



Class - VI Science October Month Notes

10. Habitat and Adaptations

Technical Words:

1. Adaptation - The features of an organism that make it suited to live in a particular habitat
2. Environment - The surroundings in which an animal or plant lives
3. Habitat - The place where an organism usually lives and grows in nature
4. Hibernation - A state of inactivity that some animals enter to conserve energy and survive harsh environmental conditions

A. Very short answer question.

Write the name of the habitat that these animals are found in.

1. Squids, sharks, whales, lobsters, fish, prawns

[Answer] marine

2. Camels, jack rabbits, toads, some frogs, fennec foxes

[Answer] desert

3. Snakes, chameleons, sloths, apes and jaguars

[Answer] rainforest

4. Elephants, bison, cheetahs, gazelles and lions

[Answer] grassland

5. Polar bear, reindeer, Arctic fox, snowy owl and penguin

[Answer] polar and mountain

B. Short answer question.

1. Define.

- a. biotic components
- b. abiotic components
- c. ecology

[Answer] a. Biotic components: Organisms such as plants, animals and microorganisms are the living parts of the environment, and are called its biotic components. These are grouped into three types—producers, consumers and decomposers.

b. Abiotic components: The non-living parts of the environment such as light, temperature, air, water and soil make up the abiotic components.

c. Ecology: It is the branch of science that studies the interaction between the biotic and abiotic components of the environment.

2. What kind of consumer are these animals?

- a. Deer
- b. Elephant
- c. Eagle
- d. Tiger

[Answer] a. primary

b. primary

c. secondary/tertiary

d. secondary

3. Name the different kinds of aquatic habitats.

[Answer] The different kinds of aquatic habitats are marine, coastal and freshwater habitats.

4. Name five kinds of terrestrial habitats.

[Answer] Five kinds of terrestrial habitats are desert, rainforest, grassland, polar and mountain habitats.

5. How does being nocturnal help some of the animals that live in deserts?

[Answer] Some animals in deserts are nocturnal so that they can avoid the extremely high day time temperatures and conserve water in their bodies.

6. List two adaptations that help grass to survive in grasslands.

[Answer] Two adaptations that help grass to survive in grasslands are:

- (i) Grass has long, thin leaves to reduce transpiration during the day.
- (ii) The thin leaves of the grass bend with the wind and do not break.

7. List two adaptations seen in plants growing in tundra habitat.

[Answer] Two adaptations in plants growing in tundra habitat are:

- (i) Most plants grow close to the ground as they have shallow root system because

only a thin layer of soil is available.

(ii) Most plants have smaller leaves to prevent water loss.

C. Long answer question.

1. Briefly describe some biotic and abiotic components of the environment.

[Answer] Biotic components: Organisms such as plants, animals and microorganisms are the living parts of the environment, and are called its biotic components. These components are grouped into three types—producers, consumers and decomposers.

Producers: Plants are producers or autotrophs, as they make their own food.

Consumers: All animals are consumers or heterotrophs. Herbivores are directly dependent on plants; they are called primary consumers. Carnivores feed on other animals; they are called secondary consumers. Omnivores eat both plants and other animals.

Decomposers: Fungi and bacteria break down or decompose dead plants and animals into simple substances that can be absorbed by plants again to make food.

Abiotic components: Light, temperature, air, water and soil are the non-living parts of the environment and are called its abiotic components. All the biotic components in an environment depend on the abiotic components for their own survival.

Light: The energy in sunlight is trapped by chlorophyll in plants and is used to make food.

Air: Most living things need oxygen to respire and plants also need carbon dioxide to make food. The movement of air is also used for pollination and the dispersal of seeds. Air dissolved in water helps plants and animals in aquatic habitats to live.

Water: Water plays important roles in the bodies of plants and animals. It forms an important part of cells and is a major part of the blood in animals. Blood transports nutrients, gases, wastes and so on through the body. Water transports minerals from the soil to the different parts of the plant body.

Soil: Soil contains water and nutrients, which are used by plants to make food. Animals like ants, centipedes and earthworms live in the soil. Decomposers are also found in soil.

Temperature: The Earth provides a temperature range suited to many kinds of organisms. Some plants and animals can live in cold areas, while others can live only in warm areas.

2. Describe how the characteristics of aquatic plants help them survive in water.

[Answer] Aquatic plants are either submerged in water (such as the Hydrilla) or float on the surface of water (such as water hyacinth). Some of them are attached to the soil at the bottom through short and small roots. The thin, narrow leaves (Hydrilla) or ribbon-like leaves (Vallisneria) allow the water to flow past without damaging the plants. Some plants like the water hyacinth have air-filled leaves to help the plants float. The stomata are on the upper surface of the leaves in plants like lotus and water lily to help the exchange of gases. Their leaves are also coated with a wax substance that makes water roll off them.

3. Describe the characteristics found in camels that help them survive in the desert.

[Answer] The characteristics found in camels that help them survive in the desert are as follows.

- (i) They have a high body temperature and do not sweat.
- (ii) Their dung is dry and they excrete only a very small amount of urine.
- (iii) They have long legs to keep the body away from the hot sand. They have broad feet to help them from sinking into the shifting sand.
- (iv) Their long eyelashes and eyebrows protect the eyes from flying sand.
- (v) They also have a hump that stores fat. When required, their body can breakdown this stored fat to provide energy.

4. List the characteristics found in many plants that grow in rainforests.

[Answer] The characteristics found in many plants that grow in rainforests are:

- (i) The trees grow close together and have branches that arise from the higher areas of the trunk.
- (ii) The leaves of plants in rainforests trees are large to catch the small amount of sunlight that passes through the dense growth of the higher branches. The large leaves have a waxy covering and pointed tips to let water drip off them. This keeps the leaves dry.
- (iii) Many plants grow on other plants or climb on other plants to reach the sunlight.
- (iv) The bark of trees is smooth to let water flow down easily.
- (v) The roots of the plants do not go down deep into the soil because most of the nutrients are present near the surface. The large surface of the roots grows laterally and not downwards into the soil to absorb the nutrients before they get washed away by rain. Many trees have buttress roots that help them to stand upright even during storms.

5. Describe the characteristics found in animals that live in the Polar Regions and on high mountains.

[Answer] The characteristics found in animals that live in the Polar regions and on high mountains are as follows:

- (i) Most of the animals such as the polar bear and Arctic fox that live here have thick fur to protect them from the cold.
- (ii) Some animals such as the penguins and polar bear have a thick layer of fat called blubber under the skin to keep them warm. Many polar animals have a round, plump shaped body, which helps them to conserve body heat.
- (iii) Some animals such as the Arctic hare grows white fur in winter and turn brown in summers. This helps it to blend in with the tundra habitat as to hide from enemies.
- (iv) Many animals such as the polar bear sleep through the winter months in cold regions. The long winter sleep is called hibernation. Birds such as the Siberian crane migrate to warmer areas in winter.
- (v) The thick, long coat of hair of the yak and mountain goat protects them from cold. Mountain goats and yak have strong hooves to walk on rocky slopes.

E. Image-based question.

1. List the adaptations that this animal has to live in its habitat.



Answer] A penguin has a layer of blubber under the skin to keep it warm in the Polar region. It has a round, plump shaped body, which helps it to conserve body heat. It has waterproof feathers. It has strong legs with webbed feet and paddlelike flippers to swim in ocean water. It has a long, thin beak to catch fish and squid.

Assertion and reasoning type questions

1.Assertion: Trees in tropical rainforests have broad leaves.

Reasoning: Broad leaves help trees absorb more sunlight.

Ans-A

2.Assertion: Adaptations help organisms survive in their environment.

Reasoning: All organisms adapt to their environment in the same way.

Ans- C