

QB365 Question Bank Software Study Materials

Zoology - Evolution Important 2 Marks Questions With Answers (Book Back and Creative)

12th Standard

Biology

Total Marks : 40

2 Marks

20 x 2 = 40

- 1) List out the major gases seems to be found in the primitive earth.

Answer : Methane, carbondioxide, ammonia and water vapour.

- 2) Mention the main objections to Darwinism.

Answer : (i) Darwin failed to explain the mechanism of variation.

(ii) Darwinism explains the survival of the fittest but not the arrival of the fittest.

(iii) He focused on small fluctuating variations that are mostly non-heritable.

(iv) He did not distinguish between somatic and germinal variations.

(v) He could not explain the occurrence of vestigial organs, over specialization of some organs like large tusks in extinct mammoths, oversized antlers in the extinct Irish deer, etc.,

- 3) How does Neanderthal man differ from the modern man in appearance?

Answer : (i) Neanderthal human was found in Neander Valley, Germany with a brain size of 1400 cc and lived between 34,000 - 1,00,000 years ago.

(ii) They differ from the modern human in having semierect posture, flat cranium, sloping forehead, thin large orbits, heavy brow ridges, protruding jaws and no chin.

- 4) State the Biogenetic law.

Answer : Ernst Von Haeckel propounded the "biogenetic law or theory of recapitulation" which states that the life history of an individual (ontogeny) briefly repeats or recapitulates the evolutionary history of the race (phylogeny). In other words "Ontogeny recapitulates Phylogeny".

- 5) Name the five basic factors involved in the process of organic evolution according to modern synthetic theory.

Answer : Gene Mutation, Chromosomal mutation, Genetic recombination, Natural selection, Reproductive isolation.

- 6) List the four eras of geological time scale.

Answer : (a) Precambrian era

(b) Paleozoic era

(c) Mesozoic era

(d) Cenozoic era

- 7) Wing of a cockroach and the wing of parrot. What do you infer from this statement with reference to evolution?

Answer : Both the wings of cockroach and bird are different in structure but similar in their function. Thus, they are analogous structure that brings about convergent evolution.

- 8) Name the scientists who propounded the following theories.

(a) Mutation theory

(b) Chemical theory of evolution

Answer : Mutation theory was propounded by Hugo de Vries.

Chemical theory of evolution was propounded by Oparin and Haldane

- 9) What is meant by petrification?

Answer : When animals die the original portion of their body may be replaced molecule for molecule by minerals and the original substance being lost through disintegration. This method of fossilization is called petrification. The principle minerals

involved in this type fossilization are iron pyrites, silica, calcium carbonate and bicarbonates of calcium and magnesium.

- 10) Who proposed Mutation theory? Name the organism on which the experiment was carried out.

Answer : Mutation theory was put forth by Hugo de Vries. Based on the experiments in *Oenothera lamarckiana* (The evening primrose plant).

- 11) Mention any two differences between *Homo habilis* and *Homo erectus*

Answer :

HOMO HABILIS	HOMO ERECTUS
The brain capacity was between 650-800 cc. They were probably vegetarians.	The brain capacity was around 900 cc. They probably ate meat.

- 12) State the significance of study of fossils in evolution.

Answer : Fossils help us to know the geological period on earth in which the organisms were present to understand the process of the evolution. So that fossils are the documents of evolution.

- 13) How does analogous organ support the theory of organic evolution?

Answer : (i) Analogous organs have different developmental origin and structural design but perform similar function.
(ii) E.g., The wings of birds and insects are analogous organs indicating that they have different ancestors but have a convergent evolution. In this way, analogous organ supports the theory of organic evolution.

- 14) State the significance of coelacanth in evolution.

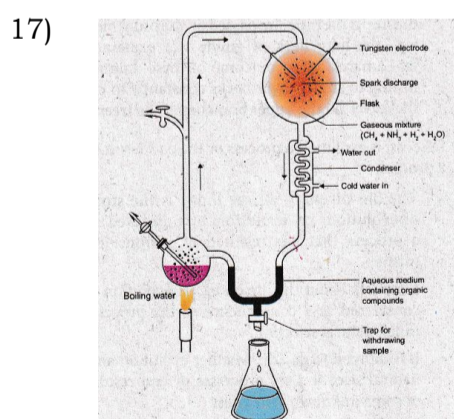
Answer : Coelacanth, a fish was caught in 1938 in South Africa, which was thought to be extinct. These were lobefins, fish like animals with stout and strong fins, that lived both in water as well as on land. Their discovery was significant as they proved that amphibians have evolved from fish-like organism. Lobefins are the ancestors of modern days frogs and salamanders.

- 15) What is evolution?

Answer : The term evolution is used to describe heritable changes in one or more characteristics of a population of species from one generation to the other.

- 16) (a) What is the theory of spontaneous generation?
(b) Who coined the term abiogenesis?

Answer : (a) According to the theory of spontaneous generation or Abiogenesis, living organisms originated from non-living materials and appeared through stepwise chemical and molecular evolution over million of years.
(b) Thomas Huxley coined the term abiogenesis.



- (a) Name the scientist who had used the above set-up.
(b) Name the gases Miller used in his experiments on origin of life.
(c) How did this experiment support evolution?

Answer : (a) S. L. Miller used this setup.
(b) Methane, ammonia, hydrogen and water vapour
(c) Miller created in laboratory scale the conditions similar to the primitive earth.

- 18) What are called connecting links?

Answer : The organisms which possess the characters of two different groups (transitional stage) are called connecting links. Example *Peripatris* (connecting link between Annelida and Arthropoda), *Archeopteryx* (link between Reptiles and Aves).

19) All vertebrate embryos show some similarities at an early stage. Mention two such similarities what do they indicate why?

Answer : (i) All embryos of vertebrates develop a row of gill slits, which are functional only in fish and not in other vertebrates.
(ii) Notochord is present in all vertebrate embryos such similarities indicate that they have descended/evolved from a common ancestor.

20) Define isolating mechanism and explain its types with suitable examples.

Answer : Isolation is the separation of the members of a single population into sub populations so that genetic integrity of the subpopulation can be maintained. An isolating barrier is any evolved character of the two species that stops them from interbreeding.