



BIOLOGY

BOOKS - SURA BIOLOGY (TAMIL ENGLISH)

ORIGIN AND EVOLUTION OF LIFE

Text Evaluation Choose The Correct Answer

1. Biogenetic law states that

- A. Onatogeny and phylogeny go together
- B. Ontogeny recapitulates phylogeny
- C. Phylogeny recapitulates ontogeny
- D. There is no relationship between
phylogeny and ontogeny

Answer: A::C



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2. The 'use and disuse theory' was proposed by_____.

A. Charles Darwin

B. Ernst haeckel

C. Jean Baptise Lamarck

D. Grehor Mendel

Answer: A::B::C



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3. Paleontologists deal with

A. Embryological evidences

B. Fossil evidences

C. Vestigial organ evidences

D. All the above

Answer: C::D



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4. The best way of direct dating fossils of recent origin is by.....

A. Radio-carbon method

B. Uranium lead method

C. Potassium -argon method

D. Both (a) and ©

Answer: A::B::C::D



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5. The term Ethnobotany was coined by

...

A. Khorana

B. J.W. Harsbberger

C. Ronald Ross

D. Hugo de Vries

Answer: A::B



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Text Evaluation Fill In The Blanks

1. The characters developed by the animals during their life time, in response to the environmental changes are called



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2. The degenerated and non - functional organs found in an organism are called
..



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3. The forelimbs of bat and human are examples oforgans.



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4. The theory of natural selection for evolution was proposed by_____.



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Text Evaluation State whether True Or False Write The Correct Statement

1. The use and misuse theory of organs' was postulated by Charles Darwin



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2. The homologous organs look similar and perform similar functions but they have different origin and developmental pattern.



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3. Birds have evolved from reptiles.



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Text Evaluation Match The Following

1. 



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Text Evaluation Short Answers Questions

1. The degenerated wing of a Kiwi is an acquired character. Why is it an acquired character?



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2. Why is Archaeopteryx considered to be a connecting link?



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3. Define Ethnobotany and write its importance.



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4. How can you find the age of fossiles ?



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Text Evaluation Long Answer Questions

1. Natural selection is a driving force for evolution-How ?



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2. How do you differentiate homologous organs from analogous organs?



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Text Evaluation Higher Order Thinking Skills Hots

1. Arun was playing in the garden. Suddenly he saw a dragon fly sitting on a plant. He observed the wings of it. He thought it looked similar to a wing of a crow. Is he correct? Give reason for your answer.



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2. Imprints of fossils tell us about evolution-
How ?



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3. Octopus, cockroach and frog all have eyes.

Can we group these animals together to establish a common evolutionary origin. Justify your answer.



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Additional Questions Answer Choose The Correct Answer

1. Biogenetic was speculated by _____.

A. Haldane

B. Pasteur

C. Darwin

D. Lamarck

Answer: C



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2. The idea of Chemical Evolution of life was developed by_____.

A. Haldane and Orparin

B. Pasteur

C. Libby

D. Leonardo da vinci

Answer: A::C::D



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3. _____ is not an example of vestigial organ.

A. Coccyx

B. Appendix

C. Thick hair

D. Nictitating membrane

Answer: A::C



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4. Who is called the Father of Indian Paleontology

A. Pasteur

B. Birbal sahani

C. Harckel

D. Leonardo da vinci

Answer: B



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5. Ancon Sheep is an example of _____

A. Recessive Germinal Mutation

B. Dominant Germinal Mutation

C. Recessive somatic Mutation

D. Dominant Somatic Mutation

Answer: A



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6. The Founder of Modern Paleobotany is

_____.

A. Brongniart

B. Sternberg

C. Haldane

D. Sahani

Answer: B



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7. _____ is the only planet in the Goldilock Zone

A. Jupiter

B. Mars

C. Oparin

D. Haldane

Answer:



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8. Biogenetic law or Recapitulation theory was given by_____.

A. Leonardo da vinci

B. Ernst haeckel

C. Oparin

D. Haldane

Answer: A:C



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9. The big Bang theory explains the _____

A. Origin of Universe

B. Origin of sea

C. Origin of mountain

D. Origin of water

Answer:



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10. Paleobotany is derived from Greek words paleon that means_____>

A. Old

B. New

C. Past

D. Aged

Answer: D



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11. Minerals or sediments which fill the mold during fossilization forms a_____.

A. Rocks

B. sand

C. Soil

D. Minerals

Answer: A



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12. The process of formation of fossil in the rocks is called ____.

- A. Calcification
- B. Crystallization
- C. Pertification

D. Fossilization

Answer: A



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13. Radioactive carbon dating method was discovered by _____.

A. W.F. Libby

B. Niels Bohr

C. Issac Newton

D. William Harvey

Answer: B



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14. Minerals like_____slowly penetrate in and replace the original organic tissue and forms a rock like fossil.

A. Calcium

B. Sodium

C. magnesium

D. silica

Answer: A::C



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15. Most _____ and wood fossils are petrified.

A. Bone

B. Soils

C. Sands

D. Rocks

Answer: B



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16. Charles Darwin was a great_____.

A. Chemist

B. Naturalist

C. Doctor

D. Physicist

Answer: A



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17. The degenerated wings of_____ is an example for organ of disuse.

A. Kiwi

B. Chicken

C. duck

D. dove

Answer:



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Additional Questions Answer Fill In The Blanks

1. In human beings _____ is a vesigial organ.



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2. _____ is a fossil bird.





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3. _____ of Archaeopteryx are like a reptile.



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4. _____ is an example which supports the use disuse theory.



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5. Darwin had published a book titled.....



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6. The germinal variation is also known as _____ variation.



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7. Father of indian Palaeobotany



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8. Original remains of organism can be preserved in _____



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9. Astrobiology is also known as _____



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10. The major concept in astrobiology is the ...

.....



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11. _____ is a raw material for evolution.



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12. The mutation theory was proposed by _____



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13. Ginkgo biloba is called living fossil ?



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14. The organisms, which live in extreme environmental conditions on Earth are called .

.....



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15. Name of the ship in which charles Darwin went on a voyage.



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16. _____explain the Origin of Universe.



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17. _____ variation are sudden changes which occur in an organism due to mutations.



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18. Discontinuous variation forms the basis for mutation theory proposed by_____



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19. _____ arises due to errors occurring in DNA.



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20. In fossils, a replica of a plant or animal may be preserved in _____



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21. The geological time scale is a system of _____



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22. __ and ____ are two events involved in the process of evolution.



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23. _____ leads to variation.



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24. _____ is any preserved part of a plant that has died long back.



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25. Fossils throw light on _____ and evolution of plants.



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26. _____ is a method of fossilization which can preserve hard and soft rock parts.



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27. Minerals or sediments which fill the mold during fossilization forms a_____.



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28. _____ organs look similar and perform similar functions but they have different origin.



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29. Vermiform appendix, nictitating membrane are the _____ organs in man.



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30. _____ law states that, Ontogeny recapitulates phylogeny.



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31. In response to the changing environment ,the organisms develop certain _____.



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32. The reappearance of ancestralk characters in some individuals is called _____.



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33. Presence of tail in human baby is an example for ___



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34. _____ theory was given by Ernst Haeckel.



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35. Biogenetic law is also known as _____ theory.



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36. Palaeonotology deals with the study of fossils.



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37. Who is called as the father of Modern Ecology?



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38. Lamarck's theory of evolution was published in_____.



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39. When an organ is not used for a long time ,it degenerates.



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40. The degenerated wing of Kiwi is an Example for organ of _____



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41. Darwin demonstrated the facts of evolution in his book named_____.



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42. According to Darwinism, the struggle for existence is of _____ types.



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43. The universe originated _____ years ago, according to the big bang.



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44. _____ generation is also called as Abiogenesis.



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45. The _____organs are inherited from a common ancestors.



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46. Biogenesis was speculated by_____.



Watch Video Solution

47. Discontinuous variations from the basis for ____ theory.



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48. Father of indian Palaeobotany



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49. The process of formation of fossil in the rocks is called ____.



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50. Most bones and wood fossils are ____ fossils.



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51. The universe comprised of stars ,clouds of gas dust which form the _____.



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52. The idea of Chemical Evolution of life was developed by_____.



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53. Thiruvakkarai fossil wood park is located in _____ district.



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54. According to Darwin, _____ variation are useful to the organism.



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55. According to Darwin ,_____ variation are harmful or useless to the oraganism.



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56. _____ variations are not heritable.



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57. Continous variations are also called as _____.



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58. Sexual reproduction, which involves meiosis help in recombination of during gametic fusion



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59. Germinal variation are produced in ___ of an organism.



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60. _____ variation are sudden changes which occur in an organism due to mutations.



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61. In our Solar system, 'Earth' is the only planet in the _____ zone.



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62. Archaeopteryx is an early bird like form found in the _____.



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63. The age of the fossils of the thiruvakkarai Fossil wood park is _____.



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64. The age of fossils can be determined by



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65. What is Geologic time scale.



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66. Radioactive carbon dating method was discovered by _____.



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67. Ethnobotany is the study of a region's_____.



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68. The term Ethnobotany was coined by
....



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Additional Questions Answer Match The Following

1. 

A.

A	B	C	D
1	2	3	4

B.

A	B	C	D
2	1	4	3

C.

A	B	C	D
4	2	1	3

D.

A	B	C	D
2	4	3	1

Answer:



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2. 



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3. 



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4. 



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Additional Questions Answer State Whether The Following Statements Are True Or False Correct The False Statements

1. Life originates from pre-existing life according to Oparin.



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2. True or False. If false give the correct statement:

(i) Fishes originated from mud is a concept in

Abiogenesis.

(ii) Homologous organs look similar but are adapted for different functions.



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3. Favourable variations help the animal to become the fittest.



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4. Variations can occur due to mutation.



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5. Ethnobotany data can help in herbal medicine.



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6. Bacteria exist in the Antarctic regions.



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7. Ethnomedicinal data will serve as a useful source of information for the chemists.



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8. Nictitating membrane of man is called as vestigial organ.



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9. Analogous organs look different and perform similar functions but they have different origin.



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10. Abiogenesis theory states that life originates from pre-existing life.



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11. Palaeonotology deals with the study of fossils.



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12. Archaeopteryx is the oldest known Fossil bird .



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13. True or False. If false give the correct statement:

(i) Fishes originated from mud is a concept in Abiogenesis.

(ii) Homologous organs look similar but are adapted for different functions.



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Additional Questions Answer Assertion And Reason

1. Assertion (A): Ginkgo biloba is a living fossil.

Reason (R) Ginkgo biloba has persisted and remain unchanged for the past several million years, while its relatives disappeared.

A. Both Assertion and Reason are true and

Reason is correct explanation of Assertion.

B. Both Assertion and Reason are true but

Reason is not the correct explanation of Assertion.

C. Assertion is true Reason is false.

D. Both Assertion and Reason are false.

Answer:



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2. Assertion (A): The first form of life could have come from pre-existing non-living inorganic molecule.

Reason(R): This the basis of chemical evolution of life.

A. Both Assertion and Reason are true and Reason is correct explanation of Assertion.

B. Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

C. Assertion is true Reason is false.

D. Both Assertion and Reason are false.

Answer:



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3. Assertion (A):When an organism dies ,the hard part of the bodies settle at the bottom of sea floors and are covered by sediments.

Reason (R):A replica of the organism is formed.

A. Both Assertion and Reason are true and

Reason is correct explanation of

Assertion.

B. Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

C. Assertion is true Reason is false.

D. Both Assertion and Reason are false.

Answer:



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Additional Questions Answer Analogy Type Questions Identify The First Words And Their

Relationship And Suggest A Suitable Word For The Fourth Blank

1. Somatic variation:Not heritable :: Germinal variation:_____



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2. Continous variations:Skin colour of an individual :: Discontinuous variation:_____



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3. Intraspecific struggle: Same species::

Interspecific struggle: ____.



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Additional Questions Answer Answer In A Word

1. What is theory of Spontaneous generation or Abiogenesis ?



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2. Units of life from outer space (Cosmic origin)



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3. Human hand and Bat's wings belong to which type of organs.



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4. The reappearance of ancestral characters in some individuals is called ____.



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5. _____ law states that, Ontogeny recapitulates phylogeny.



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6. What is the study of fossils called ?



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7.is the connecting link between reptiles and birds.



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8. Name the book published by Lamarck.



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9. Write an example of an Acquired character.



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10. Name of the ship in which charles Darwin went on a voyage.



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11. Islands visited by Chareles Darwin.



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12. Another name for natural selection.



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13. Location of fossil wood park.



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14. Branch of science dealing with presence of extra terrestrial life in the Universe.



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Additional Questions Answer Give Reasons For The Following Statements

1. When an organ is not used for a long time ,it degenerates.



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2. Vermiform appendix in man is called as vestigial organs.



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Additional Questions Answer Very Short Answers

1. Explain the Theory of Special Creation.



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2. What is theory of Cosmic origin?



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3. Explain Biogenesis.





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4. What is theory of Spontaneous generation or Abiogenesis ?



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5. Write about Atavism.



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6. Give some examples of vestigial organs in man.



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7. State the Biogenetic law.



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8. What is Paleobotany?



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9. What is Astrobiology or Exobiology ? What does it deal ?



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10. What are extremophiles?



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11. What are living fossils ?



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12. Define fossil. Explain importance of fossils as proof of evolution.



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13. What is Geologic time scale.



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14. What do you about birbal sahani?



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Additional Questions Answer Short Answers

1. (a) What is Goldilock zone for life?

(b) Explain chemical evolution of life.



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2. What is the significance of Ethnobotany?



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3. (a) What is Goldilock zone for life?

(b) Explain chemical evolution of life.



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4. What is Astrobiology? Explain the criteria.



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Additional Questions Answer Long Answers

1. Write a note on evidences from Morphology and Anatomy in favour of Evolution.



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2. How are variations classified?



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3. Explain Use and Disuse theory.



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**Additional Questions Answer Higher Order
Thinking Skills Hots**

1. Is hair preserved in fossils?



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2. A very small population of a species faces a greater thread of extinction than a larger population. Provide a suitable genetic explanation.



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3. Our teeth and an Elephant's tusks are homologous organs'.Justify this statement.What do the analogous organs indicate?





Additional Questions Answer Value Based Questions

1. Two kittens (Leo and joe) from the same mother were separated and sent to different habitual conditions. Leo went to a high mountain wild region and joe was domesticated and lived in a city. After a good 5 years, it was found that Leo was aggressive and built strong with hunting skills. Leo looked

tall with strong legs and muscled structure ,whereas joe was a well mannered cat looked puffy with soft legs.

(i)Do you think habitual condition impact animal characters?

(ii)What acquired characters does Leo inherit?



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2. X is the oldest fossil bird .The animal X became extinct a long time ago.But the study of fossils of X tells us that it had features like

birds and some like reptiles.

(i) Identify 'X'?

(ii) Name one features in which 'X' resembled birds.

(iii) Name one features in which 'X' resembled reptiles.



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