

PARAGON CONVENT SCHOOL

SECTOR : 24 B, CHANDIGARH

LESSON - 10

THE LIVING ORGANISMS AND THEIR SURROUNDINGS

Summary:

- All living beings are called organisms and they have characteristics which separate them from the non-living.
- Living organisms need food, they respire, grow, respond to stimuli, move, reproduce and excrete.
- Habitat is the dwelling place of an organism. There are many types of habitats on Earth.
- The changes in the body and behaviour of organisms in order to survive in their habitat are called adaptations.
- Terrestrial habitats refer to the habitats on land such as deserts, grasslands and mountains.
- Aquatic habitats refer to the marine and freshwater habitats.
- The living organisms living in a habitat are known as the biotic components of a habitat.
- The non-living things such as air, water and soil are called the abiotic components of a habitat.

Multiple Choice Questions (Page No. 125)

1. (c) 2. (d) 3. (c) 4. (d) 5 (c)

SECTION A

Oral questions

Q1.- What is a habitat?

Ans.- The place where living organisms (plants and animals) live is called habitat.

Q2.- What is meant by adaptations?

Ans.- Favourable features present in plants and animals that help them survive in a particular type of habitat are known as adaptations.

Q3.- How is cactus adapted to survive in a desert?

Ans.- Cactus survives in a desert due to its long roots, thick and fleshy stem with waxy coating and leaves reduced to spines.

Science quiz

Q1.- Name the breathing organs of the following organisms: dogs, snakes, birds and fishes.

Ans.- Dogs - lungs, birds - lungs, snakes - lungs, fish - gills.

Q2.- Name four abiotic components of a habitat.

Ans.- Sunlight, air, water, soil, temperature, wind.

Q3.- Name an animal that survives in polar region.

Ans.- Polar bear

WORKSHEET

Tick (✓) the correct options

1. (b) 2. (c) 3. (a) 4. (c) 5. (a)

Match the following

1. (b) 2. (c) 3. (a) 4. (e) 5. (d)

Fill in the blanks

1. aquatic 2. abiotic 3. fish 4. gills 5. submerged

SECTION B

Multiple Choice Questions

1. (d) 2. (c)

Very Short Answer Questions

Q1.- Name two free floating plants.

Ans.- Water hyacinth and lotus / water lily

Q2.- Write two characteristics of pine tree that help it adapt in mountains.

Ans.- Pine tree has leaves reduced to needle-like structures that help to conserve water. The pine trees are normally cone-shaped and have sloping branches. This helps the rainwater and the snow to slide off easily.

Q3.- Name two biotic component of a habitat.

Ans.- Plants and animals / human beings / microorganisms

Q4.- Name two scavengers.

Ans.- Vulture, hyena

Short Answer Questions

Q1.- Differentiate between adaptation and acclimatisation.

Ans.- Adaptation refers to changes that take place in plants and animals that help them to survive in a particular type of habitat over a long time period. But acclimatisation refers to changes in the body of organisms that take place over a short period of time to adjust in their surroundings.

Q2.- What is camouflage?

Ans.- Some animals protect themselves from their enemies by changing their skin

colour according to surroundings, therefore they get unnoticed by their enemies. This is called camouflage. E.g., the stripes of a tiger help it to hide in tall grasses.

Q3.- How is yak able to survive on mountains?

Ans.- Yaks are able to survive on mountains because they have thick fur to protect them from cold. They also have a layer of fat under their skin that keep them warm.

Q4.- A fish adapts itself to survive in water. Likewise, different animals adapt themselves to their surroundings.

a) How do animals adapt themselves to their surroundings?

b) What value do we learn from the animals that easily adapt themselves?

Ans.- (a) Animals adapt themselves to their surroundings by developing certain favourable features like modifications in their body shape, body organs, colour, behaviour, location and eating habits.

(b) From the animals we learn to adapt, i.e., adjust in all types of circumstances.

Q5.- Why do animals like yak, bear and snow leopard have thick fur?

Ans.- The thick fur of the animals like yak, bear and snow leopard protect them from cold weather conditions of the mountains where they live.

Q6.- Why does a cactus plant have long roots and leaves reduced to spines?

Ans.- The long roots of cactus plant go very deep into the soil to absorb water. The leaves of cactus are reduced to spines because that helps in reducing the loss of water through transpiration.

Q7.- How do aquatic animals breathe in water?

Ans.- Some aquatic animals like fishes breathe through gills. The gills absorb the dissolved oxygen of water. Some other aquatic animals like dolphins and whales do not have gills. They breathe through lungs. They inhale air through the nostrils that are located in the upper parts of their heads. This allows them to breathe in the air when they swim near the surface of water. Amphibians like frogs and toads breathe in water through their moist skin and on land through their lungs.

Long Answer Questions

Q1.- How do lions and deer adapt themselves to live in a forest habitat?

Ans.- Lions adapt themselves in the forest habitat in the following ways:

- (i) Lions have eyes in front that help them to see from a greater distance.
- (ii) Lions have sharp teeth and long claws in their front legs to catch and tear flesh of the prey.
- (iii) Lion have light - brown coloured skin which helps them to hide in dry grasslands.
- (iv) Lions run very fast that allows them to catch their prey.

Deer adapt themselves in the forest habitat in the following ways:

- (i) They have eyes on the sides of the head, which give them a wide range of vision.
- (ii) They have long ears to hear the movement of predators.
- (iii) They can run very fast to save themselves from predators.

Q2.- Explain how desert plants and animals are able to survive in a hot dry climate.

Ans.- Desert plants and animals show various adaptations to survive in hot climate.

Adaptations in plants :

- (i) The leaves in desert plants are either absent, very small or present in the form of spines (thorns). This helps in reducing the loss of water from the leaves.
- (ii) The stems of desert plants are thick and fleshy due to storage of water. The stems also have a thick waxy coating that prevents the loss of water from it.
- (iii) The roots of desert plants are long and go very deep into the soil to absorb water.

Adaptations in animals :

Desert animals like desert rats and desert snakes live in deep burrows that have cool and moist environment during daytime when the desert is hot and dry. At

night, when the desert is cool, the animals come out of their burrows and holes and become active. These desert animals pass out very little amount of urine and hence, conserve water in their body.

Camel, the main animal of desert, adapt in the hot dry climate in the following ways-

- (i) The camel has long legs that keep its body away from the hot sand.
- (ii) A camel can drink a large amount of water and store it in the body.
- (iii) A camel's hump has fat stored in it. It acts as a food reserve.
- (iv) A camel has large and flat feet that help it to walk easily on sand.
- (v) Its long eyelashes protect the eyes from sand.

Q3.- How is frog adapted to live both on land and in water?

Ans.- Frogs have the following adaptations to live both on land and in water.

- (i) They have webbed feet that help them swim in water.
- (ii) They have long and strong back legs that help them in hopping on the land for catching their prey.
- (iii) They breathe through lungs on land and through moist skin in water.

Q4.- Discuss about plants that adapt themselves to survive in an aquatic habitat.

Ans.- Different plants adapt themselves to live in aquatic habitat in different ways. The two common types of aquatic plants are-

(i) Free-floating plants -

- These plants float freely on water.
- In these plants, leaves are large and flat. The leaves are covered with waxy coating which makes them waterproof and protects them from the decaying effects of water.
- Stems have air spaces which enable the plants to float.

➤ For example, lotus, water lily

(ii) Submerged plants -

➤ These plants remain completely submerged in water.

➤ In submerged plants, the leaves are thin and ribbon-like. Such type of leaves allow water currents to pass through without damaging the leaves.

➤ For example, Hydrilla, Vallisneria