

CLASS 11

BIOLOGY

EXTRA QUESTIONS

Class 11 Biology Chapter 5 Morphology of Flowering Plants – Extra Questions with Answers

Extra practice questions for Class 11 Biology Chapter 5 (Morphology of Flowering Plants), beyond the textbook. These Class 11 Biology Chapter 5 important questions are handy for last-minute exam practice.

Contents

Very Short Answer Questions (1 mark)

Short Answer Questions (2–3 marks)

Higher-Order Thinking / Application Questions

Class 11 Biology Chapter 5 – Solutions and Notes

Extra practice questions for Class 11 Biology Chapter 5 (Morphology of Flowering Plants), beyond the textbook. These Class 11 Biology Chapter 5 important questions are handy for last-minute exam practice.

Very Short Answer Questions (1 mark)

Q1. What type of root system is found in monocots?

Ans: Fibrous root system.

Q2. Name the male reproductive whorl of a flower.

Ans: Androecium (stamens).

Q3. What is venation?

Ans: The arrangement of veins in a leaf lamina (reticulate or parallel).

Q4. Give an example of an underground stem modified for storage.

Ans: Potato (tuber) or ginger (rhizome).

Q5. What is a zygomorphic flower?

Ans: A flower that can be divided into two equal halves in only one particular vertical plane (bilateral symmetry), e.g. pea flower.

Short Answer Questions (2–3 marks)

Q6. Differentiate between albuminous and exalbuminous seeds.

Ans: Albuminous seeds retain endosperm at maturity (food stored in endosperm); exalbuminous seeds have no residual endosperm at maturity (food stored in cotyledons instead).

Q7. List the four whorls of a flower in order and state whether each is a reproductive or accessory whorl.

Ans: Calyx (accessory), Corolla (accessory), Androecium (reproductive, male), Gynoecium (reproductive, female).

Q8. What are pneumatophores and in which type of plants are they found?

Ans: Pneumatophores are respiratory roots that grow vertically upward out of the soil/water to help with gas exchange, found in mangrove plants growing in swampy/saline habitats.

Higher-Order Thinking / Application Questions

Q9. Explain how the modification of the stem into a tendril (as in Cucurbita/pumpkin) versus a thorn (as in Citrus/lemon) represents different evolutionary adaptations for plant survival, discussing the specific function each modification serves.

Ans: A stem tendril, as seen in climbing plants like Cucurbita (pumpkin), is a thin, wiry, coiling modification of an axillary bud that allows the plant to wrap around external supports (fences, other plants, structures) for mechanical support, enabling the plant to grow vertically and access more sunlight without having to invest heavily in a thick, self-supporting woody stem — an adaptation for climbing and efficient resource allocation. In contrast, a stem thorn, as seen in Citrus (lemon), is a hard, pointed, woody modification of an axillary bud that serves primarily as a defensive/protective structure, deterring herbivores from feeding on the plant by causing physical injury if the animal attempts to browse on the leaves or stem. Both modifications arise from the same basic structure (an axillary bud modified into a different form) but serve entirely different survival functions — one facilitating structural support and access to light (tendril), the other providing physical defense against predation (thorn) — illustrating how the same developmental

starting point can be adaptively modified in different directions depending on the ecological pressures and survival strategies relevant to each plant species.

Q10. Explain why understanding flower morphology (specifically the arrangement, number, and fusion of floral whorls) is essential for plant taxonomists in identifying and classifying flowering plant families, using the concept of a floral formula/floral diagram as an example.

Ans: Flower structure, unlike vegetative features (leaves, stems) which can vary considerably even within a species due to environmental conditions, tends to be relatively stable, genetically conserved, and highly characteristic of specific plant families, making it one of the most reliable features for plant identification and classification. Taxonomists use standardized tools like the floral formula (a symbolic representation using letters/numbers indicating the number of sepals, petals, stamens, and carpels, their fusion, and ovary position) and the floral diagram (a schematic cross-sectional drawing of the flower's parts) to precisely document and compare these features across specimens. For example, family Fabaceae (pea family) characteristically has a specific floral arrangement (zygomorphic flower, 5 sepals fused, 5 petals in a papilionaceous/butterfly-like arrangement, 10 stamens often diadelphous), which is distinct and diagnostic compared to family Solanaceae (potato/tomato family, actinomorphic flower with 5 fused sepals and petals, 5 stamens). Because these floral characteristics are consistent within a family and differ meaningfully between families, precise documentation of flower morphology through floral formulas and diagrams allows taxonomists to reliably place a newly encountered plant into its correct family, even when vegetative features might be ambiguous or highly variable, making flower morphology a cornerstone of plant classification and identification.

Class 11 Biology Chapter 5 – Solutions and Notes

For complete step-by-step answers and a quick summary, check the [Class 11 Biology Chapter 5 Solutions](#) and [Class 11 Biology Chapter 5 Revision Notes](#).

See also: [Chapter 1](#) | [Chapter 2](#) | [Chapter 3](#) | [Chapter 4](#) | [Chapter 5](#)

Practice more: [Chapter 1](#) | [Chapter 2](#) | [Chapter 3](#) | [Chapter 4](#)

Quick revision: [Chapter 1](#) | [Chapter 2](#) | [Chapter 3](#) | [Chapter 4](#)