

UNIQUE STUDY POINT

By Sumeet Sahu

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Class: VI	Subject: Science	Session: 2025-26
Chapter: 02 - Diversity in the Living World	Time: 1½ Hours	Max. Marks: 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 Which of the following shows parallel venation?

- (a) Mango
- (b) Hibiscus
- (c) Banana
- (d) Rose

Q.2 The main purpose of grouping is to:

- (a) Make plants colorful
- (b) Understand similarities and differences
- (c) Increase plant height
- (d) Change plant shapes

Q.3 Which animal has webbed feet for swimming?

- (a) Pigeon
- (b) Hen
- (c) Duck
- (d) Eagle

Q.4 Keoladeo National Park is located in:

- (a) Kerala
- (b) Rajasthan
- (c) Karnataka
- (d) Gujarat

Q.5 A rose plant is an example of:

- (a) Herb
- (b) Shrub

- (c) Tree
- (d) Climber

Q.6 Which leaf venation is found in dicot plants?

- (a) Parallel venation
- (b) Reticulate venation
- (c) No venation
- (d) Circular venation

Q.7 The habitat of a sea turtle is:

- (a) Forest
- (b) Desert
- (c) Ocean
- (d) Mountain

Q.8 Rhododendrons are found in:

- (a) Deserts
- (b) Mountains
- (c) Oceans
- (d) Plains

Q.9 Which project was initiated to protect Bengal Tigers?

- (a) Project Elephant
- (b) Project Tiger
- (c) Project Lion
- (d) Project Rhino

Q.10 Animals that live on trees are called:

- (a) Terrestrial
- (b) Aquatic
- (c) Arboreal
- (d) Amphibians

SECTION B - Short Answer Questions (2 marks each)

Q.11 What is the difference between dicot and monocot seeds? Give one example of each.

Q.12 Why does biodiversity vary from region to region?

Q.13 What are amphibians? Give two examples.

Q.14 How are trees different from shrubs based on their stem and branching pattern?

SECTION C - Short Answer Questions (3 marks each)

Q.15 Explain any three ways in which animals can be grouped based on their features.

Q.16 What happens when the habitat of plants and animals is damaged? How does this affect biodiversity?

Q.17 Compare camels found in hot deserts with camels found in cold deserts. Mention at least three differences.

SECTION D - Long Answer Question (5 marks)

Q.18 What is biodiversity? Explain the interdependence of plants and animals in nature with suitable examples. Why is it important to protect biodiversity? What can we do to conserve it?

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

Q.19 Case Study 1:

A group of students went on a nature walk to observe different plants. They observed that grass had soft green stems and was very short. The rose plant had many hard woody stems branching close to the ground. The mango tree was very tall with a thick woody stem and branches starting higher up. They also noticed that grass and banana leaves had parallel lines, while hibiscus and mango leaves had a net-like pattern.

Based on the above information, answer the following questions:

- (a) Classify grass, rose, and mango as herb, shrub, or tree. (1 mark)
- (b) What type of venation is found in grass and banana leaves? (1 mark)
- (c) What is the relationship between the type of venation and the type of root system? (2 marks)

Q.20 Case Study 2:

Janaki Ammal was an Indian botanist who helped document and preserve India's rich plant biodiversity. She played a key role in the 'Save Silent Valley' movement. The Silent Valley is a moist evergreen forest in Kerala with rich biodiversity. The movement lasted for 10 years and successfully prevented the construction of a hydroelectric dam that would have destroyed this precious forest.

Based on the above information, answer the following questions:

- (a) Who was Janaki Ammal? (1 mark)
- (b) Where is Silent Valley located? (1 mark)
- (c) Why was the Save Silent Valley movement important? (2 marks)

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DETAILED ANSWER KEY - PAPER 04

SECTION A - Answers to MCQs

Ans.1 (c) Banana

Explanation: Banana leaves show parallel venation where veins run parallel to each other. Mango, hibiscus, and rose show reticulate venation.

Ans.2 (b) Understand similarities and differences

Explanation: Grouping makes it easier to understand and study plants and animals based on their similarities and differences.

Ans.3 (c) Duck

Explanation: Ducks have webbed feet that help them swim in water. The webbing between the toes acts like paddles.

Ans.4 (b) Rajasthan

Explanation: Keoladeo National Park is located in Bharatpur, Rajasthan. It was one of the regions preserved by Salim Ali for bird diversity.

Ans.5 (b) Shrub

Explanation: A rose plant is a shrub with many hard woody stems that branch close to the ground.

Ans.6 (b) Reticulate venation

Explanation: Dicot plants have reticulate venation with a net-like pattern of veins. They also have taproots and two cotyledons.

Ans.7 (c) Ocean

Explanation: The habitat of a sea turtle is the ocean. It is an aquatic habitat where the turtle lives in water.

Ans.8 (b) Mountains

Explanation: Rhododendrons are found in mountainous regions. They show different features in different mountain regions as adaptations.

Ans.9 (b) Project Tiger

Explanation: Project Tiger was initiated in 1973 to protect the declining population of the Bengal Tiger in India.

Ans.10 (c) Arboreal

Explanation: Animals that live on trees are called arboreal animals. Examples include monkeys, squirrels, and many birds.

SECTION B - Answers to Short Answer Questions

Ans.11 Difference between dicot and monocot seeds:

Dicot seeds: Seeds that split into two parts called cotyledons. Plants with such seeds are called dicotyledons. Example: Chickpea, pea.

Monocot seeds: Seeds that have a single thin cotyledon. Plants with such seeds are called monocotyledons. Example: Maize, wheat.

Ans.12 Variation in biodiversity:

Biodiversity varies from region to region because of different environmental conditions. Different regions have different climate, temperature, rainfall, soil type, and altitude. These varying conditions support different types of plants and animals that are adapted to those specific conditions. For example, deserts have cactus plants while mountains have deodar trees.

Ans.13 Amphibians:

Amphibians: Animals that can live both on land and in water are called amphibians. They have adaptations for both terrestrial and aquatic life.

Examples: Frog, salamander.

Ans.14 Difference between trees and shrubs:

Trees:

- Have a single hard, thick, brown, and woody stem (trunk)
- Branches start higher up on the stem, away from the ground
- Example: Mango, neem

Shrubs:

- Have many hard woody stems
- Branches start close to the ground
- Example: Rose, hibiscus

SECTION C - Answers to Short Answer Questions

Ans.15 Grouping of animals:

Animals can be grouped in various ways based on their features:

1. Based on eating habits: Animals can be grouped as herbivores (grass-eating), carnivores (meat-eating), and omnivores (eating both plants and animals).

2. Based on place they live: Animals can be grouped as terrestrial (living on land), aquatic (living in water), and amphibians (living both on land and in water).

3. Based on mode of movement: Animals can be grouped by how they move - flying (birds, bats), swimming (fish, whales), walking (goats, lions), crawling (snakes, earthworms), etc.

Ans.16 Effects of habitat damage:

When habitat is damaged:

- Plants and animals lose their homes and shelter
- They lose their sources of food and water
- They lose breeding grounds and safe places for their young ones
- Many species may not be able to survive in damaged habitats

Effects on biodiversity:

- Habitat damage leads to loss of biodiversity
- Many species become endangered or extinct
- The ecological balance is disturbed

- Species that depend on each other for survival are affected
- Example: The populations of Bengal Tiger, Cheetah, and Great Indian Bustard declined due to loss of natural habitats

Ans.17 Comparison of camels:

Camels in Hot Deserts (Rajasthan):

- Have one hump
- Have longer legs
- Do not have thick hair covering

Camels in Cold Deserts (Ladakh):

- Have two humps
- Have comparatively shorter legs
- Have long hair from head to neck for protection against cold

Additional difference: The two humps of cold desert camels shrink in late winters due to scarcity of food, as they use the stored food during that time.

SECTION D - Answer to Long Answer Question

Ans.18 Biodiversity and conservation:

Biodiversity: The variety of plants and animals found in a particular region is called biodiversity. It includes all the different species of organisms living in an area.

Interdependence in nature:

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

Examples of interdependence:

- Trees provide food (fruits) and shelter to birds and other animals
- Birds and animals help in spreading seeds after eating fruits, helping plants reproduce
- Flowers provide nectar to insects like bees
- Insects help in pollination, which is essential for plant reproduction
- Decomposers break down dead plants and animals, returning nutrients to the soil
- Herbivores eat plants, and carnivores eat herbivores, maintaining food chains

Importance of protecting biodiversity:

- Maintains ecological balance in nature
- Provides resources like food, medicine, and raw materials
- Helps maintain healthy ecosystems
- Ensures environmental stability
- Protects species from extinction
- Ensures that our planet is full of life and helps plants and animals survive and thrive

Conservation measures:

- Protecting natural habitats like forests, wetlands, and grasslands
- Creating protected areas like national parks and wildlife sanctuaries
- Supporting conservation projects like Project Tiger
- Preventing pollution and habitat destruction
- Supporting traditional conservation methods like sacred groves
- Raising awareness about biodiversity conservation
- Reducing deforestation and promoting afforestation

SECTION E - Answers to Case Study Based Questions

Ans.19 Case Study 1:

(a) Classification:

- Grass - Herb (small plant with soft green stem)
- Rose - Shrub (medium-sized plant with many hard woody stems branching close to ground)
- Mango - Tree (tall plant with thick woody stem and branches starting higher up)

(b) Grass and banana leaves have parallel venation, where veins run parallel to each other.

(c) Relationship between venation and root system:

- Plants with parallel venation generally have fibrous root systems
- Plants with reticulate venation generally have taproot systems
- Grass and banana (parallel venation) have fibrous roots
- Hibiscus and mango (reticulate venation) have taproots
- This relationship is consistent across most flowering plants and helps in plant classification

Ans.20 Case Study 2:

(a) Janaki Ammal (1897-1984) was an Indian botanist who was dedicated to environmental work and helped document and preserve India's rich plant biodiversity. She was the head of the Botanical Survey of India.

(b) Silent Valley is located in the Palakkad district of Kerala.

(c) Importance of the Save Silent Valley movement:

- It successfully preserved an untouched moist evergreen forest with rich biodiversity
- It prevented the construction of a hydroelectric dam that would have destroyed the forest and its biodiversity
- It set an example of successful community-led environmental conservation
- It protected numerous plant and animal species, including many medicinal plants
- It showed that common people can make a difference in conservation efforts through awareness, petitions, and legal action

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