

QB365 Question Paper Software
11th Standard - Biology

Anatomy of Flowering Plants Assertion and reason

Exam Time: 00:20 Hrs

Date: 2025-10-10

Total Marks: 10

Questions:

Assertion and reason

1. **Assertion** : Higher plants have meristematic regions for indefinite growth.

Reason : Higher plants have root and shoot apices.

Codes:

- (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) If Assertion is true but Reason is false.
- (d) If both Assertion and Reason are false.

2. **Assertion:** Lateral meristems include fascicular vascular cambium, interfascicular cambium and cork-cambium.

Reason: These are responsible for forming the secondary tissues.

Codes:

- (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) If Assertion is true but Reason is false.
- (d) If both Assertion and Reason are false.

3. **Assertion:** Higher plants have meristematic regions for indefinite growth.

Reason: Higher plants have root and shoot apices.

Codes:

- (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) If Assertion is true but Reason is false.
- (d) If both Assertion and Reason are false.

4. **Assertion:** Intercalary meristems increase length of plant like apical meristems.

Reason: It originates from the apical meristems.

Codes:

- (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) If Assertion is true but Reason is false.
- (d) If both Assertion and Reason are false.

5.**Assertion:** Apical and intercalary meristems contribute to the growth in length, while the lateral meristems cause increase in girth in maize.

Reason: Apical and intercalary meristems always increase the height of plants.

Codes:

- (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) If Assertion is true but Reason is false.
- (d) If both Assertion and Reason are false.

6.**Assertion:** In grasses and cereals, intercalary meristems are present.

Reason: Intercalary meristems form permanent tissues.

Codes:

- (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) If Assertion is true but Reason is false.
- (d) If both Assertion and Reason are false.

7.**Assertion:** Collenchyma forms the hypodermis of dicotyledon stems.

Reason : This is the reason for flexibility of dicotyledonous stems.

Codes:

- (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) If Assertion is true but Reason is false.
- (d) If both Assertion and Reason are false.

8.**Assertion :** Aerenchyma help in buoyancy to hydrophyte plants.

Reason : The large air chambers are present in aerenchyma.

Codes:

- (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) If Assertion is true but Reason is false.
- (d) If both Assertion and Reason are false.

9.**Assertion :** Collenchymatous cells show thickenings of pectin.

Reason : Collenchyma is thick walled dead tissue.

Codes:

- (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) If Assertion is true but Reason is false.
- (d) If both Assertion and Reason are false.

10. **Assertion:** A simple tissue is made of only one type of cells.

Reason: Various simple tissues in plants are parenchyma, collenchyma and sclerenchyma.

Codes:

(a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

(b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

(c) If Assertion is true but Reason is false.

(d) If both Assertion and Reason are false.

Answers Key:

Assertion and reason

1. (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

Explanation:

The root apex and shoot apex are meristematic in nature. These meristematic tissues are embryonic in origin. They are primary in origin because it develops from embryonic tissues and primary in function because they form the primary structure of the plant cell, the root apex and shoot apex, that live till the death of the whole plant. Hence, plants have the feature of indefinite growth.

2. (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

Explanation:

Secondary meristem is the meristem that occurs in the mature regions of roots and shoots of many plants, particularly those that produce woody axis and appear later than primary meristem. These are cylindrical meristems. Fascicular vascular cambium, interfascicular cambium and cork cambium are examples of lateral meristems. These are responsible for producing the secondary tissues.

3. (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

Explanation:

Higher plants have root and shoot apices where the cells are in state of continuous division. Here, they can grow indefinitely. Such regions are not found in animals.

4. (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

Explanation:

Intercalary meristems are intercalated in between the permanent tissues. The activities of these meristems also add to the length of the plant or its organs. They originate from the apical meristems when their portions get detached due to the growth of the organs. For example, in the grasses when the internodes complete their elongation, some cells at the base retain their meristematic activity and function as intercalary meristems. They lie just above the node.

5. (d) If both Assertion and Reason are false.

Explanation:

Apical and intercalary meristems always increase the height of plants and lateral meristem is responsible for secondary growth and doesn't occur in monocots.

6.

(b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

Explanation:

Intercalary meristems are intercalated in between the permanent tissues. They may be present either at the base of the internode as in the stems of various grasses and wheat; or at the base of the leaf as in Pinus; or at the base of a node as in mint (*Mentha viridis*).

7. (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

Explanation:

Collenchyma cells are elongated cells with irregularly thick cell walls that provide support and structure. Their thick cell walls are composed of the compounds cellulose and pectin. These cells are often found under the epidermis, or the outer layer of cells in young stems and in leaf veins

8. (c) If Assertion is true but Reason is false.

Explanation:

Aerenchyma is a spongy tissue that forms spaces or air channels in the leaves, stems and roots of some plants, which allows exchange of gases between the shoot and the root.

9. (c) If Assertion is true but Reason is false.

Explanation:

Collenchyma is made up of living cells with unevenly thickened cell wall. Their cell wall is made up of cellulose and pectin. Collenchyma are present beneath the epidermis of young stem, petioles and midrib of leaves, etc. These are absent in underground tissues and leaves and stems of monocots.

10. (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

Explanation:

The tissues in which the cells of which have lost the capacity to divide and have attained a permanent shape, size and function due to morphological, biochemical and physiological differentiation are permanent tissues. Permanent tissues can be classified as simple, complex and special on the basis of composition. A simple permanent tissue is that tissue which is made up of similar permanent cells that carry out the same function or have the same structure. Simple permanent tissues are of three types- parenchyma, collenchyma and sclerenchyma.