Chapter 9

The Living Organisms Characteristics and Habitats

Introduction To Organisms

♦ Different types of living creatures that live in different regions of the world are called organisms.

♦ Everything around us whether living or non-living things is called the environment.

♦ Different organisms live in different locations. For example, camels live in the desert while goats and yak are found in mountains.

Habitat And Adaptation

♦ Habitat:

• The place where a plant or an animal lives is called its habitat. A habitat provides air, water, food, shelter, and other needs to organisms. Different types of plants and animals live in different habitats. Some examples of habitat are Mountain, grassland, desert, pond, lake, river, ocean, sea, etc.

• The entire habitat can be divided into two main groups:

(a) Terrestrial habitat:

The plant and animals which live on land are said to live in a terrestrial habitat. For example, Grasslands, deserts, forests, mountains.

(b) Aquatic habitat:

The plant and animals which live in water are said to live in an aquatic habitat. For example, Ponds, rivers, lakes, and oceans.

• Different types of plants and animals live in a habitat. The habitat includes both biotic and abiotic components of the environment.

(a) Biotic components:

The livings things in a habitat like plants and animals are its biotic (living) components.

(b) Abiotic components:

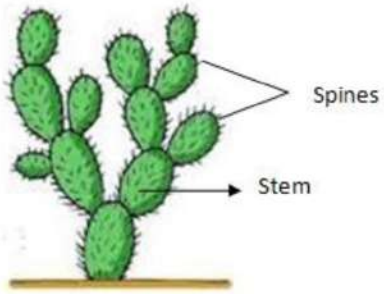
The non-living things in a habitat like rocks, soil, air, water, sunlight, etc. are its abiotic (non-living) components.

♦ **Adaptation:**

Plants and animals develop special characteristics or features in their body in order to survive in their habitat. The presence of specific features which enable a plant or an animal to live in a particular habitat is called adaptation. Adaptation of organisms differs depending on their habitat.

Adaptation in Desert Plants and Animals

♦ **Cactus:**



Cactus Plant

It is the most common plant found in the desert. A cactus has the following adaptations to survive in the hot and dry environment of a desert:

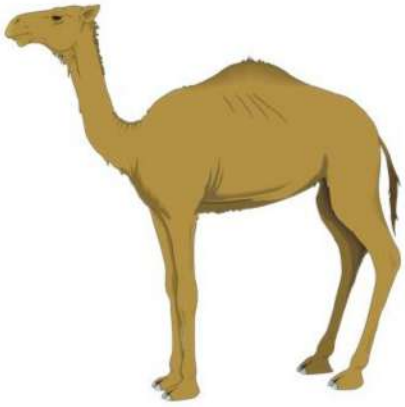
• The cactus plant has long roots to absorb water from a larger area.

• The leaves of the cactus plant are modified in the form of spines to prevent water loss through transpiration.

• Stem of the cactus plant is modified to perform photosynthesis and store water.

• The stem of the cactus plant is covered with a thick waxy layer which prevents the loss of water from it through evaporation.

♦ **Camels:**



• Camels have long legs which help to keep their bodies away from the heat of the sand.

• They can live without water for many days.

• The hump of camel stores fat so that they can live without food for many days.

• Camel can close its nostrils during a dust storm.

• They have long thick eyelashes which protect them from the sand.

Some other desert animals like rats and snakes does not have long legs like camels. So they live in deep burrows during the hot daytime. They come out of the burrows during cool night in search of food.

Adaptation in Plants and Animals of Mountain Region

♦ **Adaptation in Plants:**

Trees of a Mountain Habitat

• Trees in mountain habitats are cone-shaped and have sloping branches. This shape of the trees makes the rainwater and snow slide off easily without damaging the branches and leaves.

• The leaves of the trees are needle-like, so that the snow and rainwater slide off easily.

♦ Adaptation in Animals:

The animals in the mountain habitat are adapted to survive in extremely cold environments. The most common adaptations found in all animals living in mountains are they have thick skin or fur on their body to protect them from a cold environment by keeping them warm.

(a) Adaptation in Mountain Goat:

• They have long hair to protect them from cold and keep them warm.

• They have strong hooves (hard and rough feet of an animal) for running up the rocky slopes of mountains for grazing.

(b) Adaptation in Snow Leopard:

• They have thick skin and fur on their body, feet, and toes. It protects them from cold and keeps their body warm.

• They have a thick layer of fat under their skin which acts as an insulator.

Adaptation in Plants and Animals of Grassland

(a) Adaptation in Lion:

• They have long, strong and sharp claws in the front legs to catch their prey. The lion withdraws the claws inside the toes during walking.

• The light brown colour of the lion helps them to hide in dry grasslands when they hunt for prey.

• The lions have eyes in front of its head which allows them to have a correct idea of the location of their prey.

(b) Adaptation in Deer:

• Deer has strong teeth for chewing hard stems of plants in the forest.

• Deer has long ears for good hearing.

• Deer has eyes on the side of its head which allows them to look in all directions for danger.

• Deer has long legs which help them to run very fast to escape from their predators.

• Deer has a brown color which helps them to hide in dry grassland.

Adaptation in Plants and Animals of Aquatic Habitat

♦ **Adaptation in Aquatic Animals:**

(a) Adaptation in Fish:

• They have a streamlined body which helps them to move easily in water.

• They have special organs called gills to breathe in water.

• They have slippery scales on their bodies which protect their body and help in easy movement through the water.

• They have flat fins which help them to keep a balance of their body

• Tail helps in changing the direction.

(b) Adaptation in Dolphins and Whales:

• Dolphins and whales breathe in air through nostrils (blowholes) which are located on the upper part of their heads. This allows them to breathe in the air when they swim near the surface of the water.

• They can stay inside the water for a long time without breathing.

• They come out to the surface from time to time, to breathe in air.

(c) Adaptation in Frogs:

• Frogs are adapted to live in water and as well as on land because they have gills to breathe in water and lungs to breathe on land.

• Frog spends most of their time on land but come back to the water to lay their eggs.

• Frogs have webbed feet which help them to swim in the water.

(d) Adaptation in Squids and Octopus:

• Squids and Octopus do not have streamlined bodies.

• They stay deeper in the ocean, near the seabed, and catch any prey that moves towards them.

♦ Adaptation in Aquatic Plants:

• Short and small roots are the adaptation of aquatic habitat. The main function of the root is to hold the plant in place.

• Stems are long, hollow, and light.

• Leaves of submerged plants are narrow and thin which allows water to pass through them easily.

Characteristics Of Organisms

The characteristics of living things are:

• Living things need food, air, and water.

• Living things can move.

• Living things can grow.

• Living things can respond to stimuli

• Living things can respire.

• Living things can excrete.

• Living things can reproduce (give birth to their young ones).

• Living things have a definite life-span.