

Chapter – 1

The Living World

Multiple Choice Question and Answers

Choose the correct answer

Question 1.

A living organism is differentiated from non-living structure based on

- (a) Reproduction
- (b) Growth
- (c) Metabolism
- (d) Movement

Answer:

- (c) Metabolism

Question 2.

A group of organisms having similar traits of a rank is

- (a) Species
- (b) Taxon
- (c) Genus
- (d) Family

Answer:

- (a) Species

Question 3.

Every unit of classification regardless of its rank is

- (a) Taxon
- (b) Variety
- (c) Species
- (d) Strain

Answer:

- (a) Taxon

Question 4.

Which of the following is not present in same rank?

- (a) Primata
- (b) Orthoptera
- (c) Diptera
- (d) Insecta

Answer:

- (a) Primata

Question 5.

What taxonomic aid gives comprehensive information about a taxon?

- (a) Taxonomic Key
- (b) Herbarium
- (c) Flora
- (d) Monograph

Answer:

- (a) Taxonomic Key

Question 6.

Who coined the term biodiversity?

- (a) Walter Rosen
- (b) AG Tansley
- (c) Aristotle
- (d) AP de Candole

Answer:

- (a) Walter Rosen

Question 7.

Cladogram considers the following characters –

- (a) Physiological and Biochemical
- (b) Evolutionary and Phylogenetic
- (c) Taxonomic and systematic
- (d) None of the above

Answer:

(b) Evolutionary and Phylogenetic

Question 8.

Molecular taxonomic tool consists of –

- (a) DNA and RNA
- (b) Mitochondria and Endoplasmic reticulum
- (c) Cell wall and Membrane proteins
- (d) All the above

Answer:

(a) DNA and RNA

Question 9.

Differentiate between probiotic and pathogenic bacteria.

| Probiotic bacteria | | Pathogenic bacteria | |
|--------------------|---|---------------------|---|
| 1. | Probiotic bacteria are beneficial bacteria. | 1. | Pathogenic bacteria are harmful bacteria. |
| 2. | The bacteria which cause fermentation are examples of probiotic bacteria. | 2. | The disease-causing bacteria such as Mycobacterium tuberculosis are pathogenic. |

Question 10.

Why mule is sterile in nature?

Answer:

The male donkey is crossed with the female horse the mule can be produced, As the donkey is not crossed with its same species the offsprings are sterile.
List any five salient features of the family Felidae.

1. They have sharp claws to catch the prey and to eat.
2. They have cutting incisors and large sharp canines to cut the meat.
3. They are free living.
4. They come out at night for searching for prey.
5. They have a strongly built body.

6. They have sharp sensory organs. (Eg.) Flaring, Smell, Vision, Touch
7. Its weight may range from 2 kg to 300 kgs.

Question 11.

List any five salient features of the family Felidae.

Answer:

- The species in the Felidae family are carnivores or omnivores.
- Felids are generally solitary with a few exceptions.
- They have sharp vision, hearing and a strong sense of smell.
- They have short faces and their paws have toes in the 5 forefeet and 4 toes in the hind feet.
- Most Felids live in the wild e.g. cat, tiger, lion, cheetah.

Question 12.

What is the role of Charles Darwin in relation to concept of species?

Answer:

Charles Darwin has written the book "Origin of Species" in 1859. In this book, he has explained the relationship between evolution and the origin of species through natural selection.

Question 13.

Why elephants and other wild animals are entering into human living area?

Answer:

Elephants and other wild animals enter into human living area because of the loss of their habitat, deforestation, mono-culture vegetation by destroying forests.

Question 14.

What is the difference between a Zoo and a wildlife sanctuary?

Answer:

| Zoo | | Wild Life Sanctuary | |
|-----|--|---------------------|--|
| 1. | Zoo is a place where animals and birds are in captivity of artificially created habitat. | 1. | The wildlife sanctuary is the natural habitat of wild animals and birds. |
| 2. | Public can have easy access to the zoo. | 2. | Public does not have easy access to the wildlife sanctuaries. |
| 3. | Zoo is based on commercial aspects. | 3. | Sanctuaries are non-commercial. |
| 4. | Animals are caged and hence they are not free to roam about. | 4. | In a sanctuary, animals can roam about freely. |

Question 15.

Can we use recent molecular tools to identify and classify organisms?

Answer:

- The short genetic marker in an organism's DNA is used to identify the organism belonging to a particular species – For this molecular technique DNA, bar-coding is used.
- By the degree of genetic similarity between pools of DNA sequences is measured.
- To identify an individual from a sample of DNA by looking at unique patterns in their DNA is used.
- The difference in homologous DNA sequences that can be detected by the presence of fragments of different lengths after digestion of DNA samples is called Restriction Fragment Length Polymorphisms analysis (RFLP)
- To amplify a specific gene on a portion of a gene by using polymerase chain reaction are used as taxonomical tools.

Question 16.

Explain the role of Latin and Greek names in Biology.

Answer:

- Before the modern period of the early modern period, learning is done in Greek and Latin.

- Educated people (scientists) knew Greek and Latin.
- Other's simply borrowed the coined words and terms of educated people or scientists.
- Greek and Latin were the primary languages taught everywhere uniquely it is the common language of Western Europe that too is used and approved as the language of science.
- Greek is more of the language of science than Latin.
- Plants and Animals had local popular names in many other languages. So a system is needed to be devised so that they were to be recognized everywhere universally.
- When Carious Linnaeus (1707 -1778) formulated his binomial system of naming plants he did it in Greek and Latin continued this practice and made it universally acceptable as binomial nomenclature.
- ICBN and ICZN – Indian Code of Botanical and Zoological nomenclature specify that not only the name and its description should be translated in Latin.