1. The Living World: Adaptations and Classification

Q. 1) Fill in the Blanks with suitable word.

1. Gradual changes occur in the body parts and also in the behaviour of organisms which help them to adjust to their surroundings. Such changes are called ..... .

Ans. Adaptations

2. Plants of snowy regions mainly include conifers like ..... .

Ans. Deodar and pine

3. Fibrous roots of grasses prevent ..... .

Ans. Soil erosion

4. Plant that grow in soil which is deficient in nitrogen, fulfill their need for nitrogen by consuming _..... .

Ans. Insects

5. As the frog and duck have webbed toes, they can use their legs like _..... .

Ans. Oars

6. Desert animals have a thick skin to prevent loss of ..... from the body.

Ans. Water

7. Bats can fly with the help of the ..... a thin fold of skin between their forelegs and hind legs.

Ans. patagium

8. Animal like house lizard, garden lizard, crocodile use their ..... for creeping.

Ans. muscles

9. The plant body of dodder consists of yellow ..... stems.

Ans. wire - like

10. Climbers and vines grow to great height with the support of ..... .

Ans. Trees

Q. 2) Find My Match.

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

Ans.

'A' Group	'B' Group
1. Lotus	Adapted to live in water
2. Aloe	Adapted to live in deserts
3. Cuscuta	Haustorial roots for absorption of food
4. Venus flytrap	Flower and leaves attract insects

Q. 3) Distinguish between the following.

1. Herbivores and carnivores.

Ans.

Herbivores	Carnivores
1. Herbivores consume only plant matter.	1. Carnivores consume flash of their prey by hunting them.
2. For grinding the tough vegetable matter, they have strong molars.	2. For killing the prey they have pointed canines.
3. The eyes of herbivores are below the forehead, on either side of the head.	3. As their eyes are located in front of their head. They are forward focused.
4. Their legs are long and tapering with strong hooves, which enable them to run fast taking long jump and leaps.	4. Their legs are strong.
5. Their long and freely moving ears can receive sounds from long distances and different directions. Examples. horse, deer, cow	5. They have small ears but good vision to locate prey. Examples. fox, tiger, cat, lion

2. Adaptations in birds and fish

Ans.

Adaptations in fish	Adaptations in birds
1. Adaptation like the tapering body of fish which offers least resistance during swimming.	1. Adaptation like the stream - lined tapering body offers least resistance to the body while flying.
2. They have a swim bladder in their body.	2. They have air sacs in their body.
3. Fish can swim because of different types of fins that are present.	3. Their Forelimbs are modified to form wings. The hind legs and wings together help the bird in locomotion.
4. Its body is covered with scales.	4. Its body is covered with feathers.

Q. 3) who is lying?

1. Cockroach - I have five legs.

Ans. Cockroach is lying. Cockroach has six legs.

2. Hen - My toes are webbed.

Ans. Hen is lying. Its toes are not webbed.

3. Cactus - My fleshy, green part is a leaf.

Ans. Cactus is lying. Its fleshy and green part is a stem.

4. Deer - I am a carnivore.

Ans. Deer is lying. It is herbivores.

5. Bear - I live in desert.

Ans. Bear is lying. It lives in snowy region.

Q. 4) Read the paragraph and answer the following questions.

I am 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. My wings are small. My toes are webbed. We live in flocks.

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

Ans. Penguin's white color can mix with the surrounding and cannot be easily located. This helps penguin to seek protection against predators. It lives in extremely cold Polar Regions. The region is always covered over with ice. It has thick skin with thick layer of fat. This fat helps them producing energy in body and maintaining temperature in cold area.

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

Ans. By sticking to each other the body heat is maintained in the cold surroundings. Staying in a flock helps to stay

protected against the attack from predator. It also becomes easier for parental care.

3. Which geographical region do I inhabit? Why?

Ans. There is abundant food available in the Antarctic region for the penguins. Thus penguin stays in Polar region especially in the Antarctic region.

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

Ans. The body should be such that it should be adaptable to cold temperatures. The thick layer of fat and thick skin helps to protect their body. The ability to regulate body temperature should be extremely good for the survival.

Q. 5) Answer the following.

1. How can the plants like cactus and Acacia live in deserts with scarce water?

Ans. 1) The plants like Cactus and Acacia grow in deserts. As they show adaptations to survive in the scarcity of water. 2) Cactus does not have leaves. The stem takes up the function of photosynthesis and hence turns fleshy and green also leaves of acacia plant are very small. Some leaves are modified into thorns. Therefore water is not lost by evaporation through leaves. 4) Root of these plants penetrates deep down into the soil in search of water. 5)

There is thick layer of waxy substance on the stems. 6) All such adaptations help the cactus and acacia to survive in deserts with scarce water

.2.Why is the camel called the 'Ship of the desert'?

Ans. 1) Camel has a thick skin and it has long legs with cushioned soles. 2) It has a fold of skin for protection of nostrils. 3) Fat is stored in its hump. Due to which it can survive for a long time without water. 4) The eyelashes are long and thick and thus they protect the eyes. 5) All such adaptations make camel most suitable to walk in the desert. Thus it is used as a means of transport and is called 'ship of the desert'.

3. What is the inter-relationship between adaptation of organisms and their surroundings?

Ans. 1) The modifications in various organs and life processes help the organisms to live, feed, reproduce and create new generation. 2) Adaptations are the changes that take place in the structure and function of the body. 3) These adaptations also help in the protection of the organisms against the predators 4) Therefore, depending upon the habitat and its geographical conditions of an environment the organisms acquire corresponding adaptations.

4. How are organisms classified?

Ans. 1) The detailed study of these organisms is done according to their characteristics before classifying them. 2) On the basics of similarities and differences the organisms are classified into groups and subgroups. 3) A hierarchy is formed depending upon these features. 4) This helps to classify organisms and to place them in suitable groups.

Q. 6) Write a paragraph about adaptation with reference to each statement.

1. There is extreme heat in deserts.

Ans. In extreme heat of deserts the living organisms residing there, show appropriate adaptations in their structure of body and their life processes. Adaptations shown by camel are modified legs, eyes, nose and the hump on the back. During day time rats, snakes, spiders and lizards remain inside deep burrows to escape from the heat of the sun. Different species of Cacti have specially modified body structure with which they survive in the extreme heat too.

2. Grasslands are lush green.

Ans. In grassland the water availability is in ample amount. Hence, there are plenty of grasses and shrubs. Grass prevents soil erosion due to their fibrous roots that hold the soil particles. Lush green growth is seen in equatorial regions due

to sunlight and abundant of water. All the sides of grasslands are covered due to this they look lush green.

3. Insects are found in abundant numbers on earth.

Ans. As insects can adapt to any kind of habitat such that some can fly light bodies, two pairs of wings which help them in flying. Some insects are also aquatic, some stay near water bodies. Some live in deserts. Many have ability to camouflage with environment and thus they protect themselves from predators. They can reproduce in large numbers. Due to all such adaptations insects are found in abundant form.

4. We hide ourselves.

Ans. Chameleon, garden lizard can change colour rapidly and become unnoticeable. Some of those hide are weak animals. In order to protect from enemies, they hide in their habitats. The body color mixes with the surroundings and thus enemies do not see these hiding easily. Some of them hide also for catching prey. This helps them to catch their prey easily.

5. Our ears are long.

Ans. herbivores have long ears. As they have to be alert from the attack of predator carnivore. To locate the approaching prey they can move their ears. In case of such danger, they

run away in a herd. Adaptation of having long ears helps to escape from enemies.

Q. 7) Use your brain power!

1. Why does water trickle off lotus leaves?

Ans. As Lotus is an aquatic plant that has a coating of waxy layer on its stems and leaves. So, if water falls on the leaves, it is not absorbed but gets trickled down.

2. Why don't the leaves of these plants rot in water?

Ans. As there are no stomata on the leaves and thus water cannot enter the leaves. The leaves of aquatic plants have waxy coating on them. Therefore, the leaves do not rot in water.

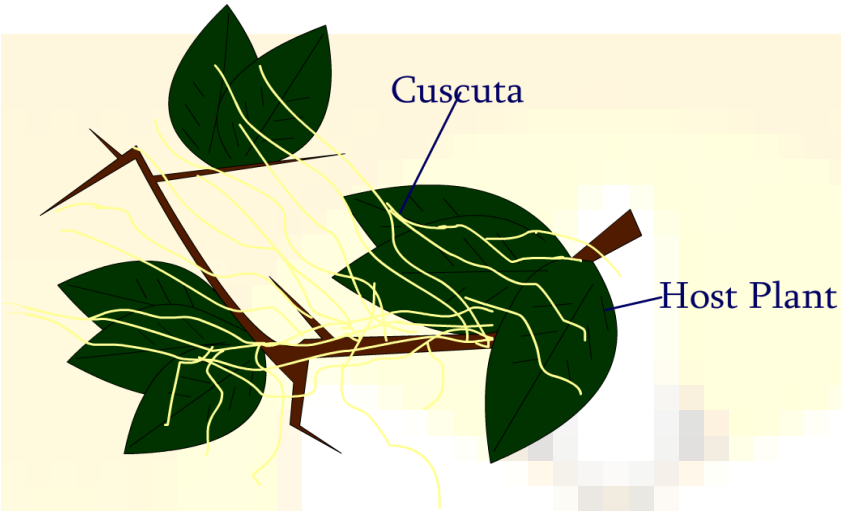
3. Why are their roots short and fibrous?

Ans. The main function of the roots is to hold the plant firmly and to absorb water and minerals for the plant. As these functions are not needed for the plant like Lotus which floats on the water. Therefore, their roots are short and fibrous.

Q. 8) Draw neat and well-labelled diagram of the following.

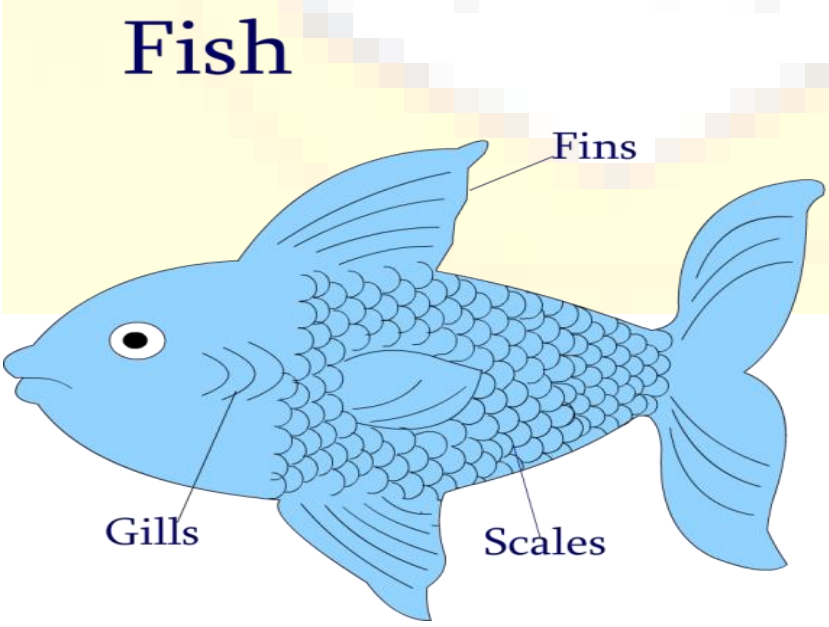
1. Cuscuta

Ans.



2. Fish

Ans.



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