

QB365 Question Paper Software
11th Standard - Biology
Biological Classification Assertion and reason

Exam Time: 00:20 Hrs

Date: 2025-10-10

Total Marks: 10

Questions:

Assertion and reason

1. **Assertion** : Bacteria are prokaryotic.

Reason : Bacteria do not possess true nucleus and membrane bound cell organelles.

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:** Several ruminant animals contain methanogens within their gut.

Reason: Methanogens help in the production of methane from dung of ruminants.

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:** Anabaena inhabits root nodules of leguminous plants.

Reason: Leguminous plants are an example of symbiotic nitrogen fixation.

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** : Euglena is studied as an animal as well as a plant.

Reason : Euglena is more an animal than a plant.

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:** Erythrocytic merozoites form gametocytes.

Reason: Gametocytes are of two types – male and female.

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** : Neurospora is commonly called water mould.

Reason : It belongs to basidiomycetes fungi.

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** : Symbiosis is furnished by mycorrhiza.

Reason : In mycorrhiza, symbiosis is established between fungus and alga.

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**: These lichens are upright and have pendulous organisation and are attached to substratum by a discoid structure.

Reason: Fruticose are well branched leafy lichens

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** : Fruticose lichens have the simplest thallus.

Reason : The thallus is attached only at the base by a flattened disc.

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** : Surface of skin is impervious to water.

Reason : Surface of skin is covered by stratified cuboidal epithelium.

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:

Bacterial cell is prokaryotic. It lacks true nucleus and membrane bound organelles.

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

Explanation:

Methanogens occur in marshy areas where they convert formic acid and carbon dioxide into methane with the help of hydrogen. Some of the methanogen archaeobacteria live as symbionts (e.g., *Methanobacterium*) inside rumen or first chamber in the stomach of herbivorous animals that chew their cud (ruminants, e.g., cow, buffalo) and thus, helps in production of methane from dung of these animals. These archaeobacteria are helpful to the ruminants in fermentation of cellulose.

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

Explanation:

Anabaena found symbiotically in the root nodules of many leguminous plants helps in N_2 fixation.

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

Explanation:

Euglena is a typical example of mastigophora. It is phytoflagellate as it possesses both chloroplast and flagella. It is autotrophic in sunlight, but becomes heterotrophic in dark. Because of its two fold nutritional abilities, it is usually studied as a plant as well as an animal. But it is more an animal than plant because of

- (a) The absence of cellulose cell wall overlying the plasma membrane.
- (b) Presence of centriole.
- (c) Reserve food is paramylon which is not a true starch.
- (d) Response to various stimuli like an animal.

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

Explanation:

Some erythrocytic merozoites enter fresh RBCs and form rounded gametocytes (gamonts). The gametocytes are of two types – (i) Smaller male gametocytes or microgamete and (ii) Larger female gametocytes or macrogamete.

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

Explanation:

Neurospora belongs to class ascomycetes in which ascospores are produced in sac like asci . Neurospora is commonly called as pink or red bread mould. It can be grown easily in laboratory conditions so, used in genetics experiments.

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

Explanation:

Mycorrhiza represents mutualistic symbiosis between fungus and roots of higher plants. Fungus helps in absorption of minerals and water more efficiently and protect plant roots from infection. Fungus also gets food from plant

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

Explanation:

Fruticose are well branched shrubby lichens with upright and pendulous organization. These are attached to substratum by a discoid structure. Plant body can be divided into prostrate, leafy and lobed thallus.

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

Explanation:

Fruticose lichens have a most complex thallus which is slender and freely branched. The branches may be cylindrical or ribbon-like and form thread-like or twig-like tufts. The thallus is attached only at the base by a flattened disc.

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

Explanation:

Surface of skin is impervious to water because it is covered by stratified keratinised squamous epithelium. This epithelium has many superficial layers of horny, scale like remains of dead squamous cells and several deeper layer of living polygonal cells. Heavy deposits of the insoluble protein keratin are present in the dead superficial layers which makes this epithelium impervious to water. Stratified cuboidal epithelium, on the other hand lines the inner surface of sweat gland, larger salivary and pancreatic ducts.