



BIOLOGY

BOOKS - OSWAAL BIOLOGY

(KANNADA ENGLISH)

EVOLUTION

**Topic 1 Origin Of Life On Earth And Related
Evidence Very Short Answer Type Questions I**

1. Can we call human evolution as adaptive radiation?



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2. How do we compute the age of a fossil or a rock?



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3. What is an abiogenesis?



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4. Define Analogous organs.



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5. Define homologous organs.



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6. What is paleontology?



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7. Name the two scientists who set up a special experiment to prove Oparin's theory of origin of life?



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8. What provided energy for a biotic synthesis on primitive earth?



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9. Who showed that life comes from pre-existing life!



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10. Which theory is also referred as chemical theory or naturalistic theory?



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11. In which form/forms did Urey-Miller supply energy in their experiment.



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12. Who provided experimental support for Haldane Oparin Hypothesis?



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13. Name any two vertebrates body parts that are homologous to human forelimbs.



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14. Mention the type of evolution that has brought the similarity as seen in potato tuber and sweet potato.



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15. Are the thorns of Bougainvillea and tendrils of cucurbita homologous or analogous? What type of evolution has brought such a similarity in them?



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16. State the significance of biochemical similarities amongst diverse organism in evolution.



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17. Comment on the similarity between the wing of a cockroach and the wing of a bird. What do you infer from the above, with reference to evolution?



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18. Name the scientists who disproved the theory of spontaneous generation of life?



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19. In what form/forms had Urey and Miller supplied energy in their experiment?



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20. Was oxygen present in free state in primitive earth's atmosphere?



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21. Name the possible sources of energy in most accepted theory of origin of life.



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22. What does theory of special creation state?



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23. What was sealed in the spark chamber in famous Miller and Urey simulation

experiment?



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24. What do you mean by Panspermia?



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25. Cite one example of homologous organs in plants.



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26. Which organs of man are homologous to the wings of birds?



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27. Cite two examples of analogous organs and two of atavistic structures.



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28. Name any two vertebrate body parts that are homologous to human forelimbs.



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29. Mention the type of evolution that has brought the similarity as seen in potato tuber and sweet potato.



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30. Why the wings of a butterfly and of a bat are called analogous?



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31. Mention the main postulates of the theory of special creation.



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32. 'Evolution can also occur by anthropogenic action Give example for this.



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Topic 1 Origin Of Life On Earth And Related Evidence Short Answer Type Questions I

1. Darwin's finches represent one of the best examples for adaptive radiation. Comment.



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2. Who wrote "origin of life"? What is the focal point of the bang theory?



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3. What are homologous organ? Mention any two examples.



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4. What are we referring to when we say 'simple organisms' or 'complex organism'?



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5. A chimpanzee holds objects with hand and an elephant with its proboscis (trunk). Are these organs analogous or homologous? Give reason for your answer.



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6. How can you explain the existence of analogous organs?



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7. What are Darwin's finches?



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8. Life originated from the earth's inorganic atmosphere in the past but this no longer

happens today. Give two reasons.



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9. What is convergent evolution? Give an example.



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10. What is adaptive radiation? Give example.



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11. What are analogous organs? Give an example.



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Topic 1 Origin Of Life On Earth And Related Evidence Short Answer Type Questions li

1. Give an example for adaptive radiation.



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2. Define homology. Mention any four evidences in support of evolution.



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3. List the conditions found on the primitive earth



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4. What is adaptive radiation? Describe it by giving example of Darwin finches what are

three conditions for the origin of life ?



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5. Explain convergent and divergent evolution with the help of one example of each.



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6. State the theory of Biogenesis. How does Miller's experiment support this theory?



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7. Classify the following as examples of homology and analogy:

Mouth parts of cockroach and butterfly



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8. Classify the following as examples of homology and analogy:

Hearts of rabbits and human beings



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9. Classify the following as examples of homology and analogy:

Eyes of octopus and mammals



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10. Classify the following as examples of homology and analogy:

Sweet potato and potato



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11. Classify the following as examples of homology and analogy:

Strings of honey bee and scorpion



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12. Classify the following as examples of homology and analogy:

Tendrils of Lathyrus and tendrils of Gloriosa.



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13. Write a short essay on the Oparian theory of origin of life.



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14. Tabulate important differences between the atmosphere of the primitive earth and that of the present-day earth.



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15. Describe the Pasteurs experiment which supported biogenesis.



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16. Give a brief account of origin of earth.



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17. What is the Oparian theory for the origin of life? Who experimentally supported this?



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18. Explain the origin of simple organic compounds on the primitive earth.



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19. Differentiate between homologous and analogous organs by giving plant example.



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Topic 1 Origin Of Life On Earth And Related Evidence Long Answer Type Questions

1. What was the experiment of Stanley Miller (1953) on the origin of life?



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2. Describe the steps by which simple inorganic substances may have undergone chemical evolution to yield complex organic

molecules that could eventually form living matter.



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3. Discuss the anatomical or embryological evidences of biological evolution.



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4. How does palaeontology support evolution?



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5. Birds have evolved from reptiles. How does palaeontology provide evidence in support of this statement?



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6. Explain which of the following are homologous and which are analogous?

Fish scales and bivalve (molluscs) shell



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7. Explain which of the following are homologous and which are analogous?

Trunk of an elephant and hand of a chimpanzee



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8. Explain which of the following are homologous and which are analogous?

Wing of a bat and wing of a bird



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9. Explain which of the following are homologous and which are analogous?

Nails of a human being and claws of a cat



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10. Explain which of the following are homologous and which are analogous?

Ginger and sweet potato.



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Topic 2 Evolutionary Theories Its Mechanism And Evolution Of Man Very Short Answer Type Questions

1. Give an example for adaptive radiation.



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2. Define saltation?



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3. Among the five factors that are known to affect Hardy-Weinberg equilibrium, three factors are gene flow, genetic drift and genetic recombination. What are the other two factors?



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4. By what latin name the first human-like being, the homonid was known?



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5. When we say "survival of the fittest", does it mean that (a) Those which are fit only survive, or (b) Those that survive are called fit. Comment.



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6. Give a 3-word definition of "organic evolution".



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7. Name the naturalist who had also come to similar conclusion around the same time what Darwin worked out?



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8. What causes speciation according to Huger De Vries?



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9. Which is the earliest fossil of prehistoric man?



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10. Name the common ancestor of great apes and man.



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11. In what respect did Darwin agree with Lamarck?



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12. Name the theory of evolution given by Lamarck.



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



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14. In which areas does the dark melanic species of the peppered moth abound?



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15. Which period is called the 'age of reptiles'?



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16. Mention the immediate ancestors of birds and mammals.



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17. Name three recent eras of geological time.



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18. Cite one example of dinosaurs.



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19. In which era the fossils are scanty.



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20. What is the probable period of origin of cyanobacteria?



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21. Mention the key concepts about the mechanism of biological evolution/Speciation according to (i) de Vries and (iii) Darwin.



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22. According to Hardy-Weinberg's principle, the allele frequency of a population remains constant. How do you interpret the change of frequency of alleles in a population?





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23. Pick out the ancestral line of Angiosperms from the list given below- Conifers, seed ferns, cycads, ferns.



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Topic 2 Evolutionary Theories Its Mechanism And Evolution Of Man Short Answer Type Type Questions I

1. What is founder effect?



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2. While creation and presence of variation is directionless, natural selection is directional as it is in the context of adaptation. Comment



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3. Gene flow occurs through generations can occur across language barriers in humans. If we have a technique of measuring specific allele frequencies in different population of the world, can we not predict human migratory patterns in pre-history and history? Do you agree or disagree? Provide explanation to your answer.



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4. Enumerate two most characteristic criteria for designating a Mendelian population.



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5. Migration may enhance or blur the effects of selection. Comment.



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6. Name the law that states that the sum of allelic frequencies in a population remains constant. What are the five factors that influence these values?



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7. Differentiate between Homo habilis and Homo erectus.



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8. Define the terms : a) Gene Flow b) Genetic drift.



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9. Explain the origin of simple organic compounds on the primitive earth.



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10. Explain the following two components of Darwin's theory of natural selection. Variations



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11. Explain the following two components of Darwin's theory of natural selection. Formation of new species.



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12. How does Darwin's theory of natural selection explain the appearance of new forms of life on earth?



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13. Write four important resemblances between apes and humans.



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14. Name the fossil modern man and living modern man. How do they differ in cranial capacity.



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15. Name the main stages in human evolution in order of their appearance.



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16. What advantages man got over other primates by having erect posture and large brain.



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17. Name the curvatures in the human spine.
Give their advantage.



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18. Describe the Lamarck's theory of evolution.



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19. Name various factors which affect Hardy-Weinberg equilibrium.



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**Topic 2 Evolutionary Theories Its Mechanism And
Evolution Of Man Short Answer Type Type
Questions li**

1. List the period, brain capacity and probable food of the Homo erectus stage in the human evolution.



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



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3. Name the following: (a) This man like primate walked in eastern Africa. (b) This primitive lived in east African grassland (c) The primate which lived in east and central Asia between 1,00,000 to 40,000 years back.



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4. State Hardy-Weinberg equilibrium and mention the factors affecting the equilibrium of a population.





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5. Write a short note on Dryopithecus.



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6. Branching descent and natural evolution are the two key concepts of Darwinian Theory of evolution. Explain each concept with the help of a suitable example.



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7. What are main differences between Darwin and de Vries theory of evolution?



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8. How does Darwin's theory of natural selection explain the appearance of new forms of life on earth?



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9. List the main factors on which Lamarck based his theory of biological evolution.



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10. What are the main postulates of Darwin's theory of natural selection?



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11. How do new species arise according to De Vries mutation theory of organic evolution?



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Topic 2 Evolutionary Theories Its Mechanism And Evolution Of Man Long Answer Type Questions

1. what were the views of charles darwin about the evolution of life forms ?



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2. Try to trace the various components of human evolution



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3. List 10 modern -day animals and link it to a corresponding ancient fossil.Name both.



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4. You have studied the story of pepper moths in England. Had the industries been removed, what impact could it have had on the moth population? Discuss.



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Topic 2 Evolutionary Theories Its Mechanism And Evolution Of Man Multiple Choice Questions

1. Which of the following is used as an atmospheric pollution indicator?

A. Lepidoptera

B. Lichens

C. Lycopersicon

D. Lycopodium

Answer: B



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2. The theory of spontaneous generation stated that:

A. Life arose from living forms only.

B. Life can arise from both living and non-living.

C. Life can arise from non-living things only.

D. Life arises spontaneously, neither from living nor from thenon-living.

Answer: B



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3. Animal husbandry and plant breeding programmes are the examples of:

A. Reverse evolution

B. Artificial selection

C. Mutation

D. Natural selection

Answer: D



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4. Palaentological evidences for evolution refer to the :

A. Development of embryo

B. Homologous organs

C. Fossils

D. Analogous organs.

Answer: C



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5. The bones of forelimbs of whale, bat, cheetah and man are similar in structure, because :

- A. One organism has given rise to another
- B. They share a common ancestor
- C. They perform the same function
- D. They have biochemical similarities

Answer: A



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6. Analogous organs arise due to :

A. Divergent evolution

B. Artificial selection

C. Genetic drift

D. Convergent evolution

Answer: D



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7. $(P + Q)^2 = p^2 + 2pq + Q^2 = 1$ represents an equation used in :

- A. Population genetics
- B. Mendelian genetics
- C. Biometrics
- D. Molecular genetics

Answer: C



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8. Appearance of antibiotic-resistant bacteria is an example of:

A. Adaptive radiation

B. Transduction

C. Pre-existing variation in the population

D. Divergent evolution

Answer: A



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9. Evolution of life shows that life forms had a trend of moving from:

- A. Land to water
- B. Dryland to wet land
- C. Fresh water to sea water
- D. Water to land

Answer: C



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10. Viviparity is considered to be more evolved because :

A. The young ones are left on their own

B. The young ones are protected by a thick shell

C. The young ones are protected inside the mother's body and are looked after they are born leading to more chances of survival

D. The embryo takes a long time to develop

Answer: C



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11. Fossils are generally found in :

- A. Sedimentary rocks
- B. Igneous rocks
- C. Metamorphic rocks
- D. Any type of rock

Answer: A



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12. For the MN-blood group system, the frequencies of M and N alleles are 0.7 and 0.3, respectively. The expected frequency of MN-blood group bearing organisms is likely to be :

A. 0.42

B. 0.49

C. 0.09

D. 0.58

Answer: B



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13. Which type of selection is industrial melanism observed in moth, *Bistonbitularia*?

A. Stabilising

B. Directional

C. Disruptive

D. Artificial

Answer: D



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14. The most accepted line of descent in human evolution is :

A. Australopithecus → Ramapithecus

→ Homo sapiens → homo habilis

B. Homo erectus → Homo habilis →

Homo sapiens

C. Ramapithecus → Homo habilis →

Homo erectus → Homo sapiens

D. Australopithecus → Ramapithecus

→ Homo erectus → Homo habilis

→ Homo sapiens.

Answer: B



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15. Which of the following is an example for link species?

A. Lobe fish

B. Dodo bird

C. Sea weed

D. Tyrannosaurus rex

Answer: A



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16. Match the scientists listed under column 'A' with ideas listed column 'B'.

Column 1

- (i) Darwin
- (ii) Oparin
- (iii) Lamarck
- (iv) Wagner

Column 2

- (M) abiogenesis
- (N) use and disuse of organs
- (O) continental drift theory
- (P) evolution by natural selection

A. i-M, ii-P, iii-N, iv-O

B. i-P, ii-M, iii-N, iv-O

C. i-N, ii-P, iii-O, iv-M

D. i-p,ii-O, iii-N, iv-M

Answer: B



17. In 1953 S. L. Miller created primitive earth conditions in the laboratory and gave experimental evidence for origin of first form of life from preexisting non-living organic molecules. The primitive earth conditions created include:

A. Low temperature, volcanic storms,
atmosphere rich in oxygen

B. Low temperature, volcanic storms,
reducing atmosphere

C. High temperature, volcanic storms, non-
reducing atmosphere

D. High temperature, volcanic storms,
reducing atmosphere containing
 CH_4 , NH_3 etc.

Answer: D



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18. Variations during mutations of meiotic recombinations are

- A. Random and directionless
- B. Random and directional
- C. Random and small
- D. Random, small and directional

Answer: B



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