

NCERT Exemplar Solutions of Class 11 Biology – Chapter: 5 – Morphology of Flowering Plants

MULTIPLE CHOICE QUESTIONS

1. Rearrange the following zones as seen in the root in the vertical section and choose the correct option.

- A. Root hair zone
- B. Zone of meristems
- C. Rootcap zone
- D. Zone of maturation
- E. Zone of elongation

Options:

- a. C, B, E, A, D
- b. A, B, C, D, E
- c. D, E, A, C, B
- d. E, D, C, B, A

Solution:

Option (a) is the answer.

Enhanced Explanation:

The correct sequence of zones in a root from tip to base is:

- **C (Rootcap zone)** - Protects the growing tip
- **B (Zone of meristems)** - Region of active cell division
- **E (Zone of elongation)** - Cells elongate and differentiate
- **A (Root hair zone)** - Absorption of water and minerals
- **D (Zone of maturation)** - Cells are fully differentiated

2. In an inflorescence where flowers are borne laterally in acropetal succession, the position of the youngest floral bud in the floral axis shall be

- a. Proximal
- b. Distal
- c. Intercalary
- d. Anywhere

Solution:

Option (b) is the answer.

Enhanced Explanation:

In acropetal succession, flowers develop from base to apex. Therefore, the youngest floral bud will be at the **distal** (farthest from base) position, as new buds continue to form at the growing tip.

3. The mature seeds of plants such as gram and peas possess no endosperm, because of

- a. These plants are not angiosperms

- b. There is no double fertilization in them
- c. The endosperm is not formed in them
- d. Endosperm gets used up by the developing embryo during seed development

Solution:

Option (d) is the answer.

Enhanced Explanation:

Gram and peas are legumes that initially form endosperm through double fertilization, but during seed development, the growing embryo consumes all the endosperm. Such seeds are called **exalbuminous** or **non-endospermic** seeds.

4. Roots developed from parts of the plant other than radicles are called

- a. Taproots
- b. Fibrous roots
- c. Adventitious roots
- d. Nodular roots

Solution:

Option (c) is the answer.

Enhanced Explanation:

Adventitious roots arise from any part of the plant body other than the radicle (primary root). Examples include roots from stems (prop roots in banyan), leaves (Bryophyllum), or old roots.

5. Venation is a term used to describe the pattern of arrangement of

- a. Floral organs
- b. Flower in inflorescence
- c. Veins and veinlets in a lamina
- d. All of them

Solution:

Option (c) is the answer.

Enhanced Explanation:

Venation refers specifically to the arrangement pattern of veins and veinlets in a leaf blade (lamina). The two main types are:

- **Reticulate venation** - Net-like pattern (dicots)
 - **Parallel venation** - Veins run parallel (monocots)
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6. The endosperm, a product of double fertilisation in angiosperms, is absent in the seeds of

- a. Coconut
- b. Orchids
- c. Maize

- d. Castor

Solution:

Option (b) is the answer.

Enhanced Explanation:

Orchid seeds are extremely small and lack endosperm. They are **exalbuminous** seeds. The other options (coconut, maize, castor) all have prominent endosperm and are **albuminous** seeds.

7. Many pulses of daily use belong to one of the families below (tick the correct answer)

- a. Solanaceae
- b. Fabaceae
- c. Liliaceae
- d. Poaceae

Solution:

Option (b) is the answer.

Enhanced Explanation:

Fabaceae (Leguminosae) is the family of legumes including gram, peas, beans, lentils, and other pulses. These plants are characterized by:

- Butterfly-shaped flowers
 - Pod fruits (legumes)
 - Root nodules with nitrogen-fixing bacteria
-

8. The placenta is attached to the developing seed near the

- a. Testa
- b. Hilum
- c. Micropyle
- d. Chalaza

Solution:

Option (b) is the answer.

Enhanced Explanation:

The **hilum** is the scar on the seed coat where it was attached to the placenta. It marks the point of attachment and is visible as a distinct mark on mature seeds (clearly seen in gram or kidney beans).

9. Which of the following plants is used to extract the blue dye?

- a. Trifolium
- b. Indigofera
- c. Lupin
- d. Cassia

Solution:

Option (b) is the answer.

Enhanced Explanation:

Indigofera tinctoria is the source of natural indigo dye, which produces a deep blue color. It has been historically important for textile dyeing and is still used today.

10. Match the following and choose the correct option

Column I

- A. Aleurone layer
- B. Parthenocarpic fruit
- C. Ovule
- D. Endosperm

Column II

- i. without fertilization
- ii. Nutrition
- iii. Double fertilization
- iv. Seed

Options:

- a. A-i, B-ii, C-iii, D-iv
- b. A-ii, B-i, C-iv, D-iii
- c. A-iv, B-ii, C-i, D-iii
- d. A-ii, B-iv, C-i, D-iii

Solution:

Option (b) is the answer.

Enhanced Explanation:

- **A. Aleurone layer - ii. Nutrition** (protein-rich layer in seeds)
- **B. Parthenocarpic fruit - i. without fertilization** (fruits developing without fertilization)
- **C. Ovule - iv. Seed** (ovule develops into seed after fertilization)
- **D. Endosperm - iii. Double fertilization** (formed by fusion of male gamete with polar nuclei)

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