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

Exam Time: 00:20 Hrs | Date: 2025-10-10
Total Marks: 10

## Questions:

### Assertion and reason

1. **Assertion:** Secondary metabolites are produced in small quantities and their extraction from the plant is difficult and expensive.
**Reason:** Secondary metabolites can be commercially produced by using tissue culture technique.
**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 :** Comparative biochemistry provides a strong evidence in favour of common ancestory of living beings.
**Reason :** Genetic code is universal.
**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 :** Human diet should compulsorily contain glycine, serine and tyrosine.
**Reason :** Essential amino acids can not be synthesized in the human body.
**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 :** Vegetable oils are fats which are present in plant cells in soluble form.
**Reason :** Vegetable oils occur only in cells of embryo.
**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 :** Desmolysing enzymes are those which catalyse the reactions by hydrolysis.
**Reason :** Digestive enzymes are hydrolysing in nature.
**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.

6. **Assertion :** Enzymes are defined as biological proteins.
**Reason :** Chemically all enzymes are globular proteins.
**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.



7. **Assertion (A) :** The distance between the two strands of DNA double helix is uniform..
**Reason (R) :** In ds DNA purine paris with pyrimidine and viceversa.
**Codes:**
1) Both (A)and (R) are true and (R) is the correct explanation of (A)
2) Both (A) and (R) are true and (R)· is not the correct explanatio of (A)
3) (A) is true but (R) is false
4) Both (A) and (R) are false

8. **Assertion (A):** Complexity of protein moleculeincreases from primary structure to quaternary structure.
**Reason (R):** In quaternary structure two or more polypeptide chains are linked by different types of bonds.
**Codes:**
1) Both (A)and (R) are true and (R) is the correct explanation of (A)
2) Both (A) and (R) are true and (R)· is not the correct explanation of (A)
3) (A) is true but (R) is false
4) Both (A) and (R) are false

9. **Assertion (A):** Haemoglobin molecule shows quarter nary structure.
**Reason (R):** It consists of 4 polypeptide chains i.e. 2 and 2ß chains.
**Codes:**
1) Both (A)and (R) are true and (R) is the correct explanation of (A)
2) Both (A) and (R) are true and (R)· is not the correct explanation of (A)
3) (A) is true but (R) is false
4) Both (A) and (R) are false

10. **Assertion (A) :** Nucleic acids show secondary structure.
**Reason (R) :** Watson and Crick model of DNA is an example for secondary structure.

**Codes:**

1) Both (A)and (R) are true and (R) is the correct explanation of (A)
2) Both (A) and (R) are true and (R)· is not the correct explanation of (A)
3) (A) is true but (R) is false
4) Both (A) and (R) are false

---

## Answers Key:

### Assertion and reason

1. (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
   **Explanation:**
   Secondary metabolites are biosynthetically derived from primary metabolites but more limited in distribution in plant kingdom being restricted to a particular taxonomic group. By culture media using tissue culture technique, secondary metabolites can be produced on a large scale.
2. (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
   **Explanation:**
   Comparative biochemistry provides a strong evidence for common ancestors of living beings (e.g. proteins lymph, enzymes, hormones, blood groups etc.)
3. (d) If both Assertion and Reason are false.
   **Explanation:**
   Essential amino acids are those which are taken from food and not synthesized in the body whereas non-essential amino acids need not be supplied in the diet and are synthesized in the body. Glycine, serine and tyrosine are non-essential amino acids.
4. (d) If both Assertion and Reason are false.
   **Explanation:**
   Vegetable oils and fats are present in plants in insoluble form. They are extracted mostly from seeds. In several cereals, they are obtained from embryo. Olive and palm oils are obtained from flesly pericarp of the fruit. Sometimes oils are also extracted from roots, stem and leaves.
5. E) If the assertion is false but reason is true
   **Explanation:**
   Desmolysing enzymes are those which catalyse reactions by the other methods other than hydrolysis, e.g., aldolases, dehydrogenases, oxidases, etc. Digestive enzymes function by catalysing hydrolysis. Larger molecules are broken into smaller ones. They are grouped into three types - proteolytic (breaks protein molecule), amylolytic (breaks sugar molecule) and lipolytic (breaks lipid molecule).
6. A) If both the assertion and the reason are true and the reason is a correct explanation of the assertion
   **Explanation:**
   We know that all biological reactions are catalysed by special catalysis called enzyme, thus enzymes are defined as biological proteins. We also know that enzymes are small organic molecules which are weakly held to the protein and can be easily sepertated by dialysis. Therefore chemically all enzymes are globular proteins.
7. 1) Both (A)and (R) are true and (R) is the correct explanation of (A)
8. 2) Both (A) and (R) are true and (R)· is not the correct explanation of (A)
9. 1) Both (A)and (R) are true and (R) is the correct explanation of (A)

10. 2) Both (A) and (R) are true and (R)· is not the correct explanation of (A)