Biology 1st PU

QUESTION BANK

UNIT 1: DIVERSITY IN THE LIVING WORLD

CHAPTER 1: THE LIVING THINGS

(Questions carrying one mark)

1. What is habitat?
2. Define Biodiversity.
3. What is population?
4. What is community?
5. What is living?
6. What is metabolism?
7. Mention any two significance of cell division.
8. Define growth.
9. What is reproduction?
10. Mention the type of reproduction in Amoeba.
11. Name the structural and functional unit of an organsism.
12. What is binomial nomenclature?
13. Who introduced the binomial nomenclature?
14. Name the basic unit of classification.
15. What is Taxonomy?
16. What is Taxon?
17. What is Taxonomic category?
18. What is Taxonomic hierarchy?
19. Define species.
20. Define genus.
21. Define family.
22. Define order.
23. Define class.
24. Define phylum.
25. Define division.
26. Define kingdom.
27. What are zoos?

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CHAPTER 1: THE LIVING THINGS

Answer for one mark questions

1. The place in which living organisms grow is called habitat.
2. The variety observed in living organisms, their habitat and ecosystems.
3. Total number of individuals of a species in a particular place is called population.
4. Different population in a particular habitat.
5. It is the condition of the organisms which is characterized by metabolisms, has the ability to self-replicate, self-organize and interact is called living.
6. The sum total of all the chemical reactions occurring in our body is metabolism.
7. Living organisms grow by cell division. In unicellular organisms it leads to reproduction. Cell division helps to replace the lost cell in the tissues.
8. Growth in living organisms is from inside, accompanied by increase in cell number, body length and body mass.
9. Production of progeny possessing features of parents by living organisms.
10. Cell division or Fission.
    Growth and reproduction takes place by cell division.
11. Cell is the structural and functional unit of body of an organism.
12. Naming of living organisms by the same name throughout the world is called nomenclature and practice of calling one organism by two name,
13. Carolus Linnaeus.
14. Species is the basic unit of classification.
15. Characteristics, identification, classification and nomenclature is called Taxonomy.
16. Classification unit in Linnaean hierarchy is called Taxon.
17. Each step or rank in hierarchy is called Taxonomic category.
18. All successive taxonomic categories are Taxonomic hierarchy.
19. Group of individual organisms with fundamental similarities capable of breeding among themselves is called species.
20. Genes comprises a group of related species.
21. Family is a group of related genera.
22. Group of closely related orders.
23. Group of closely related classes.
24. Phylum is the higher category to class consists of different classes with few similar characters. In animals closely related classes from phylum.
25. Division is the higher category consists of different phylum with few similar characters. In plant closely related phylum form division.
26. Kingdom is the highest category in hierarchy. Animal kingdom comprises all animal phyla.
27. These are the places where wild animals are kept in a protected environment.

Chapter – 1
LIVING WORLD

Questions carrying two marks

1. Mention any four characters of living organisms.
2. How do the plants and animals differ in growth pattern?
3. Mention the animal in which the following type of asexual reproduction is seen
   (i)Spore reproduction
   (ii)Budding
   (iii)Regeneration
   (iv)Fragmentation
4. Mention any four environmental stimuli to which organisms respond.
5. Expand the following (i) ICBN (ii) ICZN
6. What is Binomial nomenclature? Give scientific name of mango.
7. Write the universal rules of Binomial nomenclature.
8. Write Taxonomic categories (Linnaean hierarchy) showing hierarchical arrangement in ascending order.
9. Write Linnaean hierarchy for (a)Man (b)Potato (c)Lion (d)Tiger (e)Wheat (f)Housefly
10. Mention any four Taxonomical aids which helps in preserving the specimens.
11. What is Herbarium? How Herbarium helps in preserving plant specimens.
12. What Is Botanical garden? Give example.
13. What is Botanical Museum? How does it help in Taxonomic studies?
14. What is Key? Mention different types?
15. How are keys are useful in studying Taxonomy?

Answers for questions carrying two marks

1. The living organisms are characterized by the following features :
    a. Growth.
    b. Reproduction.
    c. Metabolism.
    d. Cellular organization.

2. In plants - growth occurs by cell division, continuously throughout their life. In animals growth is seen only up to certain age.

3. Different types of organisms and reproductions are :

Types of asexual reproduction	**Organisms**
Spore production	Fungi
Budding	Hydra, Yeast
Regeneration	Planaria
Fragmentation	algae and mosses

4. External factors like light, temperature, water, pollutants.

5. Expansions are :

    ICBN - **I**nternational **C**ode for **B**otanical **N**omenclature.

    ICZN - **I**nternational **C**ode for **Z**oological **N**omenclature.

6. Universally accepted method of naming organisms by scientific name. It has two components - **Generic** and **Specific** name.

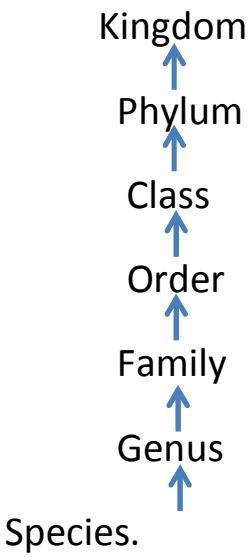
    Ex. Mango – Mangiferaindica.

    Generic name - Mangifera.

    Specific name - indica.

7. Universal rules of nomenclature are as follows:
    a. Biological names are generally in latin and written in itialics.
    b. The first word in biological name represents the genus. The second component denotes the specific epithet.
    c. Both the words in a biological name, when hand written areseperately underlined, or printed in italics to indicate their latin origin.
    d. The first word denoting genus starts with a capital letter while the specific epithet starts with a small letter.
        - Ex. Mango—Mangiferaindica.

8. Hierarchical arrangement in ascending order :



9. Organisms with their taxonomic categories :

Common Name	Biological Name	Genus	Family	Order	Class	Phylum
Man	*Homo sapiens*	Homo	Homonidae	Primata	Mammalia	Chordata
Housefly	*Muscadomestica*	Musca	Muscidae	Diptera	Insecta	Arthropoda
Lion	*Pantheraleo*	Panthera			Mammalia	Chordata
Tiger	*Pantheratigris*	Panthera			Mammalia	Chordata

Common Name	Biological Name	Genus	Family	Order	Class	Division
Mango	*Mangiferaindica*	Mangifera	Anacardiaceae	Sapindales	Dicotyledonae	Angiospermae
Wheat	*Triticum aestivum*	Triticum	Poaceae	Poales	Monocotyledonae	Angiospermae

10. Four taxonomical aids are
    a. Herbarium.
    b. Botanical gardens.
    c. Museum.
    d. Zoological parks.

11. Herbarium is a store house of collected plant specimens that are dried, pressed, and preserved on sheets.
    a) Herbarium sheets are arranged according to a universally accepted system of classification.
    b) These specimens along with their description on herbarium sheets become a store house.

c) The herbarium sheets also carry a label providing information about date and place of collection, English, local, and botanical names. Family and collectors name.
d) Herbaria serve as quick referral system in taxonomical studies.

12. These are specialised gardens have collections of living plants for reference. Plant species in botanical gardens are grown for identification purposes and each plant is labelled by indicating its botanical name and family.

    Example:

    i. Kew[England]
    ii. Indian botanical garden Howrah[India]
    iii. National Botanical Research Institute Lucknow [India]
    iv. Lalbagh botanical garden Bangalore[India].

13. Biological museums are generally set up in educational institutes such as schools and colleges .Museums have collections of preserved plants and animal specimens for study and reference.
    a) Specimens are preserved in the container or jars in a preservative solution.
    b) Plant and animal specimens may also be preserved as dry specimens.
    c) Insects are preserved in insect boxes, after collecting, killing and pinning.
    d) Larger animals like birds and mammals are usually stuffed preserved.
    e) Museums often have collection of skeletons of animals too.

14. Keys are type of taxonomical aid used for identification of plants and animals based on the similarities and dissimilarities.
    a) Keys are based on the contrasting characters generally in a pair.
    b) It represents choice made between two opposite options this results in acceptance of only one specimen and rejection of the other.
    c) Each statement in the key is called a lead.
    d) Separate taxonomic keys are required for each taxonomic category such as family, genus, species for identification purpose.
    e) Keys are analytical in nature:

    Different types of keys are:

    i. Flora
    ii. Manuals
    iii. Monographs
    iv. Catalogues

15. Keys are helpful in studying in taxonomy as :

    a. Keys help in correct identification and knowing the habitats of plants
    b. Keys are Index to the plant species in a given area.
    c. Flora provides information about distribution of plants in a given area.
    d. Manuals are useful in providing information for identification of names of species found in an area.
    e. Monographs contain information on any one taxon.