

**Class: 9**

**Subject: Biology**

**Topic: Diversity In Living Organism**

**No. of Questions: 20**

Q1. Why do we classify organisms?

Sol. There are millions of species on this earth. For anybody, it is impossible to study about each of them in his lifetime. Classification makes it easy to study the organisms; on the basis of certain common characters.

Q2. Give three examples of the range of variations that you see in life forms around you.

Sol. Three examples of the range of variations in life forms:  
Ants, cockroaches, spiders, houseflies, etc. live in the same building. They look entirely different from each other yet all of them belong to arthropoda.  
Humans, monkeys, cats and dogs lives in the same neighbourhood. They look entirely different yet all of them belong to mammalia.  
A nearby park may show wide variety of plants; right from small grass to a giant banyan tree.

Q3. Which do you think is a more basic characteristic for classifying organisms?

- (a) the place where they live.
- (b) the kind of cells they are made of. Why?

Sol. The kind of cells an organism is made of is more basic characteristic of classifying organism because it gives a scientific angle to classification. Moreover, a particular dwelling place can be full of organisms of a wide variety.

Q4. What is the primary characteristic on which the first division of organisms is made?

Sol. Organisation of nucleus is the primary characteristic on which the first division of organisms is made. Based on this, organisms can be either prokaryotic or eukaryotic.

Q5. On what bases are plants and animals put into different categories?

Sol. Plants are autotrophs, while animals are heterotrophs. Cell wall is present in plant cells, while it is absent in animal cells. Plants do not need to move from one place to another, while most of the animals need to move in search of food.

Q6. Which organisms are called primitive and how are they different from the so-called advanced organisms?

Sol. An organism which is simple is called primitive. On the other hand, an organism with high level of division of labour; by formation of organs and organ system is called advanced.

Q7. Will advanced organisms be the same as complex organisms? Why?

Sol. Complexity in body design evolves because of necessity to adapt according to the changing environment. Hence, a complex organism would be an advanced one; in comparison to a simple organism.

Q8. What is the criterion for classification of organisms as belonging to kingdom Monera or Protista?

Sol. Organisms which are prokaryotes belong to the kingdom Monera. On the other hand, organisms which are eukaryotes and unicellular belong to the kingdom Protista.

Q9. In which kingdom will you place an organism which is single-celled, eukaryotic and photosynthetic?

Sol. Plant Kingdom

Q10. In the hierarchy of classification, which grouping will have the smallest number of organisms with a maximum of characteristics in common and which will have the largest number of organisms?

Sol. Species will have the smallest number of organisms with a maximum of characteristics in common. On the contrary, kingdom will have the largest number of organisms.

Q11. Which division among plants has the simplest organisms?

Sol. Thallophyta

Q12. How are pteridophytes different from the phanerogams?

Sol. In pteridophytes, the reproductive organs are hidden and they do not produce seeds. In phanerogams, reproductive organs are conspicuous and they produce seeds.

Q13. How do gymnosperms and angiosperms differ from each other?

Sol. Seeds are naked in gymnosperms, while they are covered in angiosperms. Gymnosperms do not bear flowers, while angiosperms bear flowers

Q14. How do poriferan animals differ from coelenterate animals?

Sol. In porifera, body has numerous pores, which are absent in coelenterates. Body has a cavity in coelenterates, while it is absent in porifera.

Q15. How do annelid animals differ from arthropods?

Sol. Segmented body in annelids, while true segmentation is absent in arthropods. Arthropods have joined appendages, which are absent in annelids.

Q16. What are the differences between animals belonging to the Aves group and those in the mammalian group?

Sol. In aves, body is covered with feathers; while in mammals, body is covered with hairs. Mammary glands are absent in aves. Forelimbs of aves are modified into wings which is not the case in mammals. Aves are oviparous, while most of the mammals are viviparous.

Q17. What are the differences between amphibians and reptiles?

Sol. Amphibians need water to lay eggs and fertilization is external. Reptilians do not need water to lay eggs and fertilization is internal. Amphibians use both skin and lungs for breathing. Reptilians breathe through lungs only.

Q18. What are the advantages of classification?

Sol. Following are the advantages of classification:

- Classification helps us identify the living organisms easily.
- It makes study of such a wide variety of bio-life in systematic manner.
- It help us learning different plants and animals, similarities and dissimilarities among them.
- Enables us understand how complex organisms evolve over the time.
- Classification help us understand the inter-relationships among different groups.
- It forms the basis of other branches of bio-sciences like bio-geography, environmental biology, ecology etc.
- It also provides a systematic way to identify known and unknown organisms.
- Classification systems are adapted internationally. This aids communication between scientists.

Q19. Define Taxon.

Sol. Taxon is a unit of classification of organisms which can be recognized to a definite category at any level of classification, e.g., fishes, birds, insects, etc.

Q20. Who wrote the book The Origin of Species?

Sol. Charles Darwin - 1859 - He gave the idea of evolution.

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