



BIOLOGY

BOOKS - PREMIERS PUBLISHERS

EVOLUTION

Textbook Questions Answers

1. The first life on earth originated

A. in air

B. on land

C. in water

D. on mountain

Answer: C



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2. Who published the book "Origin of species by Natural Selection" in 1859 ?

A. Charles Darwin

B. Lamarck

C. Weismann

D. Hugo de Vries

Answer: A



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3. Which of the following was the contribution of Hugo de Vries ?

- A. Theory of mutation
- B. Theory of Natural Selection
- C. Theory of inheritance of acquired characters
- D. Germplasm theory

Answer: A



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4. The wings of birds and butterflies is an example of

- A. Adaptive radiation
- B. Convergent evolution
- C. Divergent evolution
- D. Variation

Answer: B



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5. The phenomenon of "Industrial Melanism" demonstrates

- A. Natural Selection
- B. Induced mutation
- C. Reproductive isolation
- D. Geographical isolation

Answer: A



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6. Darwin's finches are an excellent example of

- A. connecting links
- B. seasonal migration
- C. adaptive radiation

D. parasitism

Answer: C



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7. Who proposed the Germplasm theory ?

A. Darwin

B. August Weismann

C. Lamarck Alfred Wallace

D.

Answer: B



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8. The age of fossils can be determined by

- A. electron microscope
- B. weighing the fossils
- C. carbon dating
- D. analysis of bones

Answer: C



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9. Fossils are generally found in

- A. igneous rocks
- B. metamorphic rocks
- C. volcanic rocks
- D. sedimentary rocks

Answer: D



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10. Evolutionary history of an organism is called

- A. ancestry
- B. ontogeny
- C. phylogeny

D. paleontology

Answer: C



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11. The golden age of reptiles was

A. Mesozoic era

B. Cenozoic era

C. Paleozoic era

D. Proterozoic era

Answer: A



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12. Which period was called "Age of fishes" ?

A. Permian

B. Triassic

C. Devonian

D. Ordovician

Answer: C



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13. Modern man belongs to which period ?

A. Quaternary

B. Cretaceous

C. Silurian

D. Cambrian

Answer: A



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14. The Neanderthal man had the brain capacity of

A. 650-800cc

B. 1200cc

C. 900cc

D. 1400cc

Answer: D

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15. List out the major gases seem to be found in the primitive earth.

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16. Explain the three major categories in which fossilization occur ?

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17. Differentiate between divergent evolution and convergent evolution with one example for each.



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18. How does Hardy-Weinberg's expression $(p^2 + 2pq + q^2 = 1)$ explain that genetic equilibrium is maintained in population? List any four factors that can disturb the genetic equilibrium.



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19. Explain how mutations, natural selection and genetic drift affect Hardy Weinberg equilibrium.

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20. How did Darwin explain fitness of organisms ?

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21. Mention the main objections to Darwinism.

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22. Taking the example of Peppered moth, explain the action of natural selection. What do you call the above phenomenon ?

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23. Darwin's finches and Australian marsupials are suitable examples of adaptive radiation- Justify the statement.

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24. Who disproved Lamarck's Theory of acquired characters? How ?



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25. How does Mutation theory of Dev. Vries differ from Lamarck and Darwin's view in the origin of new species.



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26. Explain stabilizing, directional and disruptive selection with examples.



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27. Rearrange the descent in human evolution
Austrolopithecus → Homo erectus → Homo sapiens

→ Ramapithecus → Homo habilis.

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28. Differentiate between the eating habit and brain size of Australopithecus and Ramapithecus.

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29. How does Neanderthal man differ from the modern man in appearance ?

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30. Mention any three similarities found common in Neanderthal man and Homo sapiens.



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31. According to Darwin, the organic evolution is due to

- A. Intraspecific competition
- B. Interspecific competition
- C. Competition within closely related species.
- D. Reduced feeding efficiency in one species due to the presence of interfering species.

Answer: C



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32. A population will not exist in Hardy-Weinberg equilibrium if

- A. Individuals mate selectively
- B. There are no mutations
- C. There is no migration
- D. The population is large

Answer: A::C::D



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Other Important Questions Answers | Choose The Correct Answer 1 Mark

1. Match the following :

- | | |
|---------------------|----------------------|
| (p) Biogenesis | (i) Fossils |
| (q) Big bang theory | (ii) Haldane |
| (r) Paleozoic | (iii) Huge explosion |
| (s) Primordial sea | (iv) Henry Bastian |

A. (p) - (iv), (q) - (iii), (r) - (ii), (s) - (i)

B. (p) - (iv), (q) - (iii), (r) - (i), (s) - (ii)

C. (p) - (ii), (q)- (i), (r) - (iv), (s) - (iii)

D. (p) - (iii), (q) - (iv), (r) - (i) , (s) - (ii)

Answer: B



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2. Match the following :

- | | |
|-----------------|---------------------|
| (p) Precambrian | (i) Angiosperms |
| (q) Paleozoic | (ii) Ferns |
| (r) Mesozoic | (iii) Prokaryotes |
| (s) Cenozoic | (iv) Zosterophyllum |

A. (p) - (iv), (q) - (iii), (r) - (ii), (s) - (i)

B. (p) - (iv), (q) - (iii), (r) - (i), (s) - (ii)

C. (p) - (iii), (q) - (iv), (r) - (i) , (s) - (ii)

D. (p) - (ii), (q)- (i), (r) - (iv), (s) - (iii)

Answer: C



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3. Match the following

- (p) Eocene (i) Placental mammals
(q) Pliocene (ii) Man like Apes
(r) Miocene (iii) Monotreme
(s) Oligocene (iv) Origin of man from man like apes

A. (p) - (iv), (q) - (iii), (r) - (ii), (s) - (i)

B. (p) - (iii), (q) - (iv), (r) - (i) , (s) - (ii)

C. (p) - (ii), (q)- (i), (r) - (iv), (s) - (iii)

D. (p) (iii), (q) - (iv), (r) - (ii), (s) - (i)

Answer: D



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4. Match the following :

(p) Vestigial

(i) Archaeopterys

(q) Connecting link

(ii) Forelimb and hind limb

(r) Homologous structure

(iii) Eyes of octopus and human

(s) Analogous

(iv) Vermiform appendix

A. (p) - (iv), (q) - (i), (r) - (ii), (s) - (iii)

B. (p) - (iv), (q) - (iii), (r) - (ii), (s) - (i)

C. (p) - (iv), (q) - (iii), (r) - (i), (s) - (ii)

D. (p) - (ii), (q) - (i), (r) - (iv), (s) - (iii)

Answer: A



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5. Match the following :

- | | |
|---------------------|------------------------|
| (p) August Weisman | (i) Biogenetic law |
| (q) Von heacckel | (ii) Mice |
| (r) Urey and miller | (iii) Mutation theory |
| (s) Hugo de Vries | (iv) Abiotic synthesis |

A. (p) - (iv), (q) - (iii), (r) - (ii), (s) - (i)

B. (p) - (iv), (q) - (iii), (r) - (i), (s) - (ii)

C. (p) - (ii), (q)- (i), (r) - (iv), (s) - (iii)

D. (p) - (iii), (q) - (iv), (r) - (i) , (s) - (ii)

Answer: C



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6. Neo Darwinism is proposed by :

A. De Vries

B. Weisman

C. James Crick

D. Osborn

Answer: B



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7. Hardy-Weinberg law refers to :

A. Gene frequency in an individual

B. Gene frequency within a population

C. Gene frequency within a population

D. DNA sequence of an organism.

Answer: C



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8. The typical example for adaptive radiation is :

A. Industrial melanism

B. Darwin's finches

C. Albinism

D. Pleiotropism

Answer: B



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9. What is the brain capacity of Homo habilis?

A. 450 - 500 cc

B. 600 - 650 cc

C. 350 - 450 cc

D. 650 - 800 cc

Answer: D



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10. Biogenetic law was first proposed by :

A. Ernst Haeckel

B. Heinrich

C. Wallace

D. Watson

Answer: A



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11. Choose the odd man out:

A. Darwin

B. Lamarck

C. Weisman

D. Watson and Crick

Answer: D



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12. Find out the odd one out:

A. Natural Selection

B. Creation

C. Darwinism

D. Lamarckism

Answer: B



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13. Identify the odd one out :

A. Silurian

B. Ordovician

C. Jurassic

D. Devonian

Answer: C



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14. Indicate the odd one out

A. Paleozoic era

B. Cenozoic era

C. Mesozoic era

D. Golden era

Answer: D



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15. Choose the odd one out :

A. Genetic drift

B. Genome

C. Mutation

D. Gene flow

Answer: B



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16. Assertion : Living organisms originated from non-living substances through a series of chemical and molecular evolution over millions of years, as stated by Thomas Huxley.

Reason : Oparin suggested that the organic compounds could have undergone a series of reactions leading to more complex molecules.

A. Assertion and reason are correct reason is the correct explanation of assertion .

B. Assertion and reason are correct , reason is not the correct explanation of asseriton.

C. Assertion is not correct , reason is correct.

D. Assertion and reason are not correct .

Answer: B



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17. Assertion : Monera are considered as ancestral to bacteria and blue-green algae .

Reason : Monera are the primitive cells contained clumps of nucleoproteins embedded in cell membrane.

A. Assertion and reason are correct reason is the correct explanation of assertion .

B. Assertion and reason are correct , reason is not the correct explanation of asseriton.

C. Assertion is not correct , reason is correct.

D. Assertion and reason are not correct .

Answer: A



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18. Assertion : Fossilization is a process by which plant and animal remains are preserved in sedimentary rocks.

Reason : When marine animals die, their hard parts like bones, shells etc., are covered with sediments and protected from further deterioration for years .

A. Assertion and reason are correct reason is the correct explanation of assertion .

B. Assertion and reason are correct , reason is not the correct explanation of asseriton.

C. Assertion is not correct , reason is correct.

D. Assertion and reason are not correct .

Answer: A



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19. Assertion : The basic plan of basic structure such as forelimbs and hind limbs in vertebrates are homologous .

Reason : For limbs of vertebrates exhibit similarity with each other and is made up of similar bones such as humerus, radius , ulna, carpels metacarpals and phalanges.

A. Assertion and reason are correct reason is the correct explanation of assertion .

B. Assertion and reason are correct , reason is not the correct explanation of assertion.

C. Assertion is not correct , reason is correct.

D. Assertion and reason are not correct .

Answer: A



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20. Assertion : Mutations or discontinuous variations are not transmitted to other generations.

Reason : Because they are somatic variation .

A. Assertion and reason are correct reason is the correct explanation of assertion .

B. Assertion and reason are correct , reason is not the correct explanation of asseriton.

C. Assertion is not correct , reason is correct.

D. Assertion and reason are not correct .

Answer: D



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21. Which of the following statement is correct ?

A. In naturally breeding population, mutations occur once in life

B. In naturally breeding population mutations occur from time to time

C. In naturally breeding population mutations may not occur.

D. None of the above .

Answer: B

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22. Choose the incorrect statement :

A. Darwin failed to explain the mechanism variation.

B. Darwin wrote the book "The origin of species by Natural Selection "

C. He focused on variations that are mostly heritable .

D. He did not distinguish between somatic and germinal variation.

Answer: C

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23. Indicate the correct statement :

- A. Cenozoic is the age of reptiles.
- B. Cenozoic era is subdivided into two periods namely tertiary and quaternary.
- C. Cenozoic era is the age of dinosaurs.
- D. None of the above .

Answer: B



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24. Which of the following statement is correct ?

A. In stabilizing selection, the organisms with both extreme phenotypes are eliminated, while organisms with average phenotypes survive.

B. The organisms with both extreme phenotypes survive, whereas organisms with average phenotype are eliminated .

C. This is a rare form of selection leading to population equilibrium .

D. None of the above .

Answer: A

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25. Choose the incorrect statement :

A. Ramapithecus were derived from ape like Dryopithecus.

B. Asutralopithecus lived in East African grass lands.

C. Homo erectus lived in Gangetic valley.

D. Neanderthal human was found in Germany.

Answer: C

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Other Important Questions Answers | Answer The Following 2 Marks

1. Explain the Theory of Special Creation.

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2. Explain Biogenesis.

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3. Explain the view of oparin-Haldane on the origin of life.



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4. Mention any two eras of earth's history .



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5. Give an example for analogous structures.



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6. Name any two scientists, who proposed Neo-Lamarckism.

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7. Define mutation.

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8. Write notes on artificial selection.

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9. Describe one example of adaptive radiation.



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10. Define microevolution.



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11. What is Sewall Wright effect or Genetic drift ?



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12. State Hardy - Weinberg equilibrium





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13. Name the earliest fossils of pre-historic man.



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14. Explain the characteristics of Homo erectus.



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Other Important Questions Answers lll Answer The Following 3 Marks

1. Explain briefly about Mesozoic era :

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2. Distinguish between Homologous structures and Analogous structures.

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3. State the principles of Lamarck's Theory .

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4. List the three ways of struggle for existence denoted by Darwin.

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5. Enumerate the salient features of mutation theory.

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6. What is gene flow.

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7. Mention any two differences between Homo habilis and Homo erectus

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Other Important Questions Answers Iv Answer The Following 5 Marks

1. Explain the theory of chemical evolution.

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2. Give the diagrammatic representation of Urey-Miller's experiment an origin of life.

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3. What is Biogenetic law? Who proposed it?

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



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