QB365 Question Paper Software
11th Standard - Biology
The Living World Assertion and reason

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

Total Marks: 10

Questions:

Assertion and reason

1. **Assertion :** Chemotaxonomy is classifying organisms at molecular level.
   Reason : Cytotaxonomy is classifying organisms at cellular level.
   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:** Metabolism refers to the sum of chemical reactions that occur within living organisms.
   Reason: Metabolic reactions occur simultaneously inside living organisms.
   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:** Growth in living organism occurs by division of cells and increase in biomass.
   Reason: Growth in living organism occurs by accumulation of material by external agency.
   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:** In fungi, vegetative reproduction occurs by fragmentation and budding.
   Reason: Asexual reproduction in fungi, occurs through formation of asexual spores.
   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:** Systematics is defined as the science of diversity of organisms in evolutionary context.
Reason: It includes inter-relationship between organisms.
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:** ICBN is responsible for giving scientific name to plant.
Reason: It uses articles, photographs and recommendations to name 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.

7. **Assertion:** The family Solanaceae includes a number of genera like Solanum, Petunia, Atropa, etc.
Reason: Family contains one or more related genera.
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:** Herbarium is also known as “Dry garden”.
Reason: It is a collection of plant parts that have been dried, pressed, preserved on sheets.
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:** Study of internal structure is called anatomy.
Reason: It is useful for phylogentic study.
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:** DNA serves as hereditary material.
Reason: DNA functions as blue-print for building and running cellular machiner.
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

Answers Key:

Assertion and reason

1. (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
Explanation:
All the members of a species have similar karyotype (cytotaxonomy) – there is similarity in the number, size, shape and behaviour of chromosomes. At the molecular level, there is similarity in the types of proteins, enzymes, hormones and other biochemicals.
2. (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
Explanation:
All living organisms are made of chemicals. These chemicals, small and big, belonging to various classes, sizes, functions, etc., are constantly being made and changed into some other biomolecules. These conversions are chemical reactions or metabolic reactions. There are thousands of metabolic reactions occurring simultaneously inside all living organisms, be they unicellular or multicellular.
3. (d) If both Assertion and Reason are false.
Explanation:
Accumulation of material by external agency cause extrinsic growth which can not be the feature of living organism.
4. (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
Explanation:
In fungi, vegetative reproduction occurs by fragmentation, budding (yeast), sclerotia, rhizomorphs, etc. Asexual reproduction occurs through formation of asexual spores such as zoospores, sporangiospores, chlamydospores, oidia, coidia, etc.
5. (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
Explanation:
Simpson (1961) has defined systematics as the branch of biology that deals with the diversity of organism at every level of classification. It deals with cataloging plants, animals and other organisms into categories that can be named, remembered, compared and studied. Study of only one organism of a group provides sufficient information about

the remaining members of that group. It also helps in developing evolutionary relationships with or without the help of taxonomic studies of fossils.

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

   Explanation:

   International Code of Botanical Nomenclature (ICBN) is responsible for giving scientific name to plants. It uses articles, photos and recommendations to plant. pool.

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

   Explanation:

   Family is a taxonomic category which contains one or more related genera. All the genera of a family have some common features and they are separable from genera of a related family by important characteristics. The family Solanaceae includes a number of genera like Solanum, Petunia, Atropa, etc. due to certain similarities.

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

   Explanation:

   Herbarium is also known as “Dry garden”. It is a collection of plant parts that have been dried, pressed and preserved on sheets. The procedure of pressing and drying specimens for storage has been an amazingly successful one in terms of preservation of detail and specimen longevity, and the plants so preserved provide a concrete basis for past, present and future studies.

9. B) If both the assertion and reason are true but the reason is not a correct explanation of the assertion

   Explanation:

   Anatomy is the study of internal structure which can be observed with unaided eye after dissection. By studying anatomy of large number of organisms, it is useful for knowing phylogenetic similarity (homology) and phylogenetic dissimilarity (analogy).

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

    Explanation:

    DNA is the genetic material in most of living organism except the plant viruses and some bacteriophages. It is the only molecule which can replicate itself or can form its own carbon copy. The phenomenon is called molecular reproduction. All the information required for growth, differentiation, running cellular machinery and reproduction is contained in DNA molecules. These genetic information of DNA are like the blue print. During cell division (which involve DNA replication, the daughter cell receive the same blue print or genetic material as in the parental cell.)