

QB365 Question Paper Software
11th Standard - Biology
Plant Kingdom Assertion and reason

Exam Time: 00:20 Hrs

Date: 2025-10-10

Total Marks: 10

Questions:

Assertion and reason

1. **Assertion** : Algae and fungi are grouped in thallophyta.

Reason : Algae and fungi show no differentiation in thallus.

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:** The colour of brown algae varies from olive green to brown.

Reason: In brown algae, fucoxanthin is responsible for colour variation.

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:** Spirogyra shows haplontic life cycle.

Reason: Zygotic meiosis occurs in Spirogyra.

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:** The sex organs in bryophytes are jacketed.

Reason: Bryophytes are land 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.

5. **Assertion:** Among the liverworts, the sporogonium of Riccia is the simplest.

Reason: Sporophyte consists of capsule only.

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:** Selaginella and Salvinia are homosporous.

Reason: In Selaginella and Salvinia, similar kind of spores are produced .

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:** Pinus shows formation of annual rings.

Reason: It grows in areas of environmental fluctuation.

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 :** Angiosperm and Gymnosperms both form spermatophyta.

Reason : Angiosperm and Gymnosperms both form triploid endosperm.

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:** Heterotrichous filaments are more advanced than branched filaments.

Reason: Heterotrichous filaments have prostrate and projecting system.

Codes:

- A) If both the assertion and the reason are true and the reason is a correct explanation of the assertion
- B) If both the assertion and reason are true but the reason is not a correct explanation of the assertion
- C) If the assertion is true but the reason is false
- D) If both the assertion and reason are false
- E) If the assertion is false but reason is true

10.**Assertion :** The bryophytes exist in two phases - gametophyte and sporophyte.

Reason : The sporophyte is nutritionally independent.

Codes:

- A) If both the assertion and the reason are true and the reason is a correct explanation of the assertion
 - B) If both the assertion and reason are true but the reason is not a correct explanation of the assertion
 - C) If the assertion is true but the reason is false
 - D) If both the assertion and reason are false
 - E) If the assertion is false but reason is true
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Answers Key:

Assertion and reason

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

Explanation:

On the basis of (i) Thallus like non-vascular plant body.

(ii) Simple, unicellular non-jacketed sex organs and

(iii) No embryo development after gametic union, the algae and fungi have long been grouped together in thallophyta. The algae and fungi are the result of parallel development and do not indicate any phylogenetic relationship.

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

Explanation:

Brown algae show a range of colour from olive green to various shades of brown depending upon the amount of fucoxanthin the xanthophyll pigment, present in them.

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

Explanation:

Haplontic life cycle is characterized by a haploid thallus and zygotic meiosis. It is also called as haplobiontic because only a single type of free living individual is involved in the life cycle. Spirogyra shows haplontic life cycle and therefore, it shows zygotic nucleus as well.

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

Explanation:

Bryophytes are a group of non-vascular land plants. The sex organs in the bryophytes are multicellular and jacketed. The jacket of sterile cells around the sperms and eggs is an adaptation to a land habitat. It protects the sex cells against the drying effects of air.

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

Explanation:

The sporogonium (capsule) of Riccia is the simplest among the liverworts. It lacks the foot and the seta. Elaters are absent. Unlike other liverworts, in Riccia, the embryo, sporogonium and spore mother cells develop no chloroplasts. Thus, no photosynthesis occurs there. The sporophyte is totally dependent upon the gametophytic thallus.

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

Explanation:

All the spores are of similar kinds in majority of the pteridophytes; such **plants** are called homosporous. Genera like Selaginella and Salvinia produce two kinds of spores i.e. macro (large) spores and micro (small) spores, hence, are known as heterosporous.

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

Explanation:

The secondary wood shows well marked growth rings which are formed annually due to environmental fluctuations. Each annual ring possesses a zone of spring and an autumn wood. Spring wood is formed during spring season under availability of enough water and minerals. It possess large polygonal, thin walled and wide tracheids with large bordered pits. Autumn wood is formed during autumn season. It possesses smaller, thick walled and narrow tracheids with small bordered pits. It is evident that the size of tracheids shows a marked variation with regards to amount of moisture available in the respective season.

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

Explanation:

In angiosperms, endosperm is formed through triple fusion (fusion of sperms with two polar nuclei of the central cell) and is triploid. In gymnosperms, endosperm is formed before fertilization and therefore, it is haploid.

9. A) If both the assertion and the reason are true and the reason is a correct explanation of the assertion

Explanation:

In branched filament, the branch arises as a lateral outgrowth when occasional cell in a filament divides in a second plane. In the heterotrichous filament branching of filament reaches the climax. It is the most advanced and elaborate type of plant body in the green algae and is found in the chaetophorales. In the evolutionary transition from the filament, a portion of the filamentous algal thallus developed vertically while the rest which constituted the basal part remained prostrate. The thallus in this case is thus divided into two parts, prostrate system and projecting system.

10. C) If the assertion is true but the reason is false

Explanation:

The bryophytes have evolved a life which comprises two phases-gametophyte and sporophytes. The gametophyte (haploid) is concerned with sexual reproduction and constitutes the most conspicuous, nutritionally independent phase in the life cycle. The sporophyte is dependent partly or wholly on the gametophyte for nutritional purpose.