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The Living Organisms and Their Surroundings

Lesson at a Glance

- **Habitat:** The surroundings or place where organisms live is called their *habitat*. They depend for their food, water, air, shelter and other needs on their habitat.
- **Terrestrial Habitats:** The habitats of the plants and animals that live on land are called *terrestrial habitats*.
- **Aquatic Habitats:** The habitats of plants and animals that live in water are called *aquatic habitats*.
- **Biotic component:** The living things such as plants and animals in a habitat are called *biotic components*.
- **Abiotic component:** Various non-living things such as rock, soil, air and water in the habitat are called *abiotic components*.
- **Xerophytes:** The plants which grow in deserts or in very dry places where there is scarcity of water are called xerophytes. For example, cactus, agave, asparagms are xerophytic plants.
- **Aerial (Volant) Habitats:** The habitats of animals that live in air for most of the time are called aerial habitats, e.g. birds.
- **Adaptation:** The presence of specific features in the body which help a plant or animal to live or survive is called *adaptation*.
Example: Camel is adapted to live in desert condition. Snow leopards, yak and mountain goats are adapted to live in mountain habitats.
- **Movement:** Change in the position from one place to other is called *movement*.
- **Respiration:** It is a process in which food taken by an organism combines with oxygen to release energy. In this process carbon dioxide is given out.

- **Excretion:** The process of removal of waste substances from the body of living being is called *excretion*.
- **Living Things:** Objects which have some characteristics such as need of food, respiration, response to stimuli, movement, growth, and reproduction are called *living things*.
- **Growth:** An increase in size, height and girth is referred to as *growth*. Growth seems to be common to all living things. For example, a chicken hatched from an egg grows into a chicken and then hen or cock.
- Respiration process consists of two parts:
 - (i) Breathing—inhaling oxygen inside the body and giving out carbon dioxide from the body.
 - (ii) In respiration, some of the oxygen of the inhaled air is used by the living body to obtain energy from the food it takes.
Respiration is necessary for all living organisms, organs, tissues and each cell of the living body. This is the only process by which organisms obtain energy from breakdown of food to do various life processes.
- **Stimuli:** Changes in us or other organisms caused due to surroundings that makes us or other organisms respond to them are called *stimuli*.
- **Reproduction:** *Reproduction* is the process by which living things produce more of their own kind. It is true both for animals and plants. It takes place in many different ways, for different organisms.
 - Some animals produce their young ones through eggs. Some animals give birth to the young ones.
 - Plants also reproduce. Many plants produce seeds which can germinate and grow into new plants.
 - Some plants reproduce through parts other than seeds. For example, a part of a potato with a bud grows into a new plant.
- Plants, animals and micro-organisms together constitute biotic components. Soil, rocks, water, light and temperature are some of the abiotic components of our surroundings.
- **Hydrophytes:** The plants which grow in watery places or the places which remain very wet throughout the year are

called hydrophytes. For example, *Hydrilla*, *Vallisneria*, *Pistia*, lotus.

- **Mesophytes:** The plants which we see around us, i.e., which grow in moderate conditions of temperature, light, water and oxygen. For example, apple, neem, lime and orange. They are called *mesophytes*.

■ TEXTBOOK QUESTIONS SOLVED ■

Q.1. What is a habitat?

Ans. The surroundings where animals live is called their habitat. The organisms depend on their habitat for their food, water, air, shelter and other needs. Habitat means a dwelling place.

Q.2. How are cactus adapted to survive in a desert?

Ans. Cactus are adapted to survive in a desert as they have

- No leaves or spiny leaves to prevent water loss through transpiration.
- Stem is modified in such a way that it performs photosynthesis and conserves water.
- Their roots go very deep into the soil for absorbing water.

Q.3. Fill in the blanks:

- The presence of specific features which enables a plant or an animal to live in a particular habitat is called _____.
- The habitats of the plants and animals that live on land are called _____ habitats.
- The habitats of plants and animals that live in water are called _____ habitats.
- Soil, water and air are the _____ factors of a habitats.
- Changes in our surroundings that make us respond to them are called _____.

Ans. (a) adaptation (b) terrestrial
(c) aquatic (d) abiotic
(e) stimuli

Q.4. Which of the things in the following list are non-living?
Plough, Mushrooms, Sewing machine, Radio, Boat, Water, Hyacinth, Earthworm.

Ans. Plough, Sewing machine, Radio, Boat and water are non-living.

Q.5. Give an example of a non-living thing which shows any two characteristics of living thing.

Ans. Example of non-living thing is cloud which shows following two characteristics of living things:

- It grows in size
- It shows movement.

Q.6. Which of the following non-living things were once part of a living thing?

Butter, Leather, Soil, Wool, Electric Bulb, Cooking Oil, Salt, Apple, Rubber.

Ans. Butter, Leather, Wool, Cooking oil, Apple and Rubber are the non-living things which were once part of a living thing.

Q.7. List the common characteristics of living things.

Ans. Some common characteristics of living things are:

- Growth
- Movement
- Reproduction
- Respiration
- Responsiveness
- Excretion

Q.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).

Ans. In grasslands habitats, there are few trees or places for animals to hide. When their enemy attacks they have to run faster so as to reach a safe place. If they fail, they lose their life. So, the speed is very important for survival of grassland animals.