

Q2. Which organelles are present in living things?

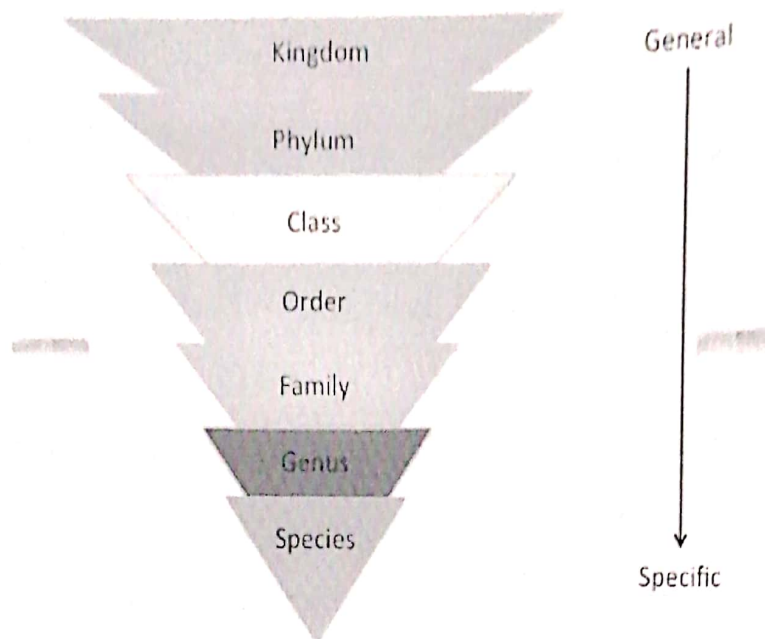
Ans. All living things are made of cells. These cells have

- Cytoplasm
- A cell membrane
- A chemical called DNA , making up their genetic material.
- Ribosomes , which are used for making proteins inside the cell.
- Enzymes that are used to help the cell to carry out anaerobic respiration.

Q3. What are different methods of classification?

Ans. In the past, the only ways that biologists could decide which organisms were most closely related to each other was to study the structure of their bodies. They looked carefully at their morphology and anatomy. But we now have new tools to help to work out evolutionary relationships, and one of the most powerful of these is study of DNA.

Q4. Describe the different levels of classification.



1. **Kingdom:** The largest group of classification.

Example: Monera , Protoctista, Fungi, Plantae and Animalia.

2. **Phylum:** Organisms that ranks above class and below kingdom. Example: Phylum arthropoda contains four classes.

3. **Class:** Level of classification between phylum and order.

4. **Order:** a taxonomic rank used in the classification of organisms and recognized by the nomenclature codes.

5. **Family:** Level of classification between order and genus.

6. **Genus:** A group of similar and closely related species.

7. **Species:** A group of organisms capable of interbreeding to produce fertile offsprings.

Q5. Why the sequence of basis in DNA and amino acid in proteins are used as a more accurate means of classification.

Ans. DNA is genetic material, passed on from one generation to the next. Each DNA molecule is made up of strings of smaller molecules, containing four different basis called Adenine (A), Thymine (T), Guanine (G) and cytosine (C) that can be arranged in any order. Biologists can compare the sequence of basis of organisms from two different species, the more similar the base sequence, the more closely related the species are to one another.

Q6. Write the aim of classification system base on evolutionary relationship.

Ans: classification system based on evolutionary relationships are most useful way to organize biological diversity because the grouping is not only results in an organized classification. It also contains and conveys information about living and extinct organisms based on evolutionary ancestry.

Q7. Write the importance of classification.

1. To identify living organisms easily.
2. To learn variety of organisms within short period of time.

Q8. What is binomial naming system? Write the rules of binomial naming system.

Ans: Binomial means two names. It is the system of classifying organisms using two names, genus and species which are written in Latin form. Example: *Canis lupus* or we could write also like this Canis lupis, it is the scientific name of wolf.

Rules of binomial names:

1. The name has two parts; Genus and Species
2. Genus name start with capital letter and species name start with small letter.
3. If we write binomial we should underline separately.
4. If the names are printed it should be in Italic.