

SCIENCE & TECHNOLOGY – II

Topic Test

Topic: 1. Heredity and Evolution

Time : 1 hour

Std: X

Total Marks: 20

Q.1. (A) Choose the correct alternative. [2]

- i. Connecting links suggest that amphibians have evolved from
 - (A) mammals
 - (B) reptiles
 - (C) fishes
 - (D) aves
- ii. The origin of the universe is explained by
 - (A) Darwin's theory
 - (B) Big-bang theory
 - (C) Speciation
 - (D) Lamarckism

Q.1. (B) Solve the following questions. [3]

- i. Find the odd one out.
Coccyx, Intestine, Wisdom teeth, Appendix
- ii. Name the following.
Book published by Darwin explaining evolution through natural selection.
- iii. True or False. If false, write the correct sentence.
Geographical isolation leads to speciation.

Q.2. (A) Give scientific reasons. (Any one) [2]

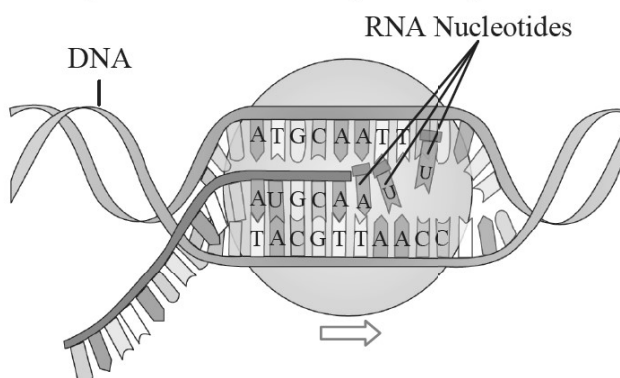
- i. Morphological evidences suggest that dog, sheep and wolf have a common origin.
- ii. Forelimb of bat and flipper of whale have different functions but indicate common ancestry.

Q.2. (B) Solve the following questions. (Any one) [2]

- i. Write a short note on Darwin's theory of natural selection.
- ii. Distinguish between Lamarckism and Natural selection.

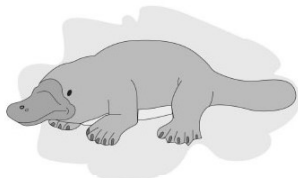
Q.3. Solve the following questions. (Any two) [6]

- i. Observe the diagram and answer the questions given below it.

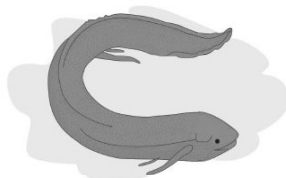


- a. Identify the cellular process depicted in the diagram.
- b. Which enzyme is required for this process?
- c. In which part of the cell does this process occur?
- ii. Embryological evidences provide proof of evolution. Explain.

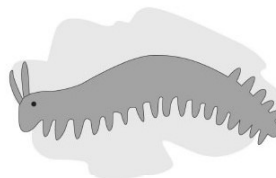
- iii. Explain how each of the following organism provides proof of evolution.



(a)



(b)



(c)

Q.4. Solve the following questions. (Any one)

[5]

- i. Explain the process of formation of complex proteins.
- ii. Read the given paragraph and answer questions based on it.

Evolution is an everlasting process of changes. Various proofs are available in support of the theories of evolution which suggest that different groups of organisms may have evolved from a common ancestor. Similarities in morphological characters such as leaf shape, leaf venation, leaf petiole, etc., occur in case of plants indicating similarities between different plant groups. There are also similarities between the anatomical structure of bones of human hand, foreleg of ox, forelimb of bat and flipper of whale.

 - a. Similarities in the leaf shape, venation and size of plants provide which proof of evolution?
 - b. What do the similarities in structure of bones indicate?
 - c. Which proof of evolution do similarities in bone structure provide?
 - d. Give any other example of morphological evidence.
 - e. Mention any two examples of animals that have a common ancestor based on anatomical evidence.