

QB365 Question Paper Software
11th Standard - Biology
Structural Organisation in Animals Assertion and
reason

Exam Time: 00:20 Hrs

Date: 2025-10-10

Total Marks: 10

Questions:

Assertion and reason

1. **Assertion** : Specialization of cells is advantageous for the organisms.

Reason : It increases the operational efficiency of an organism.

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** : Surface of skin is impervious to water.

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

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:** Stomach and intestine of our body has columnar epithelium.

Reason: Columnar epithelium helps in secretion and absorption.

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:** Simple epithelium covers surfaces exposed to mechanical or chemical abrasions.

Reason: Protection of underlying tissues is the major function of simple epithelium.

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:** Compound epithelium play important role in absorption, secretion and excretion.

Reason: Compound epithelium is found in the stomach lining.

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 :** Cartilage (protein matrix) and bone (calcium matrix) are rigid connective tissue.

Reason : Blood is connective tissue in which plasma is the matrix.

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:** Connective tissues are most abundant and widely distributed in the body of complex animals.

Reason: Connective tissues link and support other tissues or organs of the 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.

8.**Assertion:** Tendons attach one bone to another bone.

Reason: Ligaments attach skeletal muscles to bones.

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:** Presence of connective tissue inside the brain is essential for conduction of nerve impulse.

Reason: Connective tissue hold together the nerve cells of brain.

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:** Tendon is present in all bone joints.

Reason: Tendon connects the bones together and holds them in position.

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:

Specialization of cells into tissue, organ and organ systems is advantageous for the organisms. It increases the operational efficiency through division of labour which avoids duplication of work.

2. (c) If Assertion is true but 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 duct

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

Explanation:

The columnar epithelium is composed of a single layer of tall and slender cells. Their nuclei are located at the base. Free surface may have microvilli. They are found in the lining of stomach and intestine and help in secretion and absorption.

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

Explanation:

Simple epithelium does not cover surfaces exposed to mechanical or chemical abrasions because it is made up of a single layer of cells, hence it is not effective in protecting the underlying tissue. Simple epithelium occurs mainly on secretory and absorptive surfaces. There is another types of epithelial tissue called compound epithelium which being multilayered is effective in providing protection to underlying tissues, therefore, covers the surfaces exposed to mechanical and chemical abrasions.

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

Explanation:

Compound epithelium performs the function of providing protection against chemical and mechanical stress. Thus, it has limited role in absorption, secretion and excretion. This epithelium is found in the moist surface of buccal cavity, pharynx, inner lining of duct of salivary gland but not in stomach lining.

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

Explanation:

Cartilage comprises of mucopolysaccharide called chondroitin sulphate. Bone is a hard connective tissue while blood is a fluid connective tissue.

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

Explanation:

Connective tissue is the most abundant and widely distributed tissue of the body. It connects different tissues or organs and provides support to various structures of animal body. The connective tissue consists of living cells and extra-cellular matrix. It includes soft connective tissues and specialised tissues like cartilage, bone, adipose and blood.

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

Explanation:

Tendon is made up of white fibrous tissue. Tendon connects a skeletal muscle to bone. It is tough and inelastic. Ligament is strong and elastic and made up of yellow elastic tissue with some collagen fibres. Ligament connects a bone to another bone.

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

Explanation:

Ordinary connective tissue is absent inside the central nervous system. i.e. brain and spinal cord and has no function in the conduction of nerve impulse. The neurons of nerve tissue inside the brain and spinal cord are held together by supporting cells called neuroglia cells. Neuroglia cells resemble neurons and have long radiating processes but no nissl granules.

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

Explanation:

It is not tendon but another type of connective tissue called ligament which is present in most of the bone joints and connect the bones together. Ligament also helps in holding the bones in position. Tendon, on the the other hand, is a dense, strong, fibrous connective tissue which forms strong inextensible attachment of a skeletal muscle to a bone