

CHAPTER 1

THE LIVING WORLD

MULTIPLE CHOICE QUESTIONS

1. As we go from species to kingdom in a taxonomic hierarchy, the number of common characteristics
 - a. Will decrease
 - b. Will increase
 - c. Remain same
 - d. May increase or decrease
2. Which of the following 'suffixes' used for units of classification in plants indicates a taxonomic category of 'family'?
 - a. - Ales
 - b. - Onae
 - c. - Aceae
 - d. - Ae
3. The term 'systematics' refers to:
 - a. Identification and study of organ systems of plants and animals
 - b. Identification and preservation of plants and animals
 - c. Diversity of kinds of organisms and their relationship
 - d. Study of habitats of organisms and their classification
4. Genus represents
 - a. An individual plant or animal
 - b. A collection of plants or animals
 - c. A group of closely related species of plants or animals
 - d. None of these
5. The taxonomic unit 'Phylum' in the classification of animals is equivalent to which hierarchical level in classification of plants
 - a. Class
 - b. Order

- c. Division
 - d. Family
6. Botanical gardens and zoological parks have
- a. Collection of endemic living species only
 - b. Collection of exotic living species only
 - c. Collection of endemic and exotic living species
 - d. Collection of only local plants and animals
7. Taxonomic key is one of the taxonomic tools in the identification and classification of plants and animals. It is used in the preparation of
- a. Monographs
 - b. Flora
 - c. Both a & b
 - d. None of these
8. All living organisms are linked to one another because
- a. They have common genetic material of the same type
 - b. They share common genetic material but to varying degrees
 - c. All have common cellular organization
 - d. All of above
9. Which of the following is a defining characteristic of living organisms?
- a. Growth
 - b. Ability to make sound
 - c. Reproduction
 - d. Response to external stimuli
10. Match the following and choose the correct option:
- | Column I | Column II |
|------------|---------------------|
| A. Family | i. <i>tuberosum</i> |
| B. Kingdom | ii. Polymoniales |
| C. Order | iii. <i>Solanum</i> |
| D. Species | iv. Plantae |
| E. Genus | v. Solanacea |

Options

- a. A-v, B-iv, C-ii, D-i, E-iii
- b. A-iv, B-iii, C-v, D-ii, E-i
- c. A-iv, B-iii, C-v, D-i, E-ii
- d. A-iv, B-iii, C-ii, D-v, E-i

VERY SHORT ANSWER TYPE QUESTIONS

1. Linnaeus is considered as Father of Taxonomy. Name two other botanists known for their contribution to the field of plant taxonomy.
2. What does ICZN stand for?
3. Couplet in taxonomic key means _____ .
4. What is a Monograph?
5. *Amoeba* multiplies by mitotic cell division. Is this phenomena growth or reproduction? Explain.
6. Define metabolism.
7. Which is the largest botanical garden in the world? Name a few well known botanical gardens in India.

SHORT ANSWER TYPE QUESTIONS

1. A ball of snow when rolled over snow increases in mass, volume and size. Is this comparable to growth as seen in living organisms? Why?
2. In a given habitat we have 20 plant species and 20 animal species. Should we call this as 'diversity' or 'biodiversity'? Justify your answer.
3. International Code of Botanical Nomenclature (ICBN) has provided a code for classification of plants. Give hierarchy of units of classification botanists follow while classifying plants and mention different 'Suffixes' used for the units.
4. A plant species shows several morphological variations in response to altitudinal gradient. When grown under similar conditions of growth, the morphological variations disappear and all the variants have common morphology. What are these variants called?

5. How do you prepare your own herbarium sheets? What are the different tools you carry with you while collecting plants for the preparation of a herbarium? What information should a preserved plant material on the herbarium sheet provide for taxonomical studies?
6. What is the difference between flora, fauna and vegetation? *Eichhornia crassipes* is called as an exotic species while *Rauwolfia serpentina* is an endemic species in India. What do these terms exotic and endemic refer to?
7. A plant may have different names in different regions of the country or world. How do botanists solve this problem?
8. Brinjal and potato belong to the same genus *Solanum*, but to two different species. What defines them as separate species?
9. Properties of cell organelles are not always found in the molecular constituents of cell organelles. Justify.
10. The number and kinds of organism is not constant. How do you explain this statement?

LONG ANSWER TYPE QUESTIONS

1. What is meant by living? Give any four defining features of life forms.
2. A scientist has come across a plant which he feels is a new species. How will he go about its identification, classification and nomenclature.
3. *Brassica campestris* Linn
 - a. Give the common name of the plant.
 - b. What do the first two parts of the name denote?
 - c. Why are they written in italics?
 - d. What is the meaning of Linn written at the end of the name?
4. What are taxonomical aids? Give the importance of herbaria and museums. How are Botanical gardens and Zoological parks useful in conserving biodiversity?
5. Define a taxon. What is meant by taxonomic hierarchy? Give a flow diagram from the lowest to highest category for a plant and an animal. What happens to the number of individuals and number of shared characters as we go up the taxonomical hierarchy?
6. A student of taxonomy was puzzled when told by his professor to look for a key to identify a plant. He went to his friend to clarify what 'Key' the professor was referring to? What would the friend explain to him?

7. Metabolism is a defining feature of all living organisms without exception. Isolated metabolic reactions *in vitro* are not living things but surely living reactions. Comment.
8. Do you consider a person in coma-living or dead?
9. What is the similarity and dissimilarity between “whole moong daal” and “broken moong daal” in terms of respiration and growth? Based on these parameters classify them into living or nonliving?
10. Some of the properties of tissues are not the constituents of its cells. Give three examples to support the statement.

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