

Chapter 1-The Living World: Adaptations and Classification

Q.1. Find my match:

Column 'A'	Column 'B'
1. Lotus	d. Adapted to live in water
2. Aloe	c. Adapted to live in deserts
3. Cuscuta	b. Haustorial roots for absorption of food
4. Venus fly trap	a. Flower and leaves attract insects

Q.2. Read the paragraph and answer the following questions:

I am a penguin. I live in polar region covered by snow. My abdomen is white. My skin is thick with a layer of fat underneath. My body is spindle-shaped. My wings are small. My toes are webbed. We live in flocks.

Question a.

Why is my skin white and thick and why is there a thick layer of fat underneath?

Answer:

1. White skin colour camouflage with the snow so penguins cannot be easily spotted and they get protected from enemies.
2. Thick skin and thick layer of fat underneath gives them protection from severe cold.

Question b.

Why do we live in flocks sticking close to each other?

Answer:

Penguins live in flocks sticking close to each other because sticking close to each other reduce the relative area so there is least loss of heat and they get protection from cold.

Question c.

Which geographical region do I inhabit? Why?

Answer:

1. Penguins inhabit Antarctica region. Antarctica is surrounded by ocean. Climate is colder, drier and windier.
2. It does not have human population. This climate is suitable for penguins, so they inhabit Antarctica.

Question d.

Which adaptations should you have to enable you to live permanently in the polar region? Why?

Answer:

1. I should be a warm blooded animal. This should allow me to permanently live in polar region.
2. My body has to be covered with thick fur or scale so that loss of heat will be very less and I can survive in severe cold.

Q.3. Who is lying?

Question a.

Cockroach – I have five legs.

Answer:

Cockroach is lying. It has six legs.

Question b.

Hen – My toes are webbed.

Answer:

Hen is lying because hen's toes are not webbed. Duck has webbed toes.

Question c.

Cactus – My fleshy, green part is a leaf.

Answer:

Cactus is lying. It's fleshy, green part is a stem not a leaf.

4. Read each of the following statements. Write a paragraph about adaptation with reference to each statement.

Question a.

There is extreme heat in deserts.

Answer:

1. Plant's stem is fleshy, leaves get modified into thorns to reduce loss of water. Stem perform photosynthesis in the absence of leaves.
2. Animals have cushioned soles, hump, long legs and nostrils are protected by folds of skin. Eyelashes are long and thick.

Question b.

Grasslands are lush green.

Answer:

Insects like grasshoppers have green colour so they can be camouflaged amidst grasses.

Question c.

We hide.

Answer:

In equatorial region grasses are very tall, so to protect themselves animals like tiger, elephants and deer remain hidden in these tall grasses.

Question d.

We have long ears.

Answer:

It helps the animals to receive sounds from long distance, and they can protect themselves from predators.

5. Answer the following:**Question a.**

Why is the camel called the 'ship of the desert'?

Answer:

1. Camel lives in a desert easily due to following adaptations. It has long legs and cushioned soles which keep the body of camel above the sand and cushioned soles do not allow to sink in sand while walking.
2. The nostrils are protected by folds of skin.
3. The eyelashes are long and thick.
4. It has hump which stores fats so it helps camel to survive in desert for many days without food and water.

Due to above adaptations camel is used to carry people and transport goods from one place to another place in the desert. Therefore, camel is called the ship of the desert.

Question b.

How can the plants like cactus and acacia live in deserts with scarce water?

Answer:

The plants like cactus and acacia live in deserts with scarce water due to the following adaptations.

1. Leaves are like small needles or have been modified into thorns, as a result they lose very little water by evaporation.
2. The stem stores water and food so it is fleshy.
3. The stems are green as they perform photosynthesis in the absence of leaves.
4. Their roots penetrate deep into the soil in search of water.
5. There is a thick layer of a waxy substance on the stems.

Question c.

What is the inter-relationship between adaptations of organisms and their surroundings?

Answer:

1. Adaptations of organisms depend on the changes in the surroundings.
2. To adjust with those changes in the surroundings adaptation takes place gradually and continuously in organisms.
3. Changes that take place in the various organs and life processes of organisms, enable them to live, feed, reproduce to perpetuate themselves and to protect themselves from their enemies in specific surroundings, depending upon the habitat and its geographical conditions, are called adaptations.

Question d.

How are organisms classified?

Answer:

1. Different scientists have used different criteria and independently classified plants and animals.
2. A hierarchy is formed in the classification that starts with kingdom Animalia or kingdom Plantae, further groups and sub-groups are formed depending upon basic similarities and differences.
3. This is called the 'hierarchy of classification'.
4. Binomial nomenclature is used to identify each organism. Accordingly, a scientific name has been assigned to each organism.
5. It consists of two parts – first part is 'genus' and second 'species'.
6. All identified organisms have been assigned a binomial name as per the guidelines of the International code of Nomenclature. For e.g.

	Genus	Species
Mango	Mangifera	Indica
Human	Homo	Sapiens