

Date: 21-Jun-2026**Time: 60min****Heredity and Evolution****Marks: 20****Q.1(A) Choose the correct alternative. (2)**

i Which of the following nitrogenous base is NOT present in DNA?

- (A) Thymine (B) Uracil
(C) Adenine (D) Guanine

ii Connecting links suggest that amphibians have evolved from

- (A) mammals (B) reptiles
(C) fishes (D) aves

Q.1(B) Answer the following. (3)

i _____: Sudden changes in genes :: Evolution : Gradual changes in specific characters

ii *Peripatus* : Connecting link :: Wisdom tooth : _____

iii DNA: Thymine :: RNA: _____

Q.2(A) Give scientific reasons. (Attempt any 1) (2)

i Duck billed platypus is a connecting link.

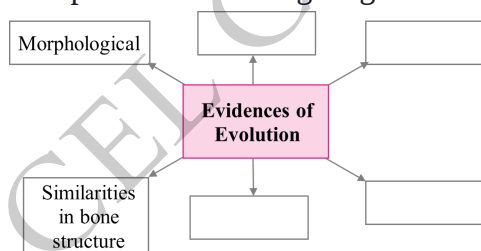
ii Explain carbon dating method.

Q.2(B) Answer the following. (Attempt any 1) (2)

i(a) What is the function of the appendix of our digestive system?

(b) What is morphological evidence of evolution?

ii Complete the following diagram.



iii Explain Darwin's theory of natural selection.

Q.3 Answer the following. (Attempt any 2) (6)

i Fill in the blanks by selecting the correct word from the bracket and complete the given paragraph.

(two, *Ramapithecus*, modern sciences, seven, Neanderthal man, lemurs, agriculture, orangutans)

The last dinosaurs disappeared approximately _____ crore years ago. Monkey-like animals are said to have evolved from some ancestors who were similar to modern _____.

The first human-like animals with erect posture evolved about _____ crore years ago. The

first record of this human-like ape is _____ from East Africa. _____ can be considered as the first member of the class – wise-man. About 10 thousand years ago, wise-man started to practice

ii(a) Write a note on ‘transcription’.

(b) What are vestigial organs?

iii Embryological evidences provide proof of evolution. Explain.

Q.4 Answer the following. (Attempt any 1)

(5)

i(a) Define fossil. Explain importance of fossils as proof of evolution.

(b) Write a short note on embryology.

(c) First living material formed in ocean.

ii Read the given passage and answer the following questions.

When we observe the features such as the structure of the mouth, position of the eyes, nostrils, ear pinnae, and thick hair on the body, similarities become apparent. Likewise, plants show resemblances in characteristics such as leaf shape, venation, and petiole structure. These similarities suggest that both animals and plants may share a common origin. Additionally, while the human hand, foreleg of ox, flipper of whale, and patagium of bat serve different functions, their underlying bone structures are remarkably similar.

i. Which type of evidence is demonstrated by the similarities in the structure of the mouth, position of the eyes, nostrils, ear pinnae, and thick hair on the body, with respect to evolution?

ii. What type of evolutionary evidence is indicated by the similarity in bone structures of the human hand, foreleg of an ox, flipper of a whale, and patagium of a bat?

iii. What do the similarities in some external and internal characteristics of organisms indicate about their evolutionary relationships?

iv. Besides the evidence of evolution mentioned in the given paragraph, what are two other types of evidence that support the theory of evolution?

v. What does "organizational progressive development of plants and animals from ancestors with distinct structural and functional characteristics" mean?