



BIOLOGY

BOOKS - ARIHANT PRAKASHAN

ORGANIC EVOLUTION

**Topic 1 Practice Questions Exams Textbook S
Other Imp Question 1 Mark Questions Exam S
Questions**

1. Fill in the blanks with correct answer(s):

Recapitulation theory was postulated by_____.



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2. Life originated on earth about

A. 2.5 billion years ago

B. 3.5 billion years ago

C. 4.5 billion years ago

D. 5.5 billion years ago

Answer: C



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3. Which theory proposes the formation of living beings from non-living things?

- A. Theory of panspermia
- B. Theory of abiogenesis
- C. Theory of biogenesis
- D. Theory of special creation

Answer: B



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4. Who proposed the chemical evolution of life?

- A. AI Oparin - JBS Haldane
- B. Louis Pasteur - AI Oparin
- C. Francesco Redi - JBS Haldane
- D. Spallanzani - Louis Pasteur

Answer: A



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5. Which of the following compounds Miller-Urey used in the experimental synthesis of amino acids?

A. CH_4 , NH_3 , CO_2 and H_2O

B. CH_4NH_3 , H_2 and H_2O

C. CH_4 , CO_2 , H_2 and H_2O

D. CH_2 , N_2 , H_2 and H_2O

Answer: B



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6. Hot ocean water containing concentrated of prebiotic organic compounds was known as

- A. colloid
- B. crystalloid
- C. gelatinous mixture
- D. primordial soup

Answer: D



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7. Which of the following was formed first?

A. Virus

B. Prokaryote

C. Coacervates

D. Eukaryote

Answer: C



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8. Analogous organs have

A. different origin and similar function

B. similar origin and similar function

C. similar origin and different function

D. different origin and different function

Answer: A



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9. Find out the odd one.

A. Aerial-Flying

B. Fossorial-Burrowing

C. Cursorial-Running

D. Arboreal-Swimming

Answer: D



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10. Which one of the following sets of organs constitutes vestigial organs?

- A. Appendix, coccyx and plica semilunaris
- B. Appendix, pectoral girdle and caecum
- C. Large intestine, coccyx and ear muscle
- D. Appendix, coccyx and rectum

Answer: A



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11. What is the correct ascending order?

A. Mesozoic, Cenozoic and Palaeozoic

B. Cenozoic, Mesozoic and Palaeozoic

C. Palaeozoic, Mesozoic and Cenozoic

D. Palaeozoic, Cenozoic and Mesozoic

Answer: C



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12. Who is known as the Father of Modern Palaeontology'?

A. Leonardo da Vinci

B. Karl Ernst von Baer

C. Ernst Haeckel

D. Georges Cuvier

Answer: D



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13. Which of the following is a connecting link between annelids and arthropods?

A. Euglena

B. Peripatus

C. Archeopteryx

D. Echidna

Answer: B



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14. Organic evolution refers to a change in diversity and in populations of organisms.



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15. are hardened pieces of mineral matter deposited in the cavities of moulds.



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16. The earliest form of horse was that was livingg in the plains of North America.



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17. The fossil of discovered from the sedimentary rocks of Bavaria, Germany is the missing link between reptiles and birds.



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18. Digits II and IV persist in modern horse as reduced structures, known as bones.



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19. Modifications of the basic pentadactyl limb plan in vertebrates to meet their needs is known as



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20. The arrangement of different eras, periods and epochs in their ascending order of time constitutes the



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21. Euglena is connecting link between
and



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22. era is known as the era of reptiles.



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23. All the present day life has originated from a single ancestral form, designated as



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24. Sudden reappearance of some ancestral characters in the present organisms is called

as



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25. The droplets formed by the separation of high molecular weight organic compounds in a colloidal solution.



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26. Protenoids, when dissolved in water by boiling and then cooling, organised structures

are formed.



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27. Name the theory, which explains about the origin of amphibians from aquatic fish-like ancestors.



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28. DNA → RNA → Protein concept.



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29. The primitive atmosphere was reducing.



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30. Heterotrophic organisms with aerobic respiration evolved prior to anaerobic organisms.



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31. Serum proteins of closely related animals are similar in their amino acid sequences to a greater extent.



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32. Reptiles flourished in the Palaeozoic era.



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33. Close similarity in the nucleotide sequence between two organisms depicts close relationship between them.



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**Topic 1 Practice Questions Exams Textbook S
Other Imp Question 2 1 2 Marks Questions Exams
Questions**

1. What is fossil ?



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2. What was the contribution of Oparin of Russia and Haldane of England regarding evolution?



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3. What do you mean by chemical evolution?



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4. Palaeontological evidences support the theory of organic evolution. Explain with an example.



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5. How do fossils support organic evolution?



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6. Archaeopteryx is connecting link between



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7. Describe homology in early embryonic development.



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8. Explain the theory of recapitulation.



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9. State and explain Huckel' s rule with an example .



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10. Discuss molecular homology as an evidence of organic evolution.



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1. Different the following (Restrict each answer three to four important sentences):
Homologous organ and Analogous organ



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2. Differentiate between chemical evolution and biological evolution .



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3. Convergent evolution and Divergent evolution



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**Topic 1 Practice Questions Exams Textbook S
Other Imp Question 7 Marks Questions**

1. Give an account of the chemical basis of origin of life.



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2. Discuss the evidences of organic evolution from comparative anatomy and morphology.



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3. Discuss embryological evidences of evolution.



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4. Palaeontological evidences for evolution refer to the



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Topic 1 Topic Test 1

1. Miller-Urey's experiment mixture had the following except

A. methane

B. NO_2

C. hydrogen

D. water vapour

Answer: B



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2. The first cell-like structure initially appeared
in



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3. Atavism is



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4. Closely related species differing in various traits express

A. convergent evolution

B. divergent evolution

C. parallel

D. None of these

Answer: C



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5. Rocks in which fossils are generally found.



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6. Sudden reappearance of some ancestral characters in the present organisms is called as



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7. Each period is divided into

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8. Miller and Urey took H_2 , NH_3 , CH_4 in the ratio

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9. Differentiate between analogous organs and vestigial organs.



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10. How does the study of comparative anatomy of living organism explain the process of evolution?



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Topic 2 Practice Questions Exams Textbook S Other Imp Question 1 Mark Questions Exam S Questions

1. A paper on 'natural selection' and 'origin of species' was presented in the Linnaean Society of London in 1858 by

A. Charles Darwin - Robert Malthus

B. Charles Darwin - Alfred R Wallace

C. Hugo de Vries - Robert Malthus

D. Alfred R Wallace - August Weismann

Answer: B



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2. What is meant by the term Darwin fitness.?

- A. The ability to survive and reproduce
- B. High aggressiveness
- C. Healthy appearance
- D. Physical strength

Answer: A



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3. Which is not a case of chromosomal aberration?

A. Recombination

B. Duplication

C. Inversion

D. Translocation

Answer: A



4. Which type of natural selection removes individuals from both ends of a phenotypic distribution?

- A. Directional
- B. Disruptive
- C. Stabilising
- D. None of these

Answer: C



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5. Which is not a great ape?

A. Gorilla

B. Chimpanzee

C. Orangutan

D. Macaque

Answer: D



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6. What is the correct sequence of human evolution?

A. Homo habilis, H. erectus, H.

neanderthalensis, H. sapiens

B. Homo erectus, H. habilis, H.

neanderthalensis, H. sapiens

C. Homo habilis, H. neanderthalensis, H.

sapiens, H. erectus

D. Homo erectus, H. neanderthalensis, H.
habilis, H. sapiens

Answer: A



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7. $(p + q)^2 = p^2 + 2pq + q^2 = 1$, represents
an equation used in

A. population genetics

B. Mendelian genetica

C. biometrics

D. molecular genetics

Answer: A



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8. Which of the following is the most primitive horse ?

A. Homo habilis

B. Australopithecus

C. Ramapithecus punjabicus

D. Homo neanderthalensis

Answer: C



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9. Jean Baptiste de Lamarck wrote a book, entitled which embodied his theory of inheritance of acquired characters.



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10. Charles Robert Darwin went on a voyage on board the ship



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11. Charles Darwin was inspired by the population theory proposed by



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12. Darwin's contemporary ... was studying population diversity in the erstwhile East Indies.



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13. Mutation theory was proposed by:



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14. August Weismann's theory gave a thunder blow to Lamarckism.



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15. Charles Darwin studied the diversity of a class of birds, commonly known as in the Galapagos archipelago.



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16. The original title of Darwin's book was

..... .



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17. Natural selection in action was demonstrated by Moth.



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18. The effect of is larger in small populations and smaller in large populations.



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19. Genetic recombination occurs in cell division. Name the cell division.



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20. Hugo de vries proposed mutation theory of evolution working on _____.



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21. Breakage, exchange and rejoining of homologous chromosomal segments.



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22. A single nucleotide substitution in the nucleotide sequence of a gene.



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23. The collection of all genes of a population of species.



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24. A sudden change in the genetic make up that ends up in a new expression.



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Topic 2 Practice Questions Exams Textbook S
Other Imp Question 2 1 2 Marks Questions Exam
Questions

1. What is Hardy -Weinberg principle?



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2. What is gene flow?



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3. What is prodigality of reproduction ? Give an example.



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4. Write three criticisms on Darwinism.



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5. Name the main critic of Lamarck. Mention the name of his theory.



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6. What is speciation?



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7. Describe the mechanism of evolution as explained by Hugo de Vries.



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8. What is genetic drift?



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9. Name the theory of evolution that supports industrial melanism in insects.



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10. What is bottleneck effect ?



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11. Write a short note on Cro-Magnon man.



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**Topic 2 Practice Questions Exams Textbook S
Other Imp Question 3 1 2 Marks Questions**

1. Somatic variation and Germinal variation.



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2. Genetic recombination and Mutation.



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3. Differentiate between gene mutation and chromosomal mutation .



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4. Natural selection and Genetic drift.



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Topic 2 Practice Questions Exams Textbook S
Other Imp Question 7 Marks Questions Exams
Questions

1. Which economist influenced Darwin for his theory of Natural Selection?



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2. Discuss theory of natural selection proposed by darwin.



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3. Discuss about the synthetic theory of organic evolution.



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1. According to Charles Darwin, evolution is

- A. a slow and discontinuous process
- B. a sudden but discontinuous process
- C. a slow, gradual and continuous process
- D. a slow, sudden and discontinuous process

Answer: C



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2. Change of lighter coloured variety of peppered moth (*Biston betularia*) to darker variety in the industrial era occurred due to

A. selection of darker variety for survival

B. deletion of gene

C. impact of industrial carbon over melanin formation

D. translocation of gene

Answer: A



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3. In Hardy-Weinberg equation, the percentage of heterozygous individual is

A. p^2

B. $2pq$

C. pq

D. q^2

Answer: B



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4. According to Lamarck, acquired characters are

A. inherited

B. artificial

C. superficial

D. None of these

Answer: A



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5. When gene migration happens multiple times it is called mutation.



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6. Theory of pangenesis was proposed by



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7. Differentiate between

Directional and stabilising natural selection,



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8. Differentiate between

Gene flow and genetic drift.



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9. Discuss about the synthetic theory of organic evolution.



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10. What is Hardy -Weinberg principle?



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Chapter Test

1. Select the incorrect pair

A. Oparin - Probiotic

B. Spallanzani - Approve biogenesis

C. Haldane - Hot dilute soup

D. Fox - Coacervates

Answer: D



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2. Saltation stands for

- A. single step large mutation
- B. single step small mutation
- C. double step small mutation
- D. double step large mutation

Answer: A



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3. Hardy-Weinberg equation is

A. $p^2 + 2pq + q^2 = 1$

B. $2p^2 + pq + 2q^2 = 1$

C. $p^2 + 2pq + 2q^2 = 1$

D. $p^2 + 2pq + q^2 = 2$

Answer: A



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4. In which epoch, only modern humans prevail?

A. Pleistocene

B. Holocene

C. Pliocene

D. Miocene

Answer: B



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5. The process by which different type of finches were evolved in Galapagos Islands is

A. adaptive radiation

B. mutation

C. adaptive convergence

D. atavism

Answer: A



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6. Amphibians were dominant during Jurassic period



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7. Haeckel's biogenetic law is reproductive isolation.



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8. Mutual exchange of a segment of chromosome between two non-homologous chromosomes is



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9. Two populations are said to be isolated if there is no longer any between them.



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10. Nictitating membrane of eye is an example of



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11. In whales, the forelimbs are modified for



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12. Cro-Magnon man was more intelligent than

.....



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13. Write short note on Connecting links



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14. Write short note on Speciation



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15. Write short note on: Genetic drift



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16. Write short note on Australopithecus



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17. Give any three characters that have developed during human evolution.



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18. Give an account of Darwin finches



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19. State basic postulates of Darwin's theory of natural selection and compare it with Lamarck's theory of evolution.



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20. Describe the process of evolution of horse.



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