes in an organism over a short period to adjust to a new surrounding.

Question 42. What kind of movement do we see in plants?

Answer:

- Opening and closing of a flower.
- Growth of a stem and leaves.
- Movement of water, minerals, food from one part of the plant to another.
- Movement of stem towards sunlight and root towards water in soil.

Long Type Questions and Answers

Question 1. Visit a pond and make a list of animals found inside the water.

Answer: The animals like frogs, fish, molluscs and certain insects are found inside the water. Protozoans like amoeba and turtles, water spiders, water skaters, dragon flies, king fishers, ducks and many other types of animals are inhabiting the ponds.

Question 2. Give three main adaptive features in desert plant.

Answer:

- Well-developed root systems.
- Leaves are either very small or converted to spines.
- Stem is green and fleshy in some plants.

Question 3. What adaptation of desert animals protect themselves from deficiency of water?

Answer: Animals living in hot places such as desert, for example, snakes, desert rats and lizards are not able to get sufficient water. So these animals have thick skin, which prevents evaporation. Since they do not sweat, they can survive without water for longer period.

Question 4. What is the ultimate source of energy for every ecosystem? Which biotic component can trap solar energy and how?

Answer: Sun is the ultimate source of energy. Green plants are capable to trap solar energy by leaves in the process called photosynthesis, using water and CO₂ in the presence of sunlight.

Question 5. How is a fish adapted to live in water?

Answer: Fish has the following adaptations to live in water:

- In all the fish, the head and tail portions are smaller than the middle portion, that is, the body tapers at both the ends. This shape of the body provides least resistance to the fish when they swim in water.
- Skin of fish is covered with scales. These scales are slippery, the slippery scales help the fish in swimming.
- We have lungs, which is an organ for respiration. Similarly, fish has gills for respiration. It utilises oxygen dissolved in water and releases carbon dioxide into the water.

Question 6. What is life?

Answer: It is easy to say that this object is living and this is non-living, but it is difficult to say what is life. Life is the sum total of all the activities shown by a living object and the activities taking place inside its body.

Thus life is the process seen only in living objects in the form of growth, movement, feeding or eating, sensitivity, respiration, excretion and reproduction.

Question 7. List the important characteristics of living things, which differentiate them from non-living things.

Answer:

living things	Non-living things
1. Living things need food, air and water.	1. Non-living things do not need food, air or water.
2. Living things grow.	2. Non-living things do not grow.
3. Living things can move on their own.	3. Non-living things cannot move on their own.
4. Living things are sensitive. They respond to changes around them.	4. Non-living things are not sensitive. They do not respond to changes around them.
5. Living things reproduce themselves.	5. Non-living things do not reproduce.
6. Living things respire. They release energy from food.	6. Non-living things do not respire.
7. Living things excrete. They get rid of waste materials from their body.	7. Non-living things do not excrete.
8. Living things have a definite life span.	8. Non-living things exist for ever.
9. Living things are made up of living cells.	9. Non-living things are made up of molecules.

Question 8. What are the main characteristics of living objects?

Answer:

- Living objects need water, air and food for their survival.
- They show feeding, movement, respiration, excretion, growth, sensitivity and reproduction.
- They have a definite life span.
- All living things are made up of cells.

Question 9. What do you understand by life cycle and life span of a living thing?

Answer: Life cycle: Life cycle is the series of changes in the life of an organism including reproduction. All the living things have a life cycle. The single cell or unicellular organisms, change into multicellular organism. The multicellular organisms also start their life from a single cell.

Life span: All the living things start their lives from birth. These living things grow into adults, remain alive for a certain period of time and finally die. The time period for which living things remain alive is called its life span. All the living things have a definite life span.

Question 10. "All living things respond to external stimuli." Explain.

Answer: All living things respond to changes in their surroundings. These changes which they respond to, are called stimuli. The living things show response to stimuli such as heat, light, touch, sound, smell, taste, etc. The response of living things is usually in the form of some movement of their body part. Plants also perform movement, though at a slow rate. For example, chhui-mui, kachhan flowers of lotus and water lily show such type of activity. So all living things (animals and plants) respond to external stimuli.

Question 11. Match the following items given in Column A with that in Column B:

Column A	Column B
(a) Bird	Nocturnal
(b) Cat	(ii) Have no eyes
(c) Hydrilla	(iii) Volant adaptation
(d) Whale	(iv) Terrestrial
(e) Cactus	(v) Found on mountain
(f) Snow bear	(vi) Aquatic plant
(g) Camel	(vii) Desert plant
(h) Proteus	(viii) Desert adaptation
(i) Amblyopsis	(ix) Aquatic adaptation
(j) Cockroach	(x) Reduced eyes

Answer:

Column A	Column B
(a) Bird	(iii) Volant adaptation
(b) Cat	(iv) Terrestrial
(c) Hydrilla	(vi) Aquatic plant
(d) Whale	(ix) Aquatic adaptation
(e) Cactus	(vii) Desert plant

(f) Snow bear	(v) Found on mountain
(g) Camel	(viii) Desert adaptation
(h) Proteus	(x) Reduced eyes
(i) Amblyopsis	(ii) Have no eyes
(j) Cockroach	(i) Nocturnal

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