

## EXERCISE – 01

### Multiple Choice Questions

1. The structural unit of a living being is –  
 (1) atom  
 (2) molecule  
 (3) compound substance  
 (4) cell
2. In the comparison of living things and non-living things, which of the following statement is wrong?  
 (1) Both are made of molecules.  
 (2) Both are collections of many atoms.  
 (3) Both can respire.  
 (4) Both have mass and occupy space.
3. Which of the following statement is true?  
 (1) The structural unit of living things is molecule.  
 (2) All animals are autotrophs.  
 (3) All organisms reproduce sexually.  
 (4) Organisms follow a life cycle of birth, growth, reproduction, ageing and death.
4. Plants can make their own food. They are called –  
 (1) autotrophs  
 (2) heterotrophs  
 (3) parasites  
 (4) herbivores
5. The green pigment present in the plants which help in the synthesis of food is –  
 (1) chlorophyll  
 (2) keratin  
 (3) hemoglobin  
 (4) All of these
6. The living beings which cannot synthesize food on their own are called –  
 (1) autotrophs  
 (2) heterotrophs  
 (3) blue-green algae  
 (4) plants
7. Microscopic pores in plants through which they expel air are called –  
 (1) atom  
 (2) molecule  
 (3) compound substance  
 (4) stomata
8. In living things growth happens –  
 (1) from inside  
 (2) from outside  
 (3) both the above  
 (4) none of the above
9. When we touch the leaves of a touch-me-not plant, they bend down. This is an example of –  
 (1) respiratory process  
 (2) response to stimulus  
 (3) circulatory system  
 (4) reproductive system
10. The phenomenon of response of plants to light is called –  
 (1) phototropism  
 (2) geotropism  
 (3) reflex action  
 (4) spectroscopy
11. Response of plants to temperature is called –  
 (1) phototropism  
 (2) geotropism  
 (3) thermotropism  
 (4) none of the above

- 12.** When you are pricked with a pin, you will draw out your hand very fast. Here, what is the stimulus?  
 (1) Drawing out hand  
 (2) Pricking with a pin  
 (3) Pin  
 (4) Hand
- 13.** The energy releasing process in living organisms is –  
 (1) reflex action  
 (2) respiration  
 (3) blood circulation  
 (4) reproduction
- 14.** In respiration –  
 (1) chlorophyll synthesizes food from carbon dioxide and water in the presence of sunlight.  
 (2) oxygen absorbed from air or water is made to combine with carbon dioxide to produce food.  
 (3) chlorophyll absorbs oxygen from air or water and releases carbon dioxide.  
 (4) oxygen is absorbed from air or water and made to combine with food and carbon dioxide is released.
- 15.** Fish absorb oxygen through –  
 (1) gills (2) lungs  
 (3) tail (4) mouth
- 16.** The process of expelling waste from the organism is called –  
 (1) digestion  
 (2) ingestion  
 (3) excretion  
 (4) reflex action
- 17.** Reproduction in rose plant is through –  
 (1) stem (2) flowers  
 (3) roots (4) leaves
- 18.** Potato and sugarcane give rise to new plants through –  
 (1) eggs (2) seeds  
 (3) stem (4) roots
- 19.** The animal that reproduces by laying eggs is –  
 (1) cat (2) dog  
 (3) cow (4) fish
- 20.** Which of the following statement is true?  
 (1) Non-living things do not grow.  
 (2) Carnivorous animals feed themselves on plants and bushes.  
 (3) Animals excrete through stomata.  
 (4) Herbivorous animals prepare their own food using chlorophyll.
- 21.** Choose the desert plant from the following.  
 (1) Lotus (2) Banyan tree  
 (3) Opuntia (4) Neem tree
- 22.** Sunlight is present for only a short span of time in –  
 (1) polar regions  
 (2) subtropical regions  
 (3) desert regions  
 (4) Himalayan region
- 23.** Animal that lives in water only –  
 (1) frog  
 (2) fish  
 (3) crocodile  
 (4) duck
- 24.** Which of the following is the largest among animals?  
 (1) Rhinoceros (2) Elephant  
 (3) Whale (4) Crocodile
- 25.** An example for animal that lives both on land and in water is –  
 (1) whale (2) fish  
 (3) frog (4) lion

### One Word

1. The process of taking food by organisms.
2. Increase in the size along with mass using energy.
3. The factors like food, water, light, temperature to which organisms respond.
4. The process of getting rid of waste.
5. Process of production of new organisms of own kind.

### True/False

1. Plants and animals cannot survive without air.
2. Habitat is a special environment of an organism.
3. Egg laying animals are called viviparous.
4. Fins are for aquatic life in fish.
5. In all the fishes body tapers at both ends.

### Fill in the blanks

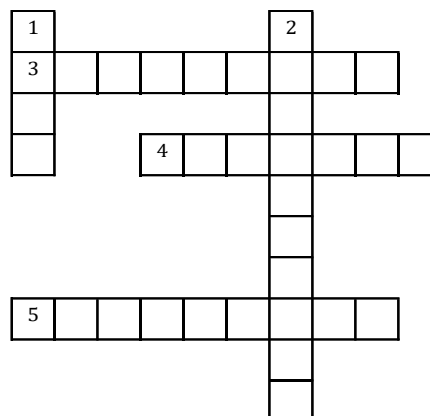
1. Matter is anything that has \_\_\_\_\_ and occupies \_\_\_\_\_.
2. Some objects are categorized as living while others as \_\_\_\_\_.
3. Animals depend on \_\_\_\_\_ for their food.
4. The process of respiration involves \_\_\_\_\_ of gases.
5. The place where organisms live is called \_\_\_\_\_.
6. Soil, water and air are \_\_\_\_\_ components of a habitat.
7. The habitat for plants living on land is \_\_\_\_\_.
8. The habitat for plants living in water is \_\_\_\_\_.
9. \_\_\_\_\_ is a medium in aquatic habitat.
10. Plants absorb minerals from \_\_\_\_\_ in terrestrial habitat.
11. Forests and trees act as \_\_\_\_\_.

12. Plants growing in hot and dry places are called \_\_\_\_\_.
13. Desert plants have \_\_\_\_\_ root system.
14. Plants put in shade for a longer time become \_\_\_\_\_ and \_\_\_\_\_.
15. Animals living in \_\_\_\_\_ have very much reduced eyes.

### Match the column

Column - I		Column - II	
(1)	Bird	(a)	Hollow bones
(2)	Hydrilla	(b)	Found on mountain
(3)	Whale	(c)	Aquatic plant
(4)	Cactus	(d)	Desert plant
(5)	Snow bear	(e)	Desert adaptation
(6)	Camel	(f)	Aquatic adaptation

### Solve the following crossword puzzle with the clues given:



### Across

3. Removal of waste substances from the body
4. The place where a plant or animals lives.
5. Egg laying animals

### Down

1. Smallest living structure that is able to function independently.
2. Animals which gives birth to young ones.

## ANSWER KEY

## Multiple Choice Questions

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	4	3	4	1	1	2	4	1	2	1	3	2	2	4	1
Question	16	17	18	19	20	21	22	23	24	25					
Answer	3	1	3	4	1	3	1	2	3	3					

### One word Answer

1. Nutrition
2. Growth
3. Stimuli
4. Excretion
5. Reproduction

## True/False

1. True                      2. True                      3. False                      4. True
5. True

### Fill in the blanks

- |                       |                              |                             |                       |
|-----------------------|------------------------------|-----------------------------|-----------------------|
| <b>1. Mass, space</b> | <b>2. Non-living</b>         | <b>3. Plants</b>            | <b>4. Exchange</b>    |
| <b>5. Habitat</b>     | <b>6. Abiotic</b>            | <b>7. Terrestrial</b>       | <b>8. Aquatic</b>     |
| <b>9. Water</b>       | <b>10. Land (Soil)</b>       | <b>11. Wind-brakes</b>      | <b>12. Xerophytes</b> |
| <b>13. Long</b>       | <b>14. Delicate and weak</b> | <b>15. Caves or burrows</b> |                       |

### Match the column

1. (1)  $\rightarrow$  a; (2)  $\rightarrow$  c; (3)  $\rightarrow$  f; (4)  $\rightarrow$  d; (5)  $\rightarrow$  b; (6)  $\rightarrow$  e

## Crossword puzzle answer

<sup>1</sup> C						<sup>2</sup> V			
<sup>3</sup> E	X	C	R	E	T	I	O	N	
L						V			
L			<sup>4</sup> H	A	B	I	T	A	T
						P			
						A			
						R			
<sup>5</sup> O	V	I	P	A	R	O	U	S	
						U			
						S			

## EXERCISE – 02

**Very Short Answer Type Questions**

1. What are the common characteristics of the living things?
2. Give two examples to show that living things respond to stimuli. One example should be from animals and the other from plants.
3. Write the names of two sea-animals which have gills and two sea-animals which have blowholes.
4. Which of the two occurs over a short period of time: acclimatization or adaptation?
5. Which part of plant carries out photosynthesis?  
(a) in a common plant?  
(b) in a cactus plant?
6. State one adaptation in yak which protects it from the cold environment of a mountain habitat.
7. What is the unique feature of long claws in the front legs of a lion?
8. Name two sea-animals which have streamlined body shapes and two sea animals which do not have streamlined body shapes.

9. Name one animal which is adapted to live in water as well as on land.
10. How is a frog adapted?  
(a) to live life in water?  
(b) to live life on land?

**Short Answer type questions**

1. Give any five differences between living and non-living things.
2. What is meant by "adaptation"? Explain with the help of an example.
3. What is meant by "acclimatization"? Explain with the help of an example.
4. How is camel adapted to survive in a desert?
5. What are the adaptations by which desert animals such as desert rats and desert snakes are adapted to survive in hot and dry areas of desert.
6. How is cactus adapted to survive in a desert?
7. What is the main function of root in desert plants?
8. State the various ways in which the trees are adapted to live in extremely cold and windy mountain habitats.
9. Write two ways in which a mountain goat is adapted to the cold and rocky environment of its habitat.

- |   |  |
|---|--|
| <p>10. How is snow leopard adapted to live in extremely cold mountain regions having snow all around?</p> <p>11. Explain how a lion is adapted to the forest habitat.</p> <p>12. What are the various ways in which a deer is adapted to live in forest habitat?</p> <p>13. Write the adaptations in animals which help them to survive in the aquatic habitat like ocean (or sea).</p> <p>14. How are the aquatic plants adapted to their water environment?</p> <p>15. Explain why, aquatic plants have very short and small roots.</p> | <p>Explain your answer in terms of response to stimulus.</p> <p>2. Explain how the desert plants have adapted to the hot and dry environment.</p> <p>3. Name the most common adaptation found in all animals living in cold places like mountains.</p> <p>4. Explain why</p> <p>(a) a lion has eyes in the front of its head</p> <p>(b) a deer has eyes on the sides of its head</p> <p>5. Explain the different types of adaptations found in aquatic plants.</p> |
|---|--|

**Long Answer Type Questions**

1. What happens if we move from a dark room into bright sunshine suddenly?

## EXERCISE SOLUTION – 01

### Multiple Choice Questions

**1. Option (4)**

A cell is the smallest structural unit of living beings.

**2. Option (3)**

Respiration is the characteristic of living things in which they get energy from food.

**3. Option (4)**

An organism has a definite life cycle. As first they take birth then growth after that they reproduce then ageing and finally to the death.

**4. Option (1)**

Green plants manufacture their own food in their green leaves so they are called autotrophs.

**5. Option (1)**

One of the essential elements for photosynthesis is chlorophyll. It is a green pigment present in plants.

**6. Option (2)**

Animals cannot manufacture their own food. They depend on others for food are known as heterotrophs.

**7. Option (4)**

Leaves of plants have tiny pores called stomata which help in gas exchange in plants.

**8. Option (1)**

In living things, growth takes place from inside only. All the living things grow from a 'single cell'.

**9. Option (2)**

Plants do not move from one place to another place as they are fixed in the soil at one place, but plants can show movement of their body like leaves, flower, shoot and root etc. They respond towards any stimuli by the movement of their plant part. By the touching of leaves of a touch me not plant it get response by bend down.

**10. Option (1)**

The response of plants towards the light is called phototropism. (Photo-Light, Tropism-Towards).

**11. Option (3)**

Response of plants towards temperature is called thermotropism (Thermo-Temperature, Tropism - Towards).

**12. Option (2)**

If we pricked with a pin, we would draw out our hand very fast. In this whole action, drawing out hand is response while pricking with a pin is a stimulus.

**13. Option (2)**

Respiration is the chemical process in which food taken by an organism combines with oxygen to release energy.

**14. Option (4)**

In respiration oxygen is absorbed from air or water and made to combine with food and carbon dioxide is released.

**15. Option (1)**

Fish is an aquatic animal which has special organs of breathing called gills. They use dissolved oxygen by special respiratory organs, that is gills.

**16. Option (3)**

Excretion is the process by which all living things remove metabolic waste from the body.

**17. Option (1)**

Reproduction in rose plants is performed by cutting off their stem.

**18. Option (3)**

Potato and sugarcane both have underground stems. So, their stem grows under the ground and gives rise to the new plant.

**19. Option (4)**

Egg laying animals are called viviparous and only fishes lay eggs. Cat, dog and cow all animals give birth to the young ones.

**20. Option (1)**

Growth is the characteristic of living things. Non-living things do not grow.

**21. Option (3)**

Lotus is an aquatic plant, while Banyan and Neem are terrestrial plants, but Opuntia is found in desert. So, it is a desert plant.

**22. Option (1)**

Two polar regions, that is north pole and south pole are the two ends of earth where the sunlight reaches for very short time.

**23. Option (2)**

Fish are aquatic animals which only live in water and cannot survive on the land. Frogs, crocodiles, and ducks are animals that can also live on land also.

**24. Option (3)**

The whale is considered the largest animal in the world.

**25. Option (3)**

Animals that can live on land and underwater are known as amphibians. A frog is an animal that lives in both land and in water.

**One Word**

1. Nutrition
2. Growth
3. Stimuli
4. Excretion
5. Reproduction

**True/False**

1. True
  2. True
  3. False
  4. True
  5. True
- Egg laying animals are called oviparous.

**Fill in the blanks**

1. Mass, space
2. Non-living

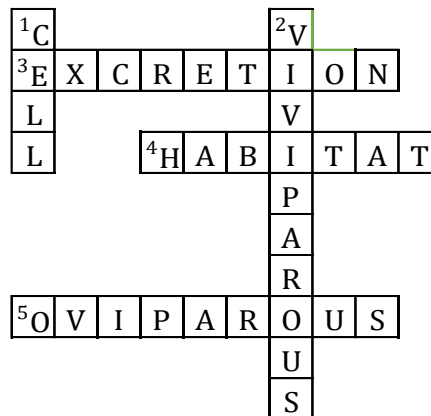


3. Plants
4. Exchange
5. Habitat
6. Abiotic
7. Terrestrial
8. Aquatic
9. Water
10. Land (Soil)
11. Wind-brakes
12. Xerophytes
13. Long
14. Delicate and weak
15. Caves or burrows

**Match the column**

1. (1) → a; (2) → c; (3) → f;  
(4) → d; (5) → b; (6) → e

**Crossword Puzzle**



## EXERCISE SOLUTION – 02

## Very Short Answer Type Questions

1. Living things need food, air and water. It can grow, move, respire, excrete, reproduce and respond to stimuli. It has a definite life span.
2. If a man touches a very hot object accidentally, he quickly pulls his hand away from the hot object. In this case, the stimulus is heat and the man responds by moving his hand away from the hot object. Plant responds to light if the potted plant is kept in open space, the stem of plant grows towards the source of light.
3. Sea animals having gills: fishes, octopus. Sea animals have blowholes: dolphins and whales.
4. Acclimatization
5. (a) Leaf – In common plant  
(b) Stem (Modified) – In cactus
6. Yaks have long hair on their body to protect them from the cold by keeping them warm.
7. The lion has long, strong and sharp claws in its front legs to catch its prey. The lion helps them to swim in water. This adaptation helps the frogs to live life in water.
8. Sea animals having streamlined body shape are fishes and whales. Sea animals that do not have streamlined body shape are squids and octopus.
9. Frog is an amphibian who can live on both land and water.

10. Animals like frogs have ponds as their habitat. Frogs can live inside water as well as on land near the pond.

- (a) Frogs have webbed back feet which help them to swim in water. This adaptation helps the frogs to live life in water.
- (b) Frogs have strong back legs for leaping (jumping) and catching their prey. This adaptation helps the frogs to live life on land.

## Short Answer Type Questions

1. Differences between Living and non-Living things.

Living things		Non-Living things	
1.	Living things need food, air and water.	(i)	Non-living things do not need food, air or water.
2.	Living things can grow.	(ii)	Non-living things cannot grow.
3.	Living things can move on their own.	(iii)	Non-living things cannot move on their own.
4.	Living things respond to stimuli (changes around them). They are sensitive.	(iv)	Non-living things do not respond to stimuli. They are not sensitive.
5.	Living things can reproduce.	(v)	Non-living things cannot reproduce.

2. The presence of specific body features (or certain habits) which enable a plant or an animal to live in a particular habitat is called adaptation.
- A living thing can survive in a particular habitat if its body is suited (or adapted) to the conditions or environment of that habitat. Plants and animals develop special characteristics or features in their body in order to survive in their habitat (or surroundings). Ex. Adaptation in mountain regions where Yaks have long hair on their body to protect them from cold by keeping them warm.
3. There are some changes that can happen in an organism over a short period of time to help them adjust to some changes in their surroundings is acclimatization Ex. if we live in the plains and suddenly go to high mountain regions, we may experience difficulty in breathing and doing physical exercise for some days. We need to breathe faster when we are on high mountains. After some days, our body adjusts to the changed conditions on the high mountain.
4. Camel is adapted to live in a desert because of its following special features–
- (i) The camel has long legs which help to keep its body away from the hot sand in the desert.
  - (ii) A camel can drink large amounts of water (when it is available) and store it in the body.
  - (iii) A camel's body is adapted to save water in the dry desert because camel passes small amount of urine and its dung is dry & does not sweat much.
  - (iv) A camel's hump has 'fat' stored in it. In case of emergency, a camel can break down stored fat to obtain water.
  - (v) A camel has large and flat feet which help it to walk easily on soft sand (by preventing it from sinking into soft sand).
5. Desert rats and snakes live in burrows. During the daytime, they dig deep burrows in the sand and stay in them when it is very hot. The burrows stay cool during the day and hence protect these animals from the sun's heat as well as loss of water from their body. The desert rats and desert snakes come out of the burrows only during cool nights in search of food.
6. (i) The leaves in desert plants (like cactus) are either absent, very small or present in the form of spines (thorns). This helps in reducing the loss of water from the leaves through transpiration.
- (ii) In desert plants, photosynthesis is usually carried out by their green stem which are modified to perform the function of leaves.
- (iii) The stems of desert plants are modified for storing water. The stems of desert plants are also covered with a thick waxy layer (called cuticle) which prevents the loss of water from it.
- (iv) Most of the desert plants have long roots which go deep into the soil for absorbing water.

- |   |   |
|---|---|
| <p>7. Most of the desert plants have long roots which go deep into the soil for absorbing water.</p> <p>8. The trees can survive in extremely cold and windy mountain habitats due to the following adaptations:</p> <p>(i) The trees in mountains are usually cone-shaped and have sloping branches. This shape of the mountain trees makes the rainwater and snow to slide off easily without damaging the branches and leaves.</p> <p>(ii) Many mountain trees have small, needle-like leaves due to which these leaves lose very little water in windy conditions. The needle like leaves have a thick waxy layer to reduce the loss of water through transpiration and to protect them from damage by rain and snow.</p> <p>9. Adaptation in mountain goat –</p> <p>(i) The mountain goat has long hair to protect it from cold and keep it warm.</p> <p>(ii) The mountain goat has strong hooves for running up the rocky slopes of mountain for grazing (The hard and rough feet of an animals are called hooves).</p> <p>10. Adaptation in Snow leopard –</p> <p>Snow leopard lives in mountains where snow is present. The snow leopard is adapted to live in extremely cold places having snow as follows:</p> <p>The snow leopard has thick fur on its body. This fur protects the snow leopard from cold and keeps it warm. The snow leopard has also fur on its feet and toes. This protects its feet from cold when it walks on the snow.</p> | <p>11. Adaptation in Lion –</p> <p>(i) The lion has long, strong and sharp claws in its front legs to catch its prey. The lion can withdraw the claws inside the toes so that they do not become worn out and blunt when it walks.</p> <p>(ii) The lion has eyes in front of its head which enable it to have a correct idea of the location of its prey. This helps it in catching the prey.</p> <p>(iii) The lion is light brown in colour. The light brown colour helps the lion to hide in dry grassland (without being noticed) when it hunts for prey.</p> <p>12. Adaptation in Deer –</p> <p>The deer is a herbivorous animal which eats only the plant material as food. The deer is adapted to the forest habitat in the following ways –</p> <p>(i) The deer has eyes on the sides of its head which enable it to see in all directions at the same time. The all-round vision of deer helps it to see its predators animals like lion (which kill it) in all the area around it.</p> <p>(ii) The deer has big ears. The big ears help the deer to hear the movements of predators very easily.</p> <p>(iii) The speed of deer helps it to run away from the predators (like lion) which try to catch it.</p> <p>(iv) The deer has brown colour. The brown colour of deer helps it to hide in dry grasslands without being noticed by lions etc.</p> <p>(v) The deer has strong teeth for chewing hard plant stems of the forest.</p> |
|---|---|

**13.** Some sea-animals like squids and octopus do not have streamlined body shaped. But when squids and octopus move in seawater, they make their body shape streamlined. Such animals stay deeper in the ocean near the seabed and catch any prey that moves towards them.

Many sea animals have streamlined bodies to help them move in sea water easily.

Dolphins and whales breathe in air through blowholes when they swim near the surface of water. After breathing in air, they close the blowholes with flaps and dive into the sea. Dolphins and whales can stay inside water for a long time without breathing.

**14.** The aquatic plants show a number of adaptations. Some of the adaptations are as follows –

(i) The aquatic plants have very short and small roots whose main function is to hold the plant in place. All the parts of an aquatic plant are surrounded by water, so an aquatic plant can absorb water and dissolve minerals directly from the surface of their stems, branches and leaves.

(ii) The stems of aquatic plants are soft, hollow and light, having large spaces filled with air. The aquatic plants do not need strong stems because the surrounding water of a pond, lake or river keeps them up.

(iii) The submerged aquatic plants have narrow and thin ribbon-like leaves which can bend in the flowing water of rivers and streams and hence do not obstruct the flow of water.

**15.** The aquatic plants have very short and small roots whose main function is to hold the plant in place. All the parts of an aquatic plant are surrounded by water, so an aquatic plant can absorb water and dissolve minerals directly from the surface of their stems, branches and leaves.

### Long Answer Type Questions

**1.** While coming out from a dark room to bright sunshine suddenly, our eyes feel a glaring effect. This is due to the reason that in dark room the pupil is dilated, so when we come out in bright light, a large amount of light enters our eyes and we feel glare. But after some time, the pupil responds by contracting and we are able to see clearly as less light enters our eyes now.

**2.** Some of the adaptations which help the desert plants to survive in hot and dry environment of a desert are as follows –

(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 through transpiration.

(ii) Since the leaves of desert plants are either absent, very small or form spines the stems of desert plants are modified to perform the function of leaves. Thus, in desert plants photosynthesis is usually carried out by their green stem.

(iii) The stems of desert plants are modified for storing water. The stems of desert plants are also covered with a thick waxy layer (called cuticle) which prevents the loss of water from it.

(iv) Most of the desert plants have long roots which go deep into the soil for absorbing water.

3. The animals living in mountain habitat are adapted to the extremely cold environment present there.
- Adaptation in yak:** Yaks have long hair on their body to protect them from cold by keeping them warm.
- Adaptation in mountain goat:**
- (i) The mountain goat has long hair to protect it from cold and keep it warm.
  - (ii) The mountain goat has strong hooves for running up the rocky slopes of mountain for grazing (The hard and rough feet of an animals are called hooves).
- Adaptation in snow leopard:** Snow leopard lives in mountains where snow is present. The snow leopard is adapted to live in extremely cold places having snow as follows –
- The snow leopard has thick fur on its body. This fur protects the snow leopard from cold and keeps it warm. The snow leopard has also fur on its feet and toes. This protects its feet from cold when it walks on the snow.
4. (a) The lion has eyes in front of its head which enable it to have a correct idea of the location of its prey. This helps it in catching the prey.
- (b) The deer has eyes on the sides of its head which enable it to see in all directions at the same time. The all-round vision of deer helps it to see its predators animals like lion (which kill it), in all the area around it.
5. The aquatic plants show a number of adaptations. Some of the adaptations are as follows –
- (i) The aquatic plants have very short and small roots whose main function is to hold the plant in place. All the parts of an aquatic plant are surrounded by water, so an aquatic plant can absorb water and dissolved minerals directly from the surface of their stems, branches and leaves.
  - (ii) The stems of aquatic plants are soft, hollow and light, having large spaces filled with air. The aquatic plants do not need strong stems because the surrounding water of a pond, lake or river keeps them up.
  - (iii) The submerged aquatic plants have narrow and thin ribbon-like leaves which can bend in the flowing water of rivers and streams and hence do not obstruct the flow of water.