

# UNIQUE STUDY POINT

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<b>Class:</b> VI	<b>Subject:</b> Science	<b>Session:</b> 2025-26
<b>Chapter:</b> 02 - Diversity in the Living World	<b>Time:</b> 1½ Hours	<b>Max. Marks:</b> 40

## General Instructions:

1. All questions are compulsory.
2. This question paper contains 20 questions divided into five sections A, B, C, D and E.
3. Section A contains 10 MCQs of 1 mark each.
4. Section B contains 4 questions of 2 marks each.
5. Section C contains 3 questions of 3 marks each.
6. Section D contains 1 question of 5 marks.
7. Section E contains 2 Case Study Based questions of 4 marks each.

## SECTION A - Multiple Choice Questions (1 mark each)

**Q.1** Plants with weak stems that need support to climb are called:

- (a) Herbs
- (b) Shrubs
- (c) Climbers
- (d) Trees

**Q.2** Which leaf shows reticulate venation?

- (a) Grass
- (b) Maize
- (c) Hibiscus
- (d) Wheat

**Q.3** Janaki Ammal played a key role in which movement?

- (a) Project Tiger
- (b) Save Silent Valley
- (c) Chipko Movement
- (d) Green Revolution

**Q.4** Which animal is an example of an amphibian?

- (a) Fish
- (b) Snake
- (c) Frog
- (d) Lizard

**Q.5** The conical shape of deodar trees helps them:

- (a) To store water
- (b) To let snow slide off easily

- (c) To attract birds
- (d) To grow faster

**Q.6** Which of the following is a monocot plant?

- (a) Chickpea
- (b) Mustard
- (c) Wheat
- (d) Pea

**Q.7** The Silent Valley is located in:

- (a) Rajasthan
- (b) Kerala
- (c) Karnataka
- (d) Tamil Nadu

**Q.8** Which body part do birds use for flying?

- (a) Legs
- (b) Wings
- (c) Tail
- (d) Beak

**Q.9** Camels in cold deserts have:

- (a) One hump
- (b) Two humps
- (c) Three humps
- (d) No hump

**Q.10** Which root system is found in banana plants?

- (a) Taproot
- (b) Fibrous root
- (c) Adventitious root
- (d) Prop root

### SECTION B - Short Answer Questions (2 marks each)

**Q.11** What are climbers and creepers? Give one example of each.

**Q.12** Why do camels have humps? How do these help them survive in deserts?

**Q.13** Differentiate between monocot and dicot plants based on their root systems.

**Q.14** What is the role of each member in biodiversity? Explain with an example.

### SECTION C - Short Answer Questions (3 marks each)

**Q.15** Describe the features of deodar trees that help them survive in mountainous regions with heavy snowfall.

**Q.16** Explain the Save Silent Valley Movement. Why was it important?

**Q.17** How are fish adapted to live in water? Mention any three adaptations.

### SECTION D - Long Answer Question (5 marks)

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**Q.18** What are adaptations? Explain with suitable examples how plants and animals are adapted to different habitats. Why do different regions have different biodiversity?

**SECTION E - Case Study Based Questions (4 marks each)**

**Q.19 Case Study 1:**

The Government of India has initiated several projects to conserve biodiversity. Project Tiger was initiated in 1973 to protect the declining population of the Bengal Tiger. The Cheetah Reintroduction Project was initiated in 2022 to restore the population of the Cheetah. Similarly, habitats of the Great Indian Bustards have been declared as Protected areas in the states of Gujarat, Rajasthan and Maharashtra.

Based on the above information, answer the following questions:

- (a) When was Project Tiger initiated? (1 mark)
- (b) Why was the Cheetah Reintroduction Project started? (1 mark)
- (c) Why is it necessary to protect the habitats of endangered species? (2 marks)

**Q.20 Case Study 2:**

During a biology class, the teacher showed students leaves of different plants. She explained that some leaves have a net-like pattern of veins called reticulate venation, while others have veins running parallel to each other called parallel venation. She also explained that there is a relationship between the type of venation and the type of root system in plants.

Based on the above information, answer the following questions:

- (a) What is venation? (1 mark)
- (b) Give one example each of a plant with reticulate venation and parallel venation. (1 mark)
- (c) Explain the relationship between leaf venation and root type in plants. (2 marks)

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SECTION A - Answers to MCQs

**Ans.1** (c) Climbers

**Explanation:** Climbers are plants with weak stems that need support to climb and grow. They cannot stand upright on their own.

**Ans.2** (c) Hibiscus

**Explanation:** Hibiscus leaves show reticulate venation with a net-like pattern of veins. Grass, maize, and wheat show parallel venation.

**Ans.3** (b) Save Silent Valley

**Explanation:** Janaki Ammal played a key role in the 'Save Silent Valley' movement to preserve the moist evergreen forest and its rich biodiversity.

**Ans.4** (c) Frog

**Explanation:** Frogs are amphibians that can live both on land and in water. They have adaptations for both terrestrial and aquatic life.

**Ans.5** (b) To let snow slide off easily

**Explanation:** The conical shape and sloping branches of deodar trees enable snow to slide off easily, helping them survive in regions with heavy snowfall.

**Ans.6** (c) Wheat

**Explanation:** Wheat is a monocot plant with one cotyledon, parallel venation, and fibrous roots. Chickpea, mustard, and pea are dicots.

**Ans.7** (b) Kerala

**Explanation:** Silent Valley is located in the Palakkad district of Kerala. It is a moist evergreen forest with rich biodiversity.

**Ans.8** (b) Wings

**Explanation:** Birds use wings for flying. Wings are specially adapted forelimbs that enable birds to fly through the air.

**Ans.9** (b) Two humps

**Explanation:** Camels in cold deserts (like Ladakh) have two humps, while camels in hot deserts (like Rajasthan) have one hump.

**Ans.10** (b) Fibrous root

**Explanation:** Banana plants have fibrous root systems. They are monocots with parallel venation in their leaves.

SECTION B - Answers to Short Answer Questions

**Ans.11** Climbers and creepers:

**Climbers:** Plants with weak stems that need support to climb and grow upward. Example: Money plant,

pea plant.

**Creepers:** Plants that creep along the ground with weak stems. Example: Pumpkin, watermelon.

**Ans.12** Camel humps and their function:

Camels have humps to store food. In deserts, food is not easily available. The food stored in humps helps camels survive during times of scarcity when food is not available. The humps shrink when camels use this stored food for energy.

**Ans.13** Difference in root systems:

**Monocot plants:** Have fibrous root systems where roots appear as a bunch of similar-sized thin roots arising from the base of the stem. Example: Wheat, maize.

**Dicot plants:** Have taproot systems with one main root (taproot) and smaller side roots arising from it. Example: Mustard, chickpea.

**Ans.14** Role of biodiversity members:

Each member in the biodiversity of a region has a different role to play. Plants and animals are dependent on each other for survival.

**Example:** Trees provide food (fruits) and shelter to birds and other animals. In return, animals help in spreading seeds after eating fruits, which helps plants reproduce and spread to new areas. This shows interdependence in nature.

## SECTION C - Answers to Short Answer Questions

**Ans.15** Features of deodar trees:

Deodar trees have several features that help them survive in mountainous regions with heavy snowfall:

**1. Conical shape:** The conical (cone-like) shape of deodar trees helps snow slide off easily from the branches.

**2. Sloping branches:** The flexible and sloping branches allow snow to slide off without breaking the branches.

**3. Needle-like leaves:** These trees have needle-like leaves that reduce water loss and can withstand cold temperatures.

**Ans.16** Save Silent Valley Movement:

**The Movement:** The Save Silent Valley Movement was a successful environmental movement to preserve the Silent Valley, a moist evergreen forest in the Palakkad district of Kerala. The battle against a proposed hydroelectric dam across the Kunthipuzha river persisted for 10 years.

**Importance:**

- It helped preserve an untouched moist evergreen forest with rich biodiversity
- The movement was led by common people who used awareness programmes, letters to editors, articles, seminars, and court petitions
- It set an example of successful community-led conservation efforts
- It protected numerous plant and animal species from habitat destruction

**Ans.17** Adaptations of fish:

Fish have several adaptations to live in water:

- 1. Streamlined body:** Fish have streamlined (boat-shaped) bodies that reduce resistance in water, helping them swim efficiently.
- 2. Fins:** Fish have fins that help them swim, maintain balance, and change direction in water.
- 3. Gills:** Fish have gills that extract dissolved oxygen from water, enabling them to breathe underwater.

## SECTION D - Answer to Long Answer Question

**Ans.18** Adaptations and biodiversity variations:

**Adaptations:** The special features that enable plants and animals to survive in a particular region or environment are called adaptations. These features help organisms cope with specific environmental conditions.

**Examples of adaptations:**

**1. Desert plants (Cactus):**

- Thick and fleshy stems store water
- Reduced leaves or spines minimize water loss
- Deep or widespread roots access water

**2. Desert animals (Camel):**

- Long legs and wide hooves for walking on sand
- Humps store food
- Water conservation through reduced urine, dry dung, no sweating

**3. Mountain plants (Deodar):**

- Conical shape allows snow to slide off
- Sloping branches prevent breakage
- Needle-like leaves reduce water loss

**4. Aquatic animals (Fish):**

- Streamlined body for efficient swimming
- Fins for movement and balance
- Gills for breathing underwater

**Why different regions have different biodiversity:**

- Different regions have different environmental conditions (temperature, rainfall, soil, altitude)
- These varying conditions support different types of plants and animals
- Only organisms with suitable adaptations can survive in specific conditions
- Hot deserts support drought-resistant species, while mountains support cold-adapted species
- The habitat provides specific resources (food, water, shelter) that suit particular organisms
- This leads to variation in biodiversity from region to region

## SECTION E - Answers to Case Study Based Questions

**Ans.19** Case Study 1:

**(a)** Project Tiger was initiated in 1973.

**(b)** The Cheetah Reintroduction Project was started in 2022 to restore the population of the Cheetah in India, as cheetahs had become extinct in the country.

**(c)** Protecting habitats of endangered species is necessary because:

- Habitat destruction is the main cause of species decline and extinction
- Habitats provide essential resources like food, water, shelter, and breeding grounds
- Without protected habitats, endangered species cannot survive or reproduce
- Protecting habitats helps maintain biodiversity and ecological balance
- It ensures that these species can recover and thrive for future generations

**Ans.20** Case Study 2:

**(a)** Venation is the pattern of veins on the leaf. Veins are the thin lines visible on leaves that transport water and nutrients.

**(b)** Plant with reticulate venation: Hibiscus (or any dicot plant like mustard, mango)

Plant with parallel venation: Grass (or any monocot plant like maize, wheat, banana)

**(c)** Relationship between leaf venation and root type:

- Plants with reticulate venation generally have taproot systems
- Plants with parallel venation generally have fibrous root systems
- This relationship is consistent in most flowering plants
- Dicot plants show reticulate venation and taproots, while monocot plants show parallel venation and fibrous roots
- This correlation helps in plant identification and classification

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