

BIOLOGY

BOOKS - MBD -HARYANA BOARD

EVOLUTION

Example

1. Explain antibiotic resistance observed in bacteria in light of Darwinian selection theory.



2. Find out from newspapers and popular science articles any new fossil discoveries or controversies about evolution.



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3. Attempt giving a clear definition of the term species.



4. Try to trace the various components of human evolution



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5. Find out through internet and popular science articles whether animals other than man have self-consciousness.



6. List 10 modern-day animals and using the internet resources link it to a corresponding ancient fossil. Name both.



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7. Describe one example of adaptive radiation.



8. What is divergent evolution? Explain taking an example of plants.



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9. Can we call human evolution as an adaptive radiation? Explain.



10. Using various resources such as your school library or the internet and discussions with your teacher, trace the evolutionary stages of any one animal say horse.



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11. Where did life originate on the earth?



12. Give another name for origin of life.



13. The surprise products in the Miller's experiment were



14. Arrange the following substances in a proper sequence with regard to the formation

of chemical constituents at the time of origin of life: Sugar, methane, nucleic acid and amino acid. **Watch Video Solution**



15. What do you mean by chemogeny?



16. Define biogeny



17. What were Eobionts?



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18. Mention the type of nutrition in the cells originated first during the origin of life.



19. Which group of organisms were responsible for appearance of free oxygen in the atmosphere of the primitive earth?



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20. What is meant by the term fossil record?



21. The most direct evidence of organic evolution is :



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22. Name three recent eras of geological time



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23. What is appentency?



24. Consider a thorn in Bougainvillea and a tendril in cucurbita. Are these two organs homologous or analogous? Give reason.



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25. Suppose a child is born with a tail measuring 3 cms. Why is the child not considered more evolved than normal man? Explain.



26. Which epoch is called "age of mammals and angiosperms"?



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27. Evolution is a discontinuous process. Is it correct?



28. Give the three key factors of the modern concept of evolution



29. Which other term can be used for natural selection?



30. The ultimate source of organic variation is



31. What is the cause of struggle for existence?



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32. Name two plants which have been produced by artificial selection.



33. What is proved by the phenomenon of resistence to DDT in mosquitoes?



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34. What is population genetics?



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35. Define gene migration.



36. Genetic drift



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37. Name three types of natural selection.



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38. The foremost advantage of bipedal locomotion is



39. What is the scientific name of Java and Peking man?



40. Write the name given to fossil man of Shivalik hills in India.



41. Attempt giving a clear definition of the term species.



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42. Which amino acids were formed in Miller's experiment in the direction of origin of the life on earth?



43. Give an example of missing link.



44. Name the gases used by Urey and Muller in their experiment.



45. What is a coacervate?



46. Define organic evolution in three words.



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47. Which technique is used to know the age of fossils?



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48. Define organic evolution in three words.



49. Give two example of adaptive radiation.



50. Why are the theories of special creation and spontaneous generation not accepted?



51. State the theory of eternity of life.



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52. Briefly explain theory of biogenesis .



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53. Where did Ife originate ?Explain.



54. Write the composition of primitive earth's atmosphere.



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55. State the role of sun in the origin of life.



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56. List characteristics of coacervates.



57. Differentiate coacervate droplets and proteinoid microsphere.



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58. Briefly describe formation of first living cell.



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59. Write the contribution of Urey and Miller.

60. What was S.W. Fox's contribution to the chemical theory of the origin of life?



61. How were first formed heterotrophs converted into present day autotrophs?



62. Distinguish between cosmic evolution and organic evolution. What is evolutionary biology?



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63. What is convergent evolution?



64. What are homologous organs? Cite one example



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65. Define analogous organs. Give one example



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66. Write signficance of vestigial organs.



67. Define atavism. Give one example of atavism.



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68. What is significance of connecting links?



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69. What are fossils?



70. Are the fossils being formed at present time?



71. Discuss the palae4otological evidences in support of evolution.



72. Birds have evolved from reptiles "Explain.



73. What is the significance of Archaeopteryx in the study of organic evolution ?



74. Discuss geological time scale as evidence of evolution.



75. How has the study of fossils helped in convincing scientists that organisms have come into existence through evolution? How can the age of a fossil be determined?



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76. Name six biogeographical realms



77. Theories of Evolution



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78. Discuss the importance of artificial selection in the derivation of the concept of natural selection.



79. What is the main difference between Darwin's theory of natural selection and De Vreis mutation theory?



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80. What is competition in nature? How does it affect the plant and animal life? Mention some examples.



81. List 3 mechanisms by which variant genotypes can be produced in nature



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82. Why is the frequency of sickle cell anaemia more in the malaria prone areas?



83. How is artificial selection different from natural selection?



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84. Describe three mechanisms by which genetic variability can be produced in nature.



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85. Discuss the role of variation in evolution

86. The homology in haemoglobin of man and gorilla is 99 percent. What explanation would you give for this finding?



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87. Differentiate ape and man.



88. Write explanatory note on the remote ancestors of man.



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89. Chronological sequence of evolution of the geus Homo is



90. Give important characteristics of the skull of Australopithecus.



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91. At what stage of evolutionary history of man tool making started?



92. What role fire played in the early evolutinary history of man?



93. Short note on coacervates?



94. What are vestigial organs? Give examples.



95. Define connecting link(In regard to evolution) and give its one example from vertebrates.



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96. Explain briefly Recapitulation Theory.



97. State and explain Biogenetic law.



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98. Ontogeny repeats phylogeny. Explain.



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99. What is biogeography ?How does the distribution of naimals and plants support evolution?



100. List the main points of Lamarck's theory.



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104. Where did Darwin err in his theory of the "Origin of Species" through natural

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110. Summarize Miller simulation experiment for organic synthesis. Comment on its efficacy



111. Explain modern or chemosynthetic theory of origin of life.



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112. What is variation ? Name the basic processes that cause variation among organisms. Discuss role of migration in evolution



113. What is natural selection in modern terms? Elucidate the three different effects of natural selection on variation.



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114. Write notes on:

Gene flow



115. Write notes on:

Industrial melanism



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116. Write notes on:

Allopatric speciation



117. Write notes on:

Sympatric speciation



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118. Write notes on:

Balancing selection



119. Write notes on:

Hybrid sterility



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120. Write notes on:

Biological species concept



121. Write short notes on:

Gene Migration



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122. Write short notes on:

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136. Can we call human evolution as adaptive radiation? (Say, Yes or No).



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Exercise

1. Fill in the blaks

"Theory of Inheritance of Germplasm" was

propoed by **Watch Video Solution** 2. Fill in the blanks Mutage effects of X-ray were confirmed by **Watch Video Solution** 3. Fill in the blanks and jointly proposed the "Theory of Natural Selection".



4. Fill in the blaks

Origin of short-legged Ancon sheep variety supports the theory.



5. Fill in the blanks

...... causes the recombination of genes.



6. Fill in the blanks
the process which prevents interbreeding
between related groups of living organism is



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7. State true or false:

The membrane bound molecular aggregaes are called coacervates.



The first organisms formed were autotrophs.



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9. State true or false:

the book"Origin of life" was written by Oparin and Haldane.



The primitive atmosphere was reducing.



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11. State true or false:

Tendrill of Passiflora and tendrill of Pisum are analogous organs.



The cranial capacity of Java man was 700 cc.



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13. State true or false:

The cranial capacity of Homo sapiens man is 1700 cc.



14. Coin one word for the following statements:

A group of organisms similar in certain basic characters and interbreeding under natural conditions to produce the fertile individuals.



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15. Coin one word for the following statements:

Origin of new species from pre-existing species.



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16. Coin one word for the following statements:

When two populations of a species become reproductive isolated and become different species due to certain geographical barriers.



17. Coin one word for the following statements:

Sudden, large and inheritable changes in the genetic material.



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Coin one word for the following statements:

Morphological similar but reproductively isolated species.



19. Which cannot be explained by Lamarckism?

A. Elongation of neck of giraffe

B. Loss of tail in human being

C. Weak progeny of a nobel laureate

D. None of these.

Answer:



20. Which of the following provides most evident proof of evolution?

- A. Fossils
- B. Morphology
- C. Embryo
- D. Vestigial organs.

Answer:



21. Which one of the following amino-acids was not found to be synthesized in Miller's experiment

- A. Glycine
- B. Aspartic acid
- C. Glutamic acid
- D. Alanine.

Answer:



22. Species occuring in different geographical area are called as

- A. Sibling
- B. Neopatric
- C. Sympatric
- D. Allopatric.

Answer:



23. Lamarck's theory of evolution is called:
A. Survival of the fittest
B. Special creatio theory
C. Inheritance of acquired characters
D. None of these.
Answer:



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24. Cause of speciation is

- A. Random mating
- B. Hybridization
- C. Isolation
- D. Migration.



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25. Sickle-cell anaemia, the best example of natural selection, is due to gene modification related to amino acid of

- A. Fist b chain
- B. Second b chain
- C. Secon a chain
- D. First a chain.



- 26. Darwin's theory does not include
 - A. Natural selection

- B. Survival of the fittestt
- C. Evolutin through inheritance
- D. Struggle for existence.



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27. A bacterial culture is treated with streptomycin and a cast is made . A few columns are able to survive due to

- A. Selection
- B. Adaptation
- C. Induced mutation
- D. Mimicry.



- 28. Darwin is associated with
 - A. Natural selection

- B. Mutation
- C. Inorganic evolution.
- D. All of the above



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