

CBT JULY 2024
CLASS – XII : BIOLOGY

GENERAL INSTRUCTION :

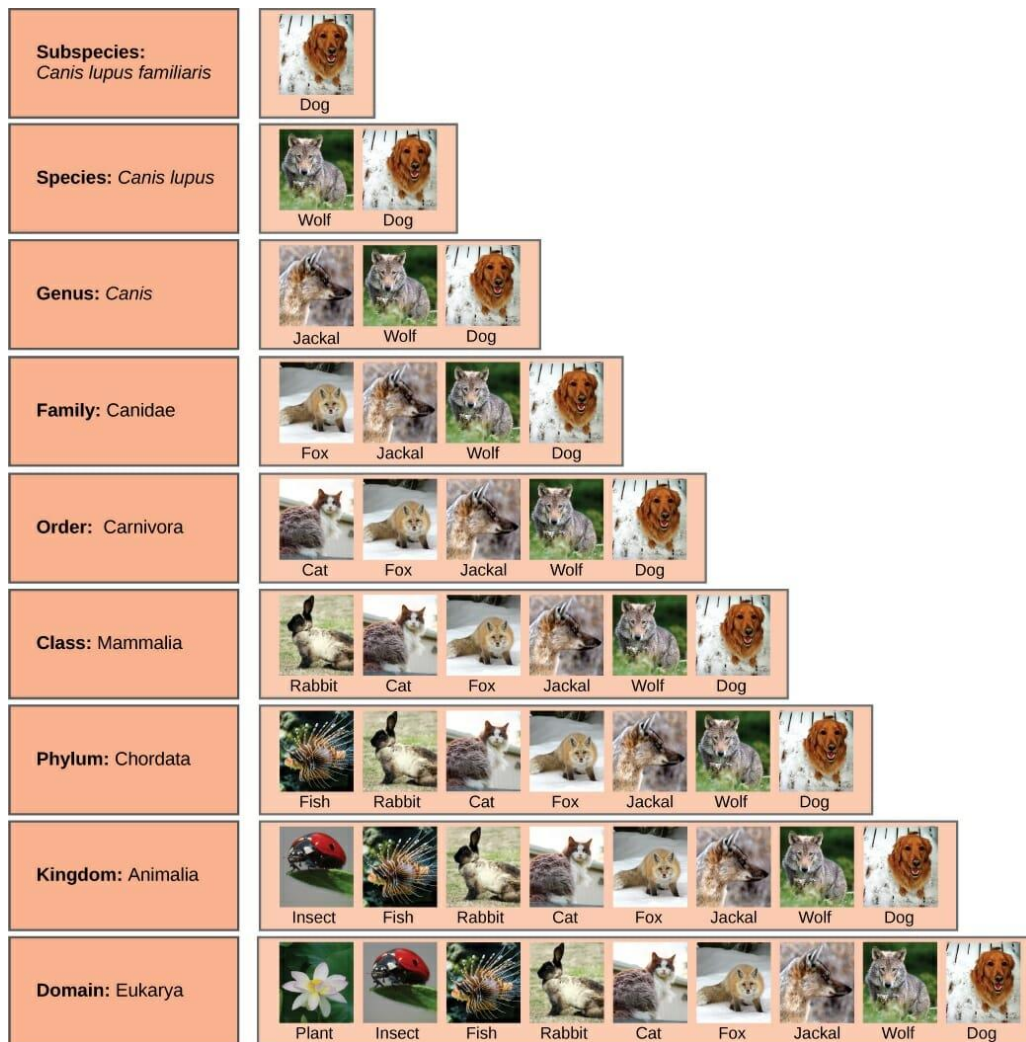
SCORE AND REVIEW OF ALL THE QUESTIONS WILL BE PROVIDED IN THE EMAIL TO ALL THE STUDENTS ON NEXT DAY AND AFTER CLOSING OF QUIZ TIME.

IMPORTANT : ALL THE STUDENTS SHOULD FILL THE CORRECT SCHOOL NAME FROM DROP DOWN BUTTON

CHAPTER 1. Diversity in the living world

Taxonomic Categories

The term taxonomy was coined by A. P. Candolle and consist of seven major taxonomic categories. It is the sequence of categories in ascending or descending order from to kingdom to the bottom-most species. The hierarchy holds two categories namely intermediate and obligate. Obligate is followed strictly and ranges from kingdom to species, but Intermediate is just its opposite.



1. In the hierarchy of classification, the lowest obligatory category in five kingdom classification is

- (a) Order
- (b) Species
- (c) Phylum
- (d) Class

Ans. (b) : In the hierarchy of classification, the lowest obligatory category in five kingdom classification is Species.

2. Select the wrong statements :

- A. Lower the taxon, more are the characteristics that the members within the taxon share.
- B. Order is the assemblage of genera which exhibit a few similar characters.
- C. Cat and dog are included in the same family Felidae
- D. Binomial nomenclature was introduced by Carolus Linnaeus.

- (a) A, B and C only
- (b) B and C only
- (c) A and D only
- (d) C and D only

Ans. (b) : In taxonomy the order is assemblage of family which show similar characters while similar characters are less in number as compared to different genera included in family.

• Cat and dog are included in different family because Cat belong to family Felidae while Dog belong to family Canidae.

Hence, option (b) and (c) both are wrong statements.

3. A group of related genera, with still less number of similarities as compared to the genus and species constitutes

- (a) order
- (b) class
- (c) family
- (d) division

Ans. (c) : A group of related genera with less no. of similarities are kept in a family taxonomic groups which comes between order & genus.

• Family is represented by a group of related genera that are more similar to each other than with the genera of other families.

Ex. A cat (*Felis domestica*) and a lion (*Panthera leo*) belongs to the "cat" family - Felidae.

4. Taxonomic hierarchy refers to

- (a) stepwise arrangement of all categories for classification of plants and animal
- (b) a group of senior taxonomists who decide the nomenclature of plants and animals
- (c) a list of botanists or zoologists who have worked on taxonomy of a species or group
- (d) classification of a species based on fossil record

Ans. (a) :

Feedback:- Taxonomic hierarchy stepwise arrangement of all categories for classification of plants and animals.

In taxonomic hierarchy each category referred to as unit of classification infact, represents a rank and is commonly termed as taxon.

5. Assertion: Sub species has a geographical area and geographically isolated from other sub

species.

Reason: When members of a species are geographically isolated they give rise to a sub species.

- (A) If both the (A) and the (R) are true and the (R) is a correct explanation of the (A).
- (B) If both the (A) and the (R) are true but the (R) is not a correct explanation of the (A).
- (C) If the (A) is true but (R) is false.
- (D) If both the (A) and the (R) are false.

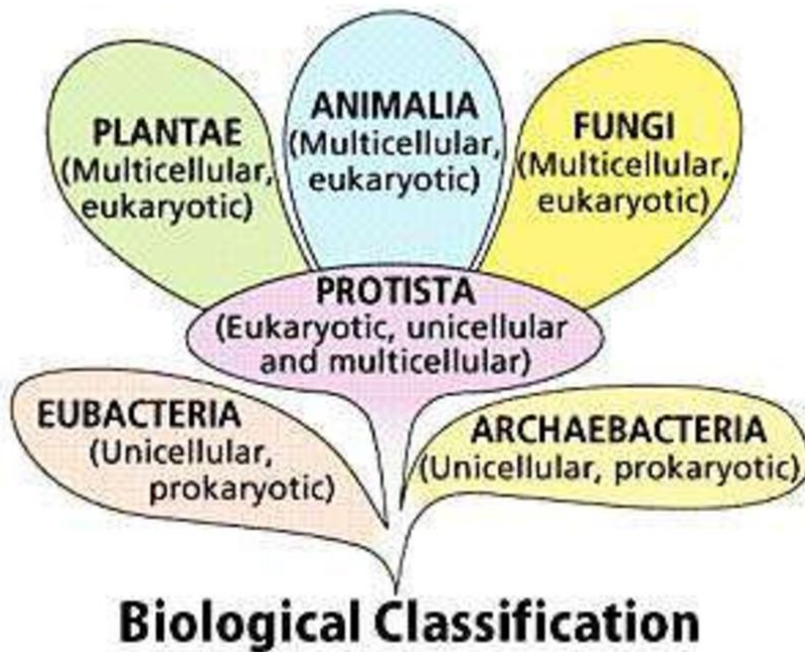
Ans. (a) :

FEEDBACK :- Sub -species is a category in taxonomy that ranks below the species which include geographically isolated group of individual not all species have sub-species because when members of a species are geographically isolated then they give rise to a sub -species.

Biological Classification : The process of grouping together various organisms according to their similarities, dissimilarities and phylogenetic descent is known as biological classification. There have been various attempts to classify organisms. The earliest was by **Aristotle**, who classified plants into herbs shrubs and trees. He classified animals into two groups, based on the presence and absence of red blood.

Linnaeus gave the Two Kingdom system of classification and divided living organisms into Plantae and Animalia.

R.H. Whittaker proposed the Five Kingdom system of classification and classified organisms, based on cellular structure, complexity, mode of nutrition, phylogenetic relationship and ecological role performed by them.



1. Consider the following statements with respect to characteristic features of the Kingdom.
 - A. In Animalia the mode of nutrition is autotrophic
 - B. In Monera the nuclear membrane is present

C. In Protista the cell type is prokaryotic

D. In Plantae the cell wall is present

Of the above statements

(a) A alone is correct

(b) B alone is correct

(c) C alone is correct

(d) D alone is correct

Ans. (d) :

FEEDBACK: - (d) In Plantae, the cell wall is present.

(a) In Animalia, the mode of nutrition is Holozoic or Heterotrophic, Saprophytic.

(b) In Monera, the nuclear membrane is absent.

(c) In Protista, the cell type is unicellular Eukaryotic.

2. Match the following and choose the correct combination from the options given :

Column-I (Kingdom)

Column-II (Class)

(A) Plantae

(1) Archaeobacteria

(B) Fungi

(2) Euglenoids

(C) Protista

(3) Phycomycetes

(D) Monera

(4) Algae

(a) A-4, B-3, C-2, D-1

(b) A-1, B-2, C-3, D-4

(c) A-3, B-4, C-2, D-1

(d) A-4, B-2, C-3, D-1

Ans. (a)

FEEDBACK :-

Column- I

Column II

(A) Plantae

(4) Algae

(B) Fungi

(3) Phycomycetes

(C) Protista

(2) Euglenoid

(D) Monera

(1) Archaeobacteria

So the correct ans A -4, B - 3, C- 2, D- 1

3. Assertion (A) : Bacteria have three basic shapes, i.e. round, rod, spiral.

Reason (R) : Cocci and bacilli may form clusters or chain of a definite length,

(A) If both the (A) and the (R) are true and the (R) is a correct explanation of the (A).

(B) If both the (A) and the (R) are true but the (R) is not a correct explanation of the (A).

(C) If the (A) is true but (R) is false.

(D) If both the (A) and the (R) are false.

(a) A (b) B

(c) C (d) D

Ans. (b) :

FEEDBACK :- Bacteria have four basic shapes

(1) Rounded or coccus- eg Micrococcus agilis

(2) Rod shaped or bacillus- eg Lactobacillus, E. Coli.

(3) Commo shaped or vibria - Vibrio cholerae

(4) Spiral shaped or spirillum- Spirillum volutans

4. A student observed a water drop under microscope. He found a photosynthetic organism. Its cell walls form two thin overlapping shells, which fit together as in a soap box. Which of the following organism it is

- (a) Euglenoid
- (b) Dinoflagellate
- (c) Sporozoans
- (d) Diatom

5. Which of the following statements is incorrect?

- (a) Claviceps is a source of many alkaloids and
- (b) Conidia are produced exogenously and ascospores endogenously.
- (c) Yeasts have filamentous bodies with long thread-like hyphae.
- (d) Morels and truffles are edible delicacies.

Ans. (c) :

Yeast is solitary cell or unicellular living being known as *Saccharomyces* because it is unicellular and lacks filamentous structure, however, it forms a short temporary filamentous structure called pseudo-mycelium.