



BIOLOGY

NEET & AIIMS

EVOLUTION

Example

1. Life cannot originate from inorganic materials at present because of
- A. High degree of environmental pollution
 - B. Very high atmospheric temperature
 - C. A very high amount of oxygen in the atmosphere
 - D. Absence of raw materials

Answer:



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2. Which of the following scientists conducted an experiment on 'killed yeast' to disprove the theory of spontaneous generation?

A. Louis pasteur

B. S.L. Miller

C. A.I. Oparin

D. J.B.S. Haldane

Answer:

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3. What were the condition present on the early earth that provided energy for the chemical origin of life?

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4. Who proposed the concept of common ancestor?



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5. On what basis the concept of common ancestor was given?



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6. Fossilization can occur when (1) Animals are buried and preserved by natural processes (2) Animals are destroyed by the scavengers (3) Animals are eaten up by predators (4) Animals are destroyed by environmental conditions.



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7. Why artificial selection can be taken as an evidence of evolution?



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8. What were the key concepts of Lamarckism and Darwinian theory?

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9. Give two examples of adaptive radiation.

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10. Enumerate any three factors affecting Hardy-Weinberg equilibrium.

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11. Can non-heritable variations lead to evolution? Explain in brief.

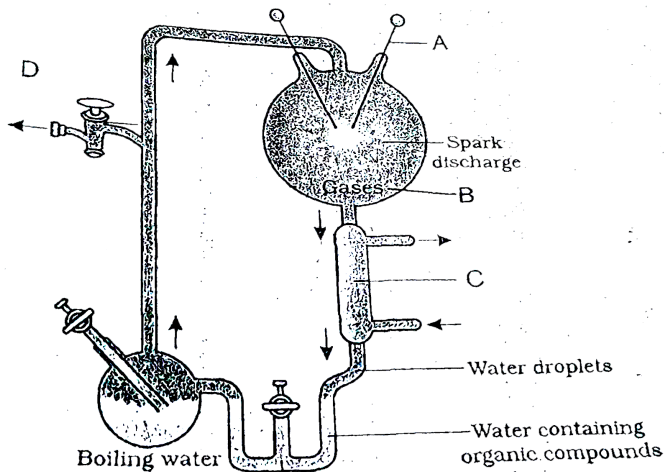
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12. What do you know about the origin of Ichthyosaurs?

Exercise

1. Following is the diagrammatic representation of Miller's experiment.

What is correct labelling? Choose the correct option.



Diagrammatic Representation of Miller's Experiment

A.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
Electrodes	$CH_4 + NH_3 + H_2 + H_2O$	Condenser	Vaccum pump

B.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
Electrodes	$NH_3 + H_2O + CH_4$	Hot water	Trap

- C.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
Electrodes	$NH_3 + CH_4$	Steam	Trap
- D.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
Electrodes	$NH_3 + CO_2 + H_2$	Steam	Trap

Answer: A

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2. Which of the following is not true about coacervates?

- A. They are protein aggregates
- B. They do not have lipid membrane and cannot reproduce
- C. The work on coacervates was done by Oparin
- D. They are protoblasts with polysaccharides, proteins and water.

Answer: A

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3. Extra-terrestrial origin of life was proposed by theory of

- A. Catastrophism
- B. Spontaneous generation
- C. Special creation
- D. Panspermia

Answer: D



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4. Which of the following is incorrect about protobionts in abiogenic origin of life?

- A. They were partially isolated from the surroundings
- B. They could maintain an internal environment
- C. They were able to reproduce

D. They could separate combination of molecules from the surroundings

Answer: C



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5. Miller's experiment provided evidence for the theory of

A. Special creation

B. Abiogenesis

C. Biogenesis

D. Chemical evolution.

Answer: D



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6. Select the wrong pair:

- A. Haldane: Hot dilute soup
- B. Oparin: Coacervate
- C. Fox: Microspheres
- D. Spallanzani: Abiogenesis

Answer: D



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7. The first cellular form of life did not possibly originate till about

- A. 3 billion years ago
- B. 2000 million years ago
- C. 4.5 billion years ago
- D. 50,000 years ago

Answer: B



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8. The theory of special creation has three connotations which of the following is not true?

- A. The diversity was always the same since creation and will be the same in future also
- B. Earth is about 4000 years old
- C. Species are immutable
- D. There has been gradual evolution of life forms

Answer: D



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9. The earliest cells were

A. Chemoautotrophs

B. Chemoheterotrophs

C. Eukaryotes

D. Photoautotrophs

Answer: B



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10. Who said that "Life arises from pre-existing life"?

A. Aristotle

B. Louis Pasteur

C. Oparin

D. Darwin

Answer: B



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11. Which of the following is incorrect sequence?

- A. Palaeozoic-Mesozoic-Coenozoic
- B. Triassic-Jurassic-Cretaceous
- C. Silurian-Devonian-Carboniferous
- D. Devonian-Permian-Carboniferous

Answer: D



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12. The cretaceous period during which the flowering plants appeared, occurred approximately

- A. 220 million years ago
- B. 140 million years ago
- C. 280 million years ago

D. 345 million years ago

Answer: B



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13. The fossil remains of Archaeopteryx is a connecting link between

- A. Fishes and amphibians
- B. Reptiles and birds
- C. Reptiles and mammals
- D. Amphibians and reptiles

Answer: B



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14. Mass extinction at the end of Mesozoic era was probably caused by

- A. Continental drift
- B. Massive glaciation
- C. Collision of earth with large meteorite
- D. Both 1 and 3

Answer: D

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15. Charles Robert Darwin published his work on the evolution in his book

- A. Origin of life
- B. On the origin of species
- C. Genetics and origin of species
- D. Natural selection.

Answer: B

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16. Which of the following is a missing link?

- A. Balanoglossus
- B. Omithorhyncus
- C. Archaeoptaryx.
- D. More than one option is correct.

Answer: C



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17. Age of invertebrates was

- A. Cambrian period
- B. Ordovician period
- C. Silurian period

D. Carboniferous period

Answer: B



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18. Which of the following character of Archaeopteryx is similar to reptiles?

- A. Presence of feathers on body
- B. Presence of long tail
- C. Intimate fusion of skull bones
- D. Jaws are modified into beaks

Answer: B



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19. Which of the following is referred to be the first one toed horse?

- A. Eqqus
- B. Eohippus
- C. Merychippus
- D. Pliohippus

Answer: B



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20. The dinosaurs which had three horns on head and collared neck

- A. Tyrannosaurus
- B. Triceratops
- C. Stegosaurus
- D. Brachiosaurus

Answer: B



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21. Which of the following animals show adaptive radiation based on locomotion?

- A. Scorpion, elephant, human
- B. Cheetah, kangaroo, mole
- C. Praying mantis, seal, python
- D. Cockroach, squirrel, toad

Answer: D



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22. Which of the following is not an example of homologous organ?

- A. Vertebrate hearts or brains
- B. Thorns of Bougainvillea and tendrils of Cucurbita
- C. Leg of Cheetah, and flipper of whale
- D. Eye of octopus and of mammals

Answer: A

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23. Darwin's finches are example of

- A. Biogeographical evidence
- B. Paleontological evidence
- C. Embryological evidence
- D. Analogous organs

Answer: B

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24. What are the anatomical structures called that share a common ancestry?

- A. Analogous structures
- B. Homologous structures
- C. Evolutionary structure
- D. Vestigial structures.

Answer: A



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25. Tendrils in different plants are example of

- A. Analogous organs
- B. Divergent evolution
- C. Homologous organs

D. both 1 and 2

Answer: C



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26. Which of the following structures are vestigial in python but not in human?

A. Nictitating membrane

B. Ear pinna

C. Hind limbs

D. All of these

Answer: D



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27. Which of the following is not a connecting link?

A. Neopilina

B. Peripatus

C. Latimeria

D. Limulus

Answer: C



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28. Which of the following realms are separated by Himalayan mountains?

A. Oriental and Australian realm

B. Oriental and Ethiopian realm

C. Oriental and Palearctic realm

D. Oriental and Nearctic realm

Answer: C



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29. Choose the example of discontinuous distribution

- A. Lung fishes
- B. Egg laying mammals
- C. Pouched mammals
- D. All of these

Answer: A



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30. Biogenetic law was proposed by

- A. Mayer

B. Ernst Haeckel

C. Darwin

D. Alfred Wallace

Answer: B



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31. Placental wolf and Tasmanian wolf marsupial exhibit

A. Adaptive radiation

B. Divergent evolution

C. Convergent evolution

D. Homology

Answer: C



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32. Variety of beaks of finches that Darwin found in Galapagos islands, is an example of

- A. Adaptive radiation
- B. Convergent evolution
- C. Adaptive convergence
- D. Analogous organs.

Answer: A



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33. Fitness, according to Darwin refers ultimately and only to

- A. Dominance over others
- B. Ability to defend
- C. Strategy for obtaining food
- D. Number of offsprings

Answer: D



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34. Which one is correctly matched?

- A. Hugo de vreis: Natural selection
- B. Darwin: Theory of Pangenesis
- C. Pasteur: Theory of continuity of germplasm
- D. Mendel: Inheritance of acquired characters

Answer: B



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35. Select the correct statement:

- A. Darwinian variations are small and directionless

B. Mutations are random and directional

C. Fitness is the end result of the ability to adapt and get selected by nature

D. All mammals except whales and camels have seven cervical vertebrae

Answer: C



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36. The two key concepts of Darwinian theory of evolution are

A. Fitness

B. Branching descent

C. Natural selection

D. Both 2 and 3

Answer: D



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37. In modern synthetic theory, the unit of evolution is

- A. Genus
- B. Species
- C. Population
- D. Individual

Answer: C



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38. Neo-Darwinism believes that new species develop through

- A. Mutations with natural selection
- B. Continuous variations with natural selection.
- C. Hybridisation

D. Mutations

Answer: A



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39. Which is not a concept of Lamarckism?

- A. Rate and survival of organisms are different due to variations
- B. Environmental pressure produces variations
- C. An organ in constant use will grow in size
- D. Inheritance of acquired characters

Answer: A



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40. Give Weismann's theory of germplasm. What light does it throw on Lamarckism ?

- A. Mutation theory
- B. Darwin's theory of natural selection
- C. Darwin's theory of Pangenesis
- D. Neo-Darwinism

Answer: C



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41. Genetic drift

- A. Is random change in gene frequency
- B. Has nothing in common with inbreeding
- C. Is appearance of recessive genes
- D. Produces greatest fluctuation in large populations

Answer: A



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42. Gene pool of a population tends to remain stable if the population is large, without large scale mutations, without migration and with

- A. Random mating
- B. Moderate environmental changes
- C. Natural selection
- D. No predator control

Answer: A



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43. Industrial melanism as found in peppered moth proves that

- A. Melanic form has no selective advantage in industrial area
- B. Lighter form has no selective advantage in polluted industrial area and non-polluted area
- C. Melanism is pollution generated features
- D. True black melanic form develops by recurring random mutation

Answer: D



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44. Which of the following is Sewall Wright effect?

- A. Gene pool
- B. Genetic drift
- C. Gene migration
- D. Natural selection.

Answer: B



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45. Lederberg replica plating experiment explains that mutations are

- A. Fast
- B. Useful
- C. Gradual change
- D. Preadaptive change

Answer: D



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46. If the mean and the median pertaining to a certain character of a population are of the same value, the following is most likely to occur:-

- A. Stabilising selection
- B. Disruptive selective

C. Directional selection

D. Progressive selection

Answer: A



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47. According to Hardy-Weinberg principle, sum total of all the allelic frequencies is

A. Zero

B. One

C. Infinite

D. Remain changeable

Answer: B



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48. Hardy-Weinberg principle is applicable to

- A. Small population
- B. Isolated population
- C. Large population
- D. All of these

Answer: C



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49. Which of the following is considered as pollution indicator?

- A. Frequency of metanic moth
- B. Lichen
- C. Predator birds
- D. Frequency of light coloured moth.

Answer: B



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50. Choose the incorrect statement

- A. Before emergence of industrialisation in England, white winged moths were more in number
- B. Sickle cell anaemia in malaria endemic area is an example of directional selection
- C. Long neck of Giraff is an example of progressive selection
- D. Plant tolerant to selenium is Astragalus

Answer: B



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51. Sexually interbreeding or potentially interbreeding group of individuals which is reproductively isolated from other species is

- A. Biological species
- B. Morphospecies
- C. Evolutionary species
- D. Sibling species

Answer: A



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52. Mule is a product of

- A. Mutation
- B. Inbreeding
- C. Cross-breeding
- D. Interspecific hybridisation

Answer: D



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53. Speciation in geographically separated region forms

- A. Sibling species
- B. Allopatric species
- C. Sympatric species
- D. Paraspecies

Answer: B



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54. Reproductive isolation is

- A. Inability to interbreed in natural populations

B. Ability to interbreed in natural populations

C. Breeding in isolation

D. Intraspecific breeding

Answer: A



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55. Sympatric speciation is caused by

A. Genetic isolation

B. Interbreeding

C. Geographical isolation

D. Reproductive isolation.

Answer: D



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56. Which of the following reproductive barriers actually prevents individual of different species from mating with each other ?

- A. Ecological isolation
- B. Temporal isolation
- C. Behavioral isolation
- D. Gametic isolation

Answer: B



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57. In plants, embryos arising from interspecific crosses abort, due to

- A. Hybrid inviability
- B. Hybrid sterility
- C. Hybrid breakdown
- D. Gametic isolation.

Answer: A



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58. The offsprings of hybrids are inviable or infertile in

- A. Hybrid inviability
- B. Hybrid breakdown
- C. Hybrid sterility
- D. Post zygotic barrier.

Answer: B



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59. Closely related, morphologically similar reproductively isolated, sympatric populations are called as

- A. Clones
- B. Demes
- C. Sibling species
- D. Biological species

Answer: C

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60. Which is most important for speciation?

- A. Ecological isolation
- B. Reproductive isolation
- C. Temporal isolation
- D. Behavioural isolation.

Answer: B

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61. Which of the following is not true?

- A. About 15 mya primates called Dryopithecus and Ramapithecus were existing
- B. Ramapithecus was more ape like
- C. Homo erectus had a large brain around 900 cm^2
- D. The brain capacities were between 650 to 800 cm^3 Homo habits.

Answer: B



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62. Who were the first to use hides to protect their body and buried their dead?

- A. Neanderthal man
- B. Homo erectus

C. Cromagnon man

D. Homo habilis

Answer: A



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63. Modern Homo sapiens arose

A. Near east and central Asia between 1,00,000 to 40,000 years back

B. During ice age between 75,000 to 10,000 years ago

C. About 10,000 years back

D. About 18,000 years ago

Answer: B



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64. The most apparent change during the evolutionary history of *Homo sapiens* is traced in

- A. Loss of body hair
- B. Walking upright
- C. Shortening of the jaws
- D. Remarkable increase in the brain size

Answer: D



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65. The first human-like hominid was called:

- A. *Australopithecus*
- B. *Homo erectus*
- C. *Homo habilis*
- D. *Homo sapiens*

Answer: C



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66. What evidence suggests that chimpanzee is more closely related to humans than other hominoid apes?

- A. DNA from sex chromosomes only
- B. Chromosome morphology only
- C. Fossil remains
- D. Banding pattern of autosomes

Answer: D



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67. Centre of human avolution was

A. Ethiopian realm

B. Oriental realm

C. Palaearctic realm

D. Neotropical realm

Answer: A



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68. A well preserved and most complete homonid fossil named Lucy belongs to the genus

A. Dryopithecus

B. Australoithecus

C. Homo

D. Pithecanthropus

Answer: B

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69. Which is direct ancestor of Homo sapiens ?

- A. Homo erectus
- B. Homo sapiens neanderthalensis
- C. Ramapithecus
- D. Australopithecus

Answer: A

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70. The modern man differs from the apes in:

- A. Protruding eyes
- B. Sparse body hair
- C. Arms shorter than legs

D. Wearing of clothes

Answer: C



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Assignment Section A Objective Type Questions

1. Origin of earth dates back to

- A. 10,000-15,000 million years ago
- B. 4000-4600 million years ago
- C. 500-1000 million years ago
- D. 2000-3000 million years ago

Answer: B



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2. Who finally refuted the theory of spontaneous generation and experimentally disproved it?

A. Thomas Maithus

B. Alfred Wallace

C. Louis Pasteur

D. Charles Darwin

Answer: C



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3. An experiment to prove that organic compounds were the basis of life, was performed by

A. Von Helmont

B. Oparin: Coacervate

C. S. Miller

D. Fox

Answer: C



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4. Which of the following theory is related to transfer of life from one planet to another?

- A. Theory of special creation
- B. Theory of biogenesis
- C. Theory of spontaneous generation
- D. Cosmozoic theory

Answer: D



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5. Stanley Miler had put the Oparin-Haldane theory to test in 1953 by creating in the laboratory, the probable conditions on the primitive earth. In the experiment simple aminoacids were synthesized from which of the following modures, as observed after eighteen days?

- A. H_2 , O_2 , N_2 and H_2O
- B. CH_4 , CN , H_3 and O_2
- C. H_2 , NH_3 , CH_4 and water vapour
- D. NH_3 , CH_4 and O_2

Answer: C



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6. The proponent of the theory of spontaneous generation was

- A. Louis Pasteur
- B. Von Helmont

C. Spailanzani

D. Franclsco Redi

Answer: B



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7. The English scientist who worked on the origin of life and settled in India?

A. A.I. Oparin

B. J.B.S. Haldane

C. Louis Pasteur

D. Van Helmont

Answer: B



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8. According to cosmozoic theory, life coines on earth from other planets in space in the form of

- A. Spores
- B. Seeds
- C. Gametes
- D. All of these

Answer: D



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9. The theory that living organisms on the earth came from outer space is based on the study of

- A. Igneous rocks
- B. Sedimentary rocks
- C. Meteorites

D. Moon soil

Answer: C



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10. Russian scientist who proposed the theory of origin of life was

A. Oparin

B. Haldane

C. Miler

D. None of these

Answer: A



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11. A.I. Oparin wrote

- A. Origin of species
- B. Origin of life
- C. Philosophie zoologique
- D. The planet

Answer: B

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12. H.C. Urey wrote the following book

- A. The Planets
- B. Origin of Life
- C. The origin of species
- D. None of these

Answer: A

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13. What did S.L. Miller observe in his experimental set-up?

- A. Formation of sugars and nitrogenous bases
- B. Formation of amino acids
- C. Formation of pigments
- D. Formation of fats.

Answer: B



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14. S.L. Miller conducted an experiment in 1953 to support the

- A. Theory of spontaneous generation.
- B. Biogenesis
- C. Chemical evolution of life

D. Natural selection.

Answer: C



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15. The scientist related with the theory of biogenesis and experiments with swan-necked flasks is

A. Von-Helmont

B. Louis Pasteur

C. Miller

D. Haeckel

Answer: B



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16. All of the following conditions were present on early earth, except

- A. High temperature
- B. Volcanic storms
- C. Oxidising atmosphere
- D. Reducing atmosphere.

Answer: C



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17. Which of the following brokeup water into hydrogen and oxygen on early earth?

- A. Visible light
- B. Infrared radiations
- C. Sunlight
- D. UV radiations

Answer: D



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18. One of the following appeared on the earth with the coming of the plants and was absent in the past

A. Carbon oxide

B. Methane

C. Ammonia

D. Oxygen

Answer: D



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19. Theory of ablogensis or spontaneous generation was finally disapproved by

A. Louis Pasteur

B. A.I. Oparin

C. A.R. Wallace

D. Sydney Fox

Answer: A

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20. Simple one-celled cyanobacteria like organisms appeared on earth

A. 5600 million years ago

B. 5000 million years ago

C. 4600 million years ago

D. 3.3 to 3.5 billion years ago

Answer: D

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21. Eukaryotes developed around

- A. 1,600 million years ago
- B. 459 million years ago
- C. 3,800 million years ago
- D. 4,200 million years ago

Answer: A



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22. The atmosphere became oxidising with the appearance of

- A. Autotrophic bacteria
- B. Autotrophic cyanobacteria
- C. Land plants

D. Algae

Answer: B



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23. Which one of the following gas was not present in free form at the time life originated on earth?

A. Ammonia

B. Oxygen

C. Hydrogen

D. Methane

Answer: B



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24. The theory of spontaneous generation says that

- A. Life originated from the decaying and rotting matter like straw, mud etc.
- B. Life came on the earth from outerspace
- C. Life comes from pre-existing life only
- D. Life started with the replication of self replicating metabolic capsules.

Answer: A



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25. Louis Pasteur by careful experimentation demonstrated that/the

- A. Phenomenon of chemical evolution
- B. There is pontaneous generation of life

C. Life comes from pre-existing life only

D. Abiogenic origin of life

Answer: C



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26. The first non-cellular form of life could have originated about _____ years ago.

A. 3 million

B. 2 million

C. 3 billion

D. 2 billion.

Answer: C



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27. Evolution is defined as

- A. History of race
- B. Development of race
- C. History and development of race with modification
- D. Progressive history of race

Answer: C



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28. Basic unit of evolution is

- A. Species
- B. Population
- C. Individual
- D. Mutation

Answer: B



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29. Which ones are the most essential for origin of life?

A. Enzymes

B. Proteins

C. Carbohydrates

D. Nucleic acid

Answer: D



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30. The presence of salts (NaCl and others) in animal body fluid gives an inference that life originated in the

- A. Primitive ocean
- B. Rain water lakes
- C. Salt solution
- D. All of these

Answer: A

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31. Origin of life from nonliving matter is known as

- A. Coacervates
- B. Abiogenesis
- C. Biogenesis
- D. None of these

Answer: B

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32. During the origin and evolution of life, key biological compounds were progressively synthesised in ocean with the help of energy obtainable from

- A. Lightning
- B. Ultraviolet light
- C. Lightning as well as ultra-violet light
- D. Combustion of certain compounds.

Answer: C



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33. Which of the type of respiration probably arose first?

- A. Aerobic as it releases more energy
- B. Anaerobic as it releases more energy
- C. Aerobic as it is more complex

D. Anaerobic as early atmosphere contained no free oxygen

Answer: D



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34. Which of the following is not the result of convergent evolution?

- A. Forelimbs of whales and bats
- B. Flippers of penguins and dolphins
- C. Potato and sweet potato
- D. Eye of the Octopus and mammals

Answer: A



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35. Evolutionary biology is the study of

- A. Civilisations
- B. History of life forms on earth
- C. Hardy-Weinberg equilibrium
- D. Reproductive success

Answer: B

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36. The palaeontological evidences are obtained from

- A. Homologous structure
- B. Analogous structures
- C. Fossils
- D. Lichens

Answer: C

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37. Archaeopteryx is a connecting link between

- A. Birds and reptiles
- B. Reptiles and mammals
- C. Annelids and arthropods
- D. Amphibians and fishes

Answer: A



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38. Which of the following is incorrect match?

- A. Devonian period - Age of fishes
- B. Carboniferous period - Age of amphibians
- C. Ordovician period - Age of invertebrates

D. Cretaceous period-Age of reptiles

Answer: D



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39. Mesozoic era is called the

A. Age of Fishes

B. Age of Reptiles

C. Age of Mammals

D. Age of Birds

Answer: B



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40. Which of the following is known as age of mammals?

A. Mesozoic

B. Palaeozoic

C. Coenozoic

D. Archaeozoic

Answer: C



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41. First mammals appeared around

A. 459 million years back

B. 220 million years back

C. 1600 million years back

D. 3800 million years back

Answer: B



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42. Which of the following arrangement of periods of the mesozoic era gives a correct sequence from the earliest to the latest?

- A. Jurassic,triassic,cretaceous
- B. Triassic,jurassic,cretaceous
- C. Permian,jurassic,triassic
- D. Devonian,permian,jurassic

Answer: B



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43. Cretaceous period of the Mesozoic era is characterised by which of the following

- A. Gymnosperms are dominant plants and first birds appear
- B. Dinosaurs become extinct and gymnosperms appear

C. Flowering plants disappear

D. Radiation of reptiles and origin of mammal-like reptiles

Answer: B



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44. Which one of the following periods is largely associated with extinction of dinosaurs and the increase in flowering plants and reptiles

A. Cretaceous

B. Tertiary period

C. Triassic

D. Carboniferous

Answer: A



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45. Amphibia first appeared in which of the following period?

- A. Pernian
- B. Carboniferous period-Age of amphibians
- C. Devonian
- D. Silurian

Answer: C



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46. The Pernian period, during which the first most modern orders of insects appeared, occurred approximately

- A. 80 million years ago
- B. 150 million years ago
- C. 280 million years ago
- D. 550 million years ago

Answer: C



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47. Dinosaurs were present during the

- A. Jurassic period
- B. Devonian period
- C. Pernian period
- D. Pleistocene period

Answer: A



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48. Fossils of Archaeopteryx were found from

- A. Jurassic rocks

B. Triassic rocks

C. Cretaceous rocks

D. Cenozoic rocks

Answer: C



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49. The epoch of human civilization is

A. Pliocene

B. Holocene

C. Pleistocene

D. Palaeocene

Answer: C



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50. The last major evolutionary advancement among the vascular plants was the emergence of flowering plants (Angiosperms) about

- A. 350 million years ago
- B. 140 million years ago
- C. 16,00 million years ago
- D. 220 million years ago

Answer: B



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51. Replacement of original hard parts of even the soft tissues of the organisms by minerals is known as

- A. Compression
- B. Petrification
- C. Moulds

D. Amber

Answer: B



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52. The study of the fossil plants is known as

A. Palaeontology

B. Palaeobotany

C. Palynology

D. Palaeoanatomy

Answer: B



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53. Which of the following is richest in fossil?

A. Basalt

B. Granite

C. Lava

D. Sedimentary rock

Answer: D



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54. Excreta preserved as a fossil is called as

A. Stromatolite

B. Compression fossil

C. Intact fossil

D. Coprolite

Answer: D



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55. Ape like ancestors of human appear in epoch

A. Pleistocene

B. Pliocene

C. Miocene

D. Oligocene

Answer: B



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56. Which of the following can be used as an industrial pollution indicator?

A. Lichens

B. White-winged moths

C. Dark-winged moths

D. Fossils

Answer: A



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57. Which of the following does not illustrate the phenomenon of natural selection?

- A. Industrial melanism
- B. Herbicide resistant weeds
- C. Artificial breeding
- D. Antibiotic resistant microbes

Answer: C



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58. The original birds were _____ from which the various Darwin's finches arose.

- A. Insectivorous
- B. Cactus eating
- C. Carnivores
- D. Seed eating.

Answer: D



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59. Convergent evolution is illustrated by

- A. Rat and Dog
- B. Bacterium and protozoan
- C. Star fish and Cuttle fish
- D. Dog fish and Whale

Answer: D



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60. All the following are examples of homologous organs, except

- A. Arm of man and flipper of whale
- B. Thorn of Bougainvillea and tendril of Cucurbita
- C. Eye of an octopus and eye of a mammal
- D. Brain of frog and man

Answer: C



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61. The homologous organs are

- A. Wings of pigeon and housefly

B. Wings of housefly and bat

C. Wings of pigeon and forelimbs of man

D. Wings of butterfly, bat and housefly

Answer: C



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62. Anatomically and structurally different, but function similar structures are called

A. Analogous

B. Divergent

C. Homologous

D. Convergent

Answer: A



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63. Organs which have similar origin and developmental plan, but different functions are called

- A. Vestigial organs
- B. Analogous organs
- C. Homologous organs
- D. Physiological organs

Answer: C



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64. Find the odd one out

- A. Trunk of an elephant and hand of a chimpanzee
- B. Ginger and sweet potato
- C. Wings of bat and insect

D. Nails of human belings and claws of a cat

Answer: D



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65. The convergent evolution of two species is usually associated with

A. A recent common ancestor

B. Analogous organ

C. Homologous organ

D. Different habitat

Answer: B



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66. Find the odd one out w.r.t. evolution

- A. Seal's flipper
- B. Bat's wing
- C. Horse's foot
- D. Butterfly's wings

Answer: D

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67. Which of the following is not vestigial organ in human beings?

- A. Rudimentary ear muscles and third molars (wisdom teeth), body hair
- B. Coccygeal tail vertebrae and scalp muscles
- C. Vermiform appendix and nictitating membrane of the eye
- D. Ear pinna, patella, olecranon process

Answer: D



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68. Which of the following is a vestigial organ?

- A. Vermiform appendix
- B. Atlas
- C. Premolars
- D. Incisors

Answer: A



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69. Which of the following is not a vestigial organ?

- A. Scalp hair
- B. Epiglottis
- C. Vermiform appendix and nictitating membrane of the eye

D. Wisdom tooth

Answer: B



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70. The 'Recapitulation Theory' was put forth by

A. Haeckel

B. Cuvier

C. Wallace

D. Lamarck

Answer: A



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71. Gill clefts and notochord appear in the embryonic development of all vertebrates from fishes to mammals. This supports the theory of

- A. Recapitulation
- B. Metamorphosis
- C. Biogenesis
- D. Abiogenesis

Answer: A



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72. Cycas and Ginkgo are connecting links between

- A. Bryophytes and pteridophytes
- B. Pteridophytes and gymnosperms
- C. Gymnosperms and angiosperms
- D. Thallophyta and bryophyta

Answer: B



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73. Which one of the following is not a living fossil?

- A. Peripatus
- B. King crab
- C. Arcaheopteryx
- D. Sphenodon

Answer: C



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74. Presence of tail and coarse hair in human baby is

- A. Radiation

B. Atavism

C. Mutation

D. Crossing over

Answer: B



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75. Who was the proponent of the theory of inheritance of acquired characters?

A. A.I. Oparin

B. Hugo de Vries

C. Lamarck

D. Weinberg

Answer: C



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76. Hugo de Vries studied mutations in

- A. Eucalyptus
- B. Evening primrose
- C. Hibiscus
- D. Vallisneria

Answer: B



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77. If gene migration happens multiple times. It would lead to

- A. Mutation theory
- B. Gene flow
- C. Chemical evolution
- D. Genetic drift

Answer: B



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78. Natural selection in which more individuals acquire peripheral character value at both the ends of the distribution curve is

- A. Stabilising natural selection
- B. Disruptive natural selection
- C. Directional natural selection
- D. The curve never shows the formation of two peaks

Answer: B



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79. The rate of appearance of new life forms is linked to their

- A. Acquired traits
- B. Nonheritable characters
- C. Life span
- D. Cranial capacities

Answer: C

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80. Which of the following is a placental mammal not marsupial?

- A. Wombat
- B. Bobcat
- C. Bandicoot
- D. Tasmanian tiger cat

Answer: B

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81. Hardy-Weinberg equilibrium is not affected by which of the following factors?

- A. Random mating
- B. Genetic recombination during gametogenesis
- C. Natural selection
- D. Variations due to mutation

Answer: A



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82. Lemur and Spotted cuscus exhibit

- A. Convergent evolution
- B. Homology
- C. Analogy

D. Hybridisation.

Answer: A



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83. Which of the following evolved into the first amphibians?

A. Lobefins

B. Shrews

C. Salamanders

D. Turtles

Answer: A



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84. Pelycosaurs and Therapsids were

A. Sauropsids

B. Synapsids

C. Sphenopsids

D. Dinosaurs

Answer: B



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85. Which of the following is correctly matched w.r.t. era and its period?

A. Paleozoic-Cretaceous

B. Mesozoic-Devonian

C. Cenozoic-Permian

D. Paleozoic-Carboniferous

Answer: D



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86. In 1938 a coelacanth was found in

- A. South America
- B. South Africa
- C. Australia
- D. England

Answer: B



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87. The first organisms that invaded land were

- A. Plants
- B. Fishes
- C. Insects

D. Bacteria

Answer: A



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88. Branching descent is one of the key concepts of

A. Lamarckian theory

B. Miller's theory

C. The Big Bang theory

D. Darwinian theory

Answer: D



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89. All of the following are the mammals wholly living in water except

A. Penguins

B. Dolphins

C. Seals

D. Sea cows

Answer: A



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90. Australopithecines probably lived in the

A. East African grasslands

B. West African grasslands

C. North American grasslands

D. South American grasslands

Answer: A



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91. Fossils discovered in Java in 1891 belonged to

- A. Homo habilis
- B. Neanderthal man
- C. Homo erectus had a large brain around 900 cm^2
- D. Ramapithecus

Answer: C



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92. Among following, the most recent is

- A. Homo sapiens
- B. Australopithecines
- C. Homo habilis

D. Dryopithecus

Answer: A



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93. The Neanderthal man had a cranial capacity of around

A. 1600cc

B. 650-800cc

C. 900cc

D. 1400cc

Answer: D



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1. Theory of panspermia was proposed to explain the

- A. Origin of universe
- B. Origin of Life
- C. Origin of earth
- D. Evolution of life

Answer: B



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2. The first organisms appeared on earth were

- A. Chemoheterotrophs
- B. Chemoautotrophs
- C. Photoautotrophs
- D. Decomposers

Answer: A



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3. Most important condition for origin of life is the presence is

- A. Water
- B. Oxygen
- C. Nitrogen
- D. Carbon

Answer: A



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4. Early atmosphere contained methane and other hydrocarbons. They have been now replaced by

A. Nitrogen

B. Oxygen

C. Carbondioxide

D. Hydrogen

Answer: C



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5. According to the discovery made in 1980's. RNA can act like enzyme to assemble new RNA molecules on RNA template. Which of the following statements is not proved by this theory?

A. Coacervates may not have been the first step in the evolution of life

B. Perhaps the first macromolecule was RNA

C. Coacervates were the basis for the first cell

D. After formation of RNA, stability of molecule improved by surrounding RNA withing a coacervate

Answer: C



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6. Which among the following are called the Darwin's finches?

- A. Archaeopteryx
- B. Pteranodon
- C. Pavo cristatus
- D. Small black birds

Answer: D



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7. Which of the following scientists believed in the concept of natural selection like Darwin?

A. Lamarck

B. S.L. Miller

C. Alfred Wallace

D. Haldane

Answer: C



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8. The fish-like giant reptile which existed 200 mya was

A. Pteranodon

B. Ichthyosaur

C. Triceratops

D. Tyrannosaurus

Answer: B



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9. Which of the following was a land dinosaur?

- A. Triceratops
- B. Pteranodon
- C. Archaeopteryx
- D. Ichthyosaur

Answer: A



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10. The wrongly matched pair w.r.t. the organisms and their probable time of evolution is

- A. Jawless fish- around 350 mya
- B. Lobefins - around 350 mya
- C. Fish-like giant reptiles-around 320 mya

D. Sea weeds- around 320 mya

Answer: C



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11. Seed ferns originated in

A. Carboniferous period

B. Devonian period

C. Silurian period

D. Cretaceous period

Answer: A



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12. The dinosaurs descended from _____ ancestors.

A. Therapsids

B. Pelycosaurs

C. Synapsids

D. Thecodonts

Answer: D



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13. Which of the following had huge fearsome dagger like teeth?

A. Dryopithecus

B. Tyrannosaurus

C. Ichthyosaur

D. Homo erectus

Answer: B



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14. the origin of seeds in the land plants was achieved about 345 million years ago, in lineages recognised as ancestral to all more advanced vascular plants in

- A. Rhynia
- B. Tracheophyte ancestor
- C. Seed ferns
- D. Conifers

Answer: C



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15. Origin of mammal-like reptiles occurred in

- A. Triassic period
- B. Permian period

C. Jurassic period

D. Tertiary period

Answer: B



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16. As horse evolved, there was progressive reduction in number of toes.

Which of the following is correct sequence in the evolution of horse?

A. Orohippus, Hyracotherium, Mesohippus, Callipus,

Merychippus, Pliohippus, Equus

B. Hyracotherium, Orohippus, Mesohippus, Merychippus, Pliohippus,

Equus

C. Orohippus, Callipus, Hyracotherium, Mesohippus, Merychippus,

Pliohippus, Equus

D. Hyracotheriu,

Meshippus,

Orohippus,

Callipus, Merychippus, Pliohippus and Equus.

Answer: B



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17. The homologous structures are

A. Anatomically different

B. Functionally different, evolved from different ancestors

C. Functionally same

D. Anatomically, same but perform different functions.

Answer: D



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18. Tasmanian wolf and placental wolf appear similar due to

- A. Chemical evolution
- B. Divergent evolution
- C. Biochemical evolution
- D. Convergent evolution.

Answer: D



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19. The Darwinian variations are

- A. Small and directionless
- B. Random and directional
- C. Small and directional
- D. Random and directionless.

Answer: C



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20. Natural selection leads to the directional change when

- A. More individuals acquire mean character value in the distribution curve
- B. More individuals acquire peripheral character value of both ends of distribution curve
- C. More individuals acquire value other than the mean character value at any one end of distribution curve
- D.

Answer: C



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21. Find the odd one out related to evolution

- A. Vertebrate hearts
- B. Vertebrate brains
- C. Wings of butterfly and of birds
- D. Forelimbs of mammals

Answer: C



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22. Evolutionary process, giving rise to new species adapted to new habitats and ways of life, is called as adaptive radiation, for example

- A. Darwin's Finches in Galapagos islands
- B. Australian marsupials that radiated to form new species
- C. Wolf and Tasmanian Wolf
- D. Both 1 and 2

Answer: D



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23. Humming birds and hawk illustrate

- A. Convergent evolution
- B. Homology
- C. Adaptive radiation
- D. Parallel evolution.

Answer: B::C



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24. Which one provides direct and solid evidence in favour of organic evolution through ages ?

A. Atavism

B. Palaeontology

C. Vestigeal organs

D. Galapagos island fauna

Answer: B



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25. When more than one adaptive radiations appeared to have occurred in an isolated geographical area, it is called.

A. Divergent evolution

B. Convergent evolution

C. Anthropogenic evolution.

D. Saltation.

Answer: D

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26. According to Hardy-Weinberg principle, difference in the values of measured and expected allelic frequencies indicates all of the following.

Except

- A. Changes in the gene pool
- B. Disturbance in genetic equilibrium.
- C. Extent of evolutionary change
- D. Absence of any kind of evolution.

Answer: B

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27. Which of the following was discovered in Ethiopia and Tanzania?

- A. Fossils of dinosaurs

B. Few fossils of man-like bones

C. Alive coelacanth

D. Fossils of Archaeopteryx

Answer: A



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28. Which of the following fact is not true for Homo habilis?

A. They had a brain capacity of 1400cc

B. They were the first human-like being

C. They showed the hominid features

D. They probably did not eat meat.

Answer: C



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29. The ancestors of man who used hides to protect their body were

- A. Homo erectus
- B. Homo habilis
- C. Neanderthal man
- D. Australopithecus

Answer: C



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30. An evolutionary trend in which there is general degeneration and loss of organs is

- A. Progressive
- B. Vestigial
- C. Retrogressive
- D. Stasigenesis

Answer: C



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Section C Previous Years Questions

1. Artificial selection to obtain cows yielding higher milk output represents
- A. Stabilizing selection as it stabilizes this character in the population.
 - B. Directional as it pushes the mean of the character in one direction.
 - C. Disruptive as it splits the population into two one yielding higher output and the other lower output
 - D. Stabilizing followed by disruptive as it stabilizes the population to produce higher yielding cows

Answer: B



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2. Genetic drift operates in

- A. Small isolated population
- B. Large isolated population
- C. Non-reproductive population
- D. Slow reproductive population.

Answer: A



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3. In Hardy-Weinberg equation, the frequency of heterozygous individual is represented by

A. p^2

B. $2pq$

C. pq

D. q^2

Answer: B



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4. The chronological order of human evolution from early to the recent is:

A. Australopithecus → Ramapithecus → Homo babills → Homo erectus

B. Ramapithecus → Australopithecus → Homo habilis → Homo erectus

C. Ramapithecus → Homo habilis → Australopithecus → Homo erectus

D. Autralopithecus → Homo habilis → Ramapithecus → Homo erectus

Answer: B



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5. Which of the following is the correct sequence of events in the origin of life

- I. Formation of protobionts
- II. Synthesis of organic monomers
- III. Synthesis of organic polymers
- IV. Formation of DNA-based genetic systems

A. i,ii,iii,iv

B. i,iii,ii,v

C. ii,iii,i,iv

D. ii,iii,iv,i

Answer: C



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6. A molecule that can act as a genetic material must fulfill the traits given below.

- A. it should be able to express itself in the form of Mendelian characters
- B. it should be able to generate its replica
- C. it should be unstable structurally and chemically
- D. it should provide the scope for slow changes that are required for evolution.

Answer: C



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7. Which of the following structures is homologous to the wing of a bird?

- A. Flipper of Whale

B. Dorsal fin of a Shark

C. Wing of a Moth

D. Hind limb of Rabbit.

Answer: A



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8. Analogous structures are a result of

A. Stabilizing selection.

B. Divergent evolution.

C. Convergent evolution

D. Shared ancestry

Answer: C



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9. Following are the two statements regarding the origin of life

(a) the earliest organisms that appeared on the earth were nongreen and presumably anaerobic

The first autotrophic organisms were the chemoautotrophs that never released oxygen.

Of the above statements which one of following options is correct

- A. Both a and b are false
- B. a is correct but b is false
- C. b is correct but a is false
- D. Both a and b are correct.

Answer: D



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10. The wings of a bird and the wings of an insect are

- A. Homologous structure and represent convergent evolution
- B. Homologous structures and represent divergent evolution
- C. Analogous structures and represent convergent evolution
- D. Phylogenetic structures and represent divergent evolution.

Answer: C

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11. Industrial melanism is an example of

- A. Neo Lamarckism
- B. Neo Darwinism
- C. Natural selection
- D. Mutation.

Answer: C

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12. Which of the following had the smallest brain capacity

- A. Homo habilis
- B. Homo erectus
- C. Homo sapiens
- D. Homo neanderthalensis

Answer: A



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13. Which is the most common mechanism of genetic variation in the population of a sexually-reproducing organism

- A. Recombination
- B. Transduction
- C. Chromosomal aberrations

D. Genetic drift

Answer: A



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

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

Answer: B



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15. Forelimbs of cat, lizard used in walking , fore-limbs of whale used in swimming and forelimbs of bats used in flying are an example of :

- A. Analogous organs
- B. Adaptive radiation
- C. Homologous organs
- D. Convergent evolution.

Answer: C



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16. Which one of the following are analogous structures?

- A. Wings of Bat and Wings of Pigeon
- B. Gills of Prawn and Lungs of Man
- C. Thorns of Bougainvillea and Tendrils of Cucurbita
- D. Flippers of Dolphin and Legs of Horse

Answer: B



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17. The eye of octopus and eye of cat show different patterns of structure, yet they perform similar function. This is an example of

- A. Homologous organs that have evolved due to divergent evolution
- B. Analogous organs that have evolved due to convergent evolution
- C. Analogous organs that have evolved due to divergent evolution.
- D. Homologous organs that have evolved due to divergent evolution.

Answer: B



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18. The process by which organisms with different evolutionary history evolve similar phenotypic adaptations in response to a common

environmental challenge, is called

- A. Convergent evolution
- B. Non-random evolution
- C. Adaptive radiation
- D. Natural selection.

Answer: A



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19. The tendency of population to remain in genetic equilibrium may be disturbed by

- A. Lack of migration
- B. Lack of mutations
- C. Lack of random mating
- D. Random mating.

Answer: C



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20. Variation in gene frequencies within populations can occur by chance rather than by natural selection. This is referred to as

- A. Genetic drift
- B. Random mating
- C. Genetic load
- D. Genetic flow

Answer: A



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21. According of Darwin, the organic evolution is due to

A. Interspecific competition

B. Competition within closely related species

C. Reduced feeding efficiency in one species due to the presence of interfering species

D. Intraspecific competition.

Answer: A



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22. Evolution of different species in a given area starting from a point and spreading to other geographical areas

A. Migration

B. Divergent evolution

C. Adaptive radiation

D. Natural selection.

Answer: C



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23. What was the most significant trend in the evolution of modern man (Homo sapiens) from his ancestors

- A. Increasing cranial capacity
- B. Upright posture
- C. Shortening of jaws
- D. Binocular vision

Answer: A



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24. Which one of the following options gives one correct example each of convergent evolution and divergent evolution

	Convergent evolution	Divergent evolution
(a)	Eyes of octopus and mammals	Bones of forelimbs of vertebrates
(b)	Thorns of Bougainvillia and tendrils of <i>Cucurbita</i>	Wings of butterflies and birds
(c)	Bones of forelimbs of vertebrates	Wings of butterfly and birds
(d)	Thorns of Bougainvillia and tendrils of <i>Cucurbita</i>	Eyes of Octopus and mammals

A.

Convergent Evolution

Divergent evolutions

Bones of forelimbs of vertebrates

Wings of butterflies and birds

B.

Convergent Evolution

Divergent evolution

Thorns of Bougainvilia and tendrils of Cucurbita

Eyes of Octopus and mammals

C.

Convergent Evolution

Divergent evolutions

Eyes of Octopus and mammals

Bones of forelimbs of vertebrates

D.

Convergent Evolution

Divergent evolution

Thorns of Boungainvilia and tendrils of Cucurbita

Wings of butterflies and birds

Answer: C



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25. The extinct human who lived 100000 to 40000 years ago, in Europe, Asia and parts of Africa, with short stature, heavy eye brows, receding fore heads, large jaws with heavy teeth, stocky bodies, a lumbering gait and stooped posture was

- A. Ramapithecus
- B. Homo habilis
- C. Neanderthal human
- D. Cro-magnon humans

Answer: C



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26. The idea of mutations was brought forth by

- A. Hugo de Vries, who worked on evening primrose

- B. Gregor Mendel, who worked on *Pisum sativum*
- C. Hardy Weinberg, who worked on allele frequencies in a population
- D. Charles Darwin, who observed a wide variety of organisms during sea voyage.

Answer: A

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27. Darwin's finches are a good example of

- A. Convergent evolution
- B. Industrial melanism
- C. Connecting link
- D. Adaptive radiation

Answer: D

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28. Given below are four statements (A-D) each with one or two blanks.

Select the option which correctly fills up the blanks in two statements.

(A) Wings of butterfly and birds look alike and are the results of i evolution.

(B) Miller showed that CH_4 , H_2 , NH_3 and i when exposed to electric discharge in a flask resulted in formation of ii

(C) Vermiform appendix is a i organ and an ii evidence of evolution.

(D) According to Darwin, evolution took place due to i and ii or the fittest.

A. (D)-i-Small variations, (ii) Survival.

(A)-i-Convergent

B. (A)-(i) Convergent,

(B) -i-Oxygen, ii-nucleosides

C. (B)-i-Water vapour,ii-Amino acids

(C)-i-Rudimentary,ii-Anatomical

D. (C)-i-Vestigial,ii-Anatomical

(D)-(i) Mutatiplication.

Answer: A



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29. Peripatus is a connecting link between :

A. Mollusca and Echinodermata

B. Annelida and Arthropoda

C. Coelenterata and Porifera

D. Ctenophora and Platyhelminthis

Answer: B



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30. In the case of peppered moth (*Biston betularia*) the black-coloured form became dominant over the light-coloured form in England during industrial revolution. This is an example of

- A. Appearance of the darker coloured individuals due to very poor sunlight.
- B. Protective mimicry
- C. Inheritance of darker colour character acquired due to the darker environment
- D. Natural selection whereby the darker forms were selected

Answer: D



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31. Which one of the following scientist's name is correctly matched with the theory put forth by him?

- A. Mendel Theory of Pangenesis
- B. Weismann Theory of continuity of Germplasm
- C. Pasteur Inheritance of acquired characters
- D. de Vries Natural selection

Answer: B

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32. Which one of the following is incorrect about the characteristics of protobionts (coacervates and microspheres) as envisaged in the abiogenic origin of life)

- A. They could maintain an internal environment
- B. They were able to reproduce
- C. They could separate combination of molecules from the surroundings
- D. They were partially isolated from the surroundings.

Answer: B



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33. Which one of the following pairs of items correctly belongs to the category of organs mentioned against it

A. Wings of honey-bee and wings of crow-Homologous organs

B. Thorn of Bougainvillea and tendrils of Cucurbita Analogous organs

C. Nictitating membrane and blind spot in human eye -Vestigial organs

D. Nephridia of earthworm and malpighian tubules of cockroach - Excretory organs.

Answer: D



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34. Which one of the following in birds, indicated their reptilian ancestry
- A. Eggs with a calcareous shell
 - B. Scales on their hind limbs
 - C. Four-chambered heart
 - D. Two special chambers crop and gizzard in their digestive tract.

Answer: B



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35. When two species of different genealogy come to resemble each other as a result of adaptation, the phenomenon is termed
- A. Convergent evolution
 - B. Divergent evolution
 - C. Microevolution
 - D. Co-evolution

Answer: A



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36. Adaptive radiation refers to

- A. Power of adaptation in an individual to a variety of environments
- B. Adaptations due to Geographical isolation
- C. Evolution of different species from a common ancestor
- D. Migration of members of a species to different geographical areas.

Answer: C



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37. The finches of Galapagos islands provide an evidence in favour of

- A. Biogeographical Evolution

B. Special Creation

C. Evolution due to Mutation

D. Retrogressive Evolution

Answer: A



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38. One of the important consequences of geographical isolation is

A. Random creation of new species

B. No change in the isolation faunax

C. Preventing speciation

D. Speciation through reproductive isolation.

Answer: D



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39. Industrial melanism as observed in peppered moth proves that

- A. Melanism is a pollution-generated feature
- B. The true black melanic forms arise by a recurring random mutation
- C. The melanic form of the moth has no selective advantage over lighter form in industrial area
- D. The lighter form moth has no selective advantage either in polluted industrial area or non-polluted area.

Answer: B



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40. The concept of chemical evolution is based on :

- A. Possible origin of life by combination of chemicals

B. Crystallization of chemicals under suitable environmental conditions

C. Interaction of water air and clay under

D. Effect of solar radiation of chemicals

Answer: A

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41. Among the human ancestors the brain size was more than 1000 cc in:

A. Homo habilis

B. Homo neanderthalensis

C. Homo erectus

D. Ramapithecus

Answer: B

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42. Select the correct statement from the following

A. Mutations are random and directional

B. Darwinian variations are small and directionless

C. Fitness is the end result of the ability to adapt and gets selected by nature

D. All mammals except whales and camels have seven cervical vertebrae

Answer: C



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43. Which one of the following statement is correct :

A. Ontogeny repeats phylogeny

B. Stem cells are specialized cells

C. There is no evidence of the existence of gills during embryogenesis of mammals

D. All plant and animal cells are totipotent.

Answer: A

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44. Differentiation of organs and tissues in a developing organism, is associated with

A. Deletion of genes

B. Developmental mutations

C. Differential expression of genes

D. Lethal mutations

Answer: C

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45. What is common of Whale, Seal and Shark?

- A. Homolothermy
- B. Seasonal migration
- C. Thick subcutaneous fat
- D. Convergent evolution.

Answer: D

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46. 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: C



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47. An important evidence in favour of organic evolution is the occurrence of :

A. Homologous and vestigial organs

B. Analogous and vestigial organs

C. Homologous organs only

D. Homologous are analogous organs.

Answer: A



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48. Which one of the following is not a living fossil?

- A. King crab
- B. Sphenodon
- C. Archaeopteryx
- D. Peripatus

Answer: C



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49. Jurassic period of the Mesozoic era is characterised by

- A. Gymnosperms are dominant plants and first birds appear
- B. Radiation of reptiles and origin of mammal life reptiles
- C. Dinosaurs become extinct and angiosperms appear.
- D. Flowering plants and first dinosaurs appear.

Answer: A



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50. The evolutionary history of an organism is known as

- A. Phylogeny
- B. Ancestry
- C. Palenotology
- D. Ontogeny

Answer: A



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51. Sickle cell anemia has not been eliminated from African population as

- A. It is controlled by recessive genes

- B. It is not a fatal disease
- C. It provides immunity against malaria
- D. It is controlled by dominant genes

Answer: C



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52. There are two opposing views about origin of modern man. According to one view Homo erectus in Asia were the ancestors of modern man. A study of variation of DNA however suggested African origin of modern man. What kind of observation on DNA variation could suggest this ?

- A. Greater variation in Africa than in Asia
- B. Variation only in Asia and no variation in Africa
- C. Greater variation in Asia than in Africa
- D. Similar variation in Africa and Asia.

Answer: A



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53. Which one of the following phenomena supports Darwin's concept of natural selection in organic evolution?

- A. Development of transgenic animals
- B. Production of 'Dolly' the sheep by cloning
- C. Prevalence of pesticide resistant insects
- D. Development from 'stem cells' for organ transplantation.

Answer: C



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54. Which of the following is not true for a species :

- A. Members of a species can interbreed
- B. Variations occurs among members of a species
- C. Each species is reproductively isolated from every other species
- D. Gene flow does not occur between the populations of a species.

Answer: D

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55. Which one of the following experiments suggests that simplest living organisms could not have originated spontaneously from non-living matter

- A. Microbes did not appear in stored meat
- B. Larvae could appear in decaying organic matter
- C. Microbes appeared from unsterlized organic matter
- D. Meat was not spoiled , when heated and kept sealed in a vessel.

Answer: D



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56. Hogo de Vries gave his mutation theory on organic evolution while working on :

- A. *Althea rosea*
- B. *Drosophila melanogaster*
- C. *Oenothera lamarckiana*
- D. *Pisum sativum*

Answer: C



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57. Which of the following is the relatively most accurate method for dating of fossils ?

- A. Potassium-Argon method
- B. Uranium-Lead method
- C. Electron-Spin resonance method
- D. Radio-Carbon method

Answer: C

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58. Random non-directional change in allele frequencies that occurs by chance in all populations and especially in small populations is known as:

- A. Mutation
- B. Migration
- C. Natural selection
- D. Genetic drift.

Answer: D

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59. The finch species of Galapagos island are grouped according to their food sources. Which of the following is not a finch food

- A. Seeds
- B. Carrion
- C. Insects
- D. Tree buds.

Answer: B

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60. Dianosars dominated the world in which of the following geological era?

- A. Devonion

B. Coenozoic

C. Jurassic period

D. Mesozoic.

Answer: D



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61. What is true about the isolated small tribal populations ?

A. There is no change in population size as they have a large gene pool

B. There is a decline in population as boys marry girls only from their own tribe

C. Hereditary diseases like colour blindness do not spread in the isolated population

D. Wrestlers who develop strong body muscles in their life time pass this character on to their progeny.

Answer: B

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62. Which Statement best explains the evolutionary advantage of meiosis?

- A. Meiosis is necessary for sexual reproduction
- B. Genetic recombinations are possible from generation to generation
- C. Meiosis alternates with mitosis for generation to generation
- D. The same genetic system is passed on from generation to generation.

Answer: B

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63. Which one is irrelevant to evolution of man?

- A. Perfection of hand for tool making
- B. Change of diet from hard nuts and hard roots to soft food
- C. Loss of tail
- D. Increase in the ability to communicate with others and develop community behaviour

Answer: C



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64. Which of the following evidences does not favour the lamarckian concept of inheritance of acquired characters?

- A. Lack of pigment in cave-dwelling animals
- B. Melanization in peppered moth

C. Absence of limbs in snakes

D. Presence of webbed toes in aquatic birds.

Answer: B



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65. Which of the following is a pair of homologous organs?

A. Pectoral fin of fish and fore-limb of horse

B. Wings of grasshopper and wings of crow

C. Lungs of rabbit and gills of prawn

D. Wings of bat and wings of butterfly

Answer: A



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66. The concept that 'population tends to increase geometrically while food supply increases arithmetically' was put forward by :

- A. Thomas Malthus
- B. Charles Darwin
- C. Stuart Mill
- D. Adam Smith

Answer: A



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67. The change of the lighter-coloured variety of peppered moth (*Biston betularia*) to its darker variety (*Biston carbonaria*) is due to

- A. Mutation
- B. Regeneration
- C. Genetic isolation

D. Temporal isolation

Answer: A



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68. The homologous organs are those that show similarity in

A. Appearance

B. Function

C. Origin

D. Size

Answer: C



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69. The presence of gill slits, in the embryos of all vertebrates, supports the theory of

- A. Metamorphosis
- B. Biogenesis
- C. Organic evolution
- D. Recapitulation

Answer: D



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70. Two zoogeographical regions separated by high mountain ranges are :

- A. Neoractic and Palaerctic
- B. Neotropical and Ethiopian
- C. Oriental and Australian

D. Palaeartic and Oriental

Answer: D



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71. Which era is dubbed as the age of prokaryotic microbes ?

A. Precambrian

B. Phanerozoic

C. Archean

D. Cambrian

Answer: A



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72. The animals of cold countries have relatively shorter and poorly developed ears, eyes, hairs and other, phenotypic characters, This is known by which law?

- A. Cope's Law
- B. Dollo's Law
- C. Allen's Law
- D. Bergmann's Law

Answer: C



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73. Which of the following changes for man in the course of evolution is probably useless?

- A. Development of being erect
- B. Development of oronial capacity

C. Loss of tal

D. Development of opposable thumb.

Answer: C



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74. Which is direct ancestor of Homo sapiens ?

A. Australopithecus

B. H. sapiens neanderthalls

C. Homo erectus

D. Ramapithecus

Answer: C



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75. Which of the following is the correct group of vestigial organs in man?

- A. Nictitating membrane, ear muscles, eyelids and coccyx
- B. Appendix, coccyx, ear muscles and elbow joints
- C. Wisdom tooth, coccyx, body hair and ear pinna
- D. Wisdom tooth, body hair , nictitating membrane and vermiform appendix

Answer: D



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76. Improvement of human race by controlled selective breeding between individual with desirable characteristics is called

- A. Inbreeding
- B. Euthenics
- C. Eugenics

D. None of these

Answer: C

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77. The correct sequence for the manufacture of the gases on the primitive earth is

A. NH_3 , nucleic acid, protein and carbohydrate

B. Protein, carbohydrate, water and nucleic acid

C. NH_3 protein, carbohydrate and nucleic acid

D. NH_3 , water , cucleic acid and protein.

Answer: C

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78. The first domesticated animals by primitive man was

A. cat

B. cow

C. dog

D. horse

Answer: C



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79. Which one of the following statements is correct regarding evolution of mankind

A. Homo erectus is preceded by Homo habilis

B. Neanderthal man and Cro-magnon man were living at the same time

C. Australopithecus was living in Australia

D. None of these

Answer: A



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80. Common origin of man and chimpanzee is best shown by

- A. Binocular vision
- B. Homology in chromosomes
- C. Dental formula
- D. Cranial capacity

Answer: B



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81. Which of the following is a living fossil?

A. *Mirabilis jalapa*

B. *Gingko biloba*

C. *Pinus longifolia*

D. *Dalbergia sissoo*

Answer: B



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82. Evolutionary convergence is characterized by

A. Development of dissimilar characteristics in closely related groups

B. Development of a common set of characteristics in groups of different ancestry

C. Development of characteristics by random.

D. Replacement of common characteristics in different groups

Answer: B



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83. In the developmental history of mammalian heart. It is observed that it passes through a two chambered fish like heart, three chambered frog like heart and finally four chambered stage. To which hypothesis can this above cited statement be approximated?

- A. Lamarchk's principle
- B. Mendelian principles
- C. Biogenetic law
- D. Hardy Weinberg law

Answer: C



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84. The age of the fossil of Dryopithecus on the geological time scale is

A. 2.5×10^6 years back

B. 50×10^6 years back

C. 75×10^6 years back

D. 25×10^6 years back

Answer: D

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85. Which one of the following statement is correct?

A. Australopithecus is the real ancestor of modern man

B. Neanderthal man is the direct ancestor of Homo sapiens

C. Homo erectus is the ancestor of man

D. Cro-magnon man's fossil has been found in Ethiopia

Answer: C

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86. Species occurring in different geographical area are called as

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

Answer: B



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87. The diversity in the type of beaks of finches adapted to different feeding habits on the galapagos islands, as observed by Darwin provides evidence for

- A. Intraspecific competition
- B. Interspecific competition

C. Origin of species by natural selection

D. Intraspecific variations.

Answer: C



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88. Genetic drift operates only in

A. Larger populations

B. Mendelian populations

C. Island populations

D. Smaller populations.

Answer: D



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89. Phenomenon of industrial melanism demonstrates

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

Answer: C



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90. Which of the following are homologous organs?

- A. Wings of bird and wings of a bat
- B. Nails of human being and claws in cat.
- C. Wings of bird and wings of insect.
- D. Wings of bat and wings of cockroach

Answer: B



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91. Homo sapiens have evolved in

- A. Paleocene
- B. Pleistocene
- C. Oligocene
- D. Miocene

Answer: B



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92. Character which is closely related to human evolution:

- A. Disappearance of tail

B. Reduction in size of jaws

C. Binocular vision

D. Flat nails

Answer: B



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93. Which evidence of evolution is related to Darwin's finches?

A. Evidences from bio geographical distribution

B. Evidences from comparative anatomy

C. Evidences from embryology

D. Evidences from palaeontology

Answer: A



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94. Who is directly related to man

- A. Gorilla
- B. Rhesus
- C. Gibbon
- D. Orangutan

Answer: A



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95. The endangered largest living lemur idri idri is in inhabitant of

- A. Madagascar
- B. Mauritius
- C. India
- D. Sri Lanka

Answer: A



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96. Which is the most important factor for continuity of a species from evolutionary point of view?

- A. Replication of genetic material
- B. Formation of gametes
- C. Synthesis of proteins
- D. None of these

Answer: A



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97. Due to discovery of which of the following in 1980, the evolution was termed as RNA world :

- A. m-RNA,t-RNA synthesise proteins
- B. In some virus RNA is genetic material
- C. RNA have enzymatic property
- D. RNA is not found in all cells.

Answer: C

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98. Reason of diversity in living beings is

- A. Mutation
- B. Long term evolutionary change
- C. Gradual change
- D. Short term evolutionary chagne.

Answer: B

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99. Similarities in organisms with different genotype indicate :-

- A. Microevolution
- B. Macroevolution.
- C. Convergent evolution.
- D. Divergent evolution.

Answer: C



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100. Which of the following is closest relative of man?

- A. Chimpanzee
- B. Gorilla
- C. Orangutan

D. Gibbon

Answer: A



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101. Which of the following is correct order of the evolutionary history of man?

- A. Peking man, Homo sapiens, Neanderthal man, Cro magnon man
- B. Peking man, Habilus man, Neanderthal man, Cro magnon man
- C. Peking man, Heidelberg man, Neanderthal man, Cro magnon man.
- D. Peking man, Neanderthal man, Homo sapiens, Heidelberg man.

Answer: C



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102. 1st life on earth was

- A. Cyanobacteria
- B. Chemoheterotrophs
- C. Autotrophs
- D. Photoautotrophs

Answer: B



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103. The frequency of an allele in an isolated population may change due to

- A. Genetic drift
- B. Gene flow
- C. Mutation
- D. Natural selection.

Answer: A



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104. In Lederberg's replica what shall be used to obtain streptomycin resistant strain ?

- A. Minimal medium and streptomycin
- B. Complete medium and streptomycin
- C. Only minimal medium
- D. Only complete medium.

Answer: B



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105. Forthcoming generation will be less adaptive than the present generation due to

A. Natural selection

B. Mutation

C. Genetic drift

D. Adaptation

Answer: A



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106. Occurrence of endemic species in South America and Australia is due to

A. These species has been extinct from other regions

B. Continental separation

C. There is no terrestrial route to these places

D. Retrogressive evolution.

Answer: B

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107. If Darwin's theory of pangenesis shows similarity with theory of inheritance of acquired character then what shall be correct according to it

- A. Useful organs becomes strong and developed while useless organs become extinct
- B. Size of organs increase with ageing
- C. Development of organs is due to will power
- D. There should be some physical basis of inheritance.

Answer: D

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108. Cause of mimicry is

A. Concealment

B. Offence

C. Defence

D. Both 1 and 3

Answer: A



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109. Some bacteria are able to grow in streptomycin containing medium due to :

A. Natural selection

B. Induced mutation

C. Reproductive isolation

D. Genetic drift

Answer: A

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110. Reason of fast speciation in present day crop plant is :

- A. Mutation theory
- B. Isolation
- C. Polyloidy
- D. Sexual reproduction.

Answer: C

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111. Which of the following is most important for speciation?

- A. Seasonal isolation
- B. Reproductive isolation
- C. Behavioural isolation

D. Tropical isolation.

Answer: B



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112. There is no life on moon due to the absence of :

A. O_2

B. Water

C. Light

D. Temperature.

Answer: B



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113. According to fossils discovered up to present time origin and evolutions of man was started from

- A. France
- B. Java
- C. Africa
- D. China

Answer: C



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114. In which condition the gene ratio remains constant for any species ?

- A. Sexual selection
- B. Random mating
- C. Mutation
- D. Gene flow

Answer: B



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115. In which ear reptiles were dominant ?

- A. Coenozoic era
- B. Mesozoic era
- C. Palaeozoic era
- D. Archaeozoic era

Answer: B



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116. Two different species can not live for long duration in the same niche or habitat. This law is

- A. Allen's law
- B. Gause's hypothesis
- C. Dollo's rule
- D. Weissman's theory.

Answer: B

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117. Convergent evolution is illustrated by

- A. Rat and Dog
- B. Bacterium ad protozoan
- C. Star fish and Cuttle fish
- D. Cephalopod eye and vertebrate eye

Answer: D

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118. Random genetic drift in a population probably result from

- A. Highly genetically variable individuals
- B. Interbreeding within this population
- C. Constant low mutation rate
- D. Large population size.

Answer: B



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119. In recent years,DNA sequences (nucleotide sequence) of maternal DNA and Y-chromosome were considered for the study of human evolution ,because :

- A. They are small and therefore, easy to study

- B. They are uniparental in origin and do not take part in recombination
- C. Their structure is known in greater detail
- D. They can be studied from the samples of fossil remains.

Answer: B

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120. Industrial melanism is an example of

- A. Drug resistance
- B. Darkening of skin due to smoke from industries
- C. Protective resemblance with the surroundings
- D. Defensive adaptation of skin against ultraviolet radiations.

Answer: C

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121. Darwin in his 'Natural Selection Theory' did not believe in any role of which one of the following in organic evolution

- A. Parasites and predators as natural enemies
- B. Survival of the fittest
- C. Struggle for existence
- D. Discontinuous variations.

Answer: D



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122. Which one of the following correctly describes the homologous structures?

- A. Organs with anatomical similarities, but performing different functions.

B. Organs with anatomical dissimilarities, but performing same function.

C. Organs that have no function now, but had an important function in ancestors

D. Organs appearing only in embryonic stage and disappearing later in the adult.

Answer: A



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123. Which one of the following is categorised under living fossils?

A. Pinus

B. Cycas

C. Selaginella

D. Taxus

Answer: B



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124. Age of fossils in the past was generally determined by radiocarbon method and other methods involving radioactive elements found in the rocks. More precise methods, which were used recently and led to the revision of the evolutionary periods for different groups of organisms, includes

- A. Study of carbohydrates proteins in fossils
- B. Study of the conditions of fossilization.
- C. Electron spin resonance and fossil
- D. Study of carbohydrates / proteins in rocks.

Answer: C



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125. Presence of gills in the tadpole of frog indicates that :

- A. Fishes were amphibious in the past
- B. Fishes evolved from frog like ancestors
- C. Frogs will have gills in future.
- D. Frogs evolved from gilled ancestors.

Answer: D



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126. According to Oparin, which one of the following was not present in the primitive atmosphere of the earth?

- A. Methane
- B. Oxygen
- C. Hydrogen
- D. Water vapour

Answer: B



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127. Using imprints from a plate with complete medium and carrying bacterial colonies, you can select streptomycin resistant mutants and prove that such mutations do not originate as adaptation. These imprints need to be used

- A. On plates with and without streptomycin
- B. On plates with minimal medium
- C. Only on plates with streptomycin
- D. Only on plates without streptomycin.

Answer: A



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128. At a particular locus, frequency of allele A is 0.6 and that of allele a is 0.4. what would be the frequency of heterozygotes in a random mating population at equilibrium?

A. 0.36

B. 0.16

C. 0.24

D. 0.48

Answer: D



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129. G-6-P dehydrogenase deficiency is associated with hemolysis of :

A. Leucocytes

B. Lymphocytes

C. Platelets

D. RBCs

Answer: D



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130. Probiotics are

- A. Cancer inducing microbes
- B. New kind of food allergens
- C. Live microbial food supplement
- D. Safe antibiotics

Answer: C



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131. A high density of elephant population in an area can result in

A. Intra specific competition

B. Inter specific competition

C. Predation on one another

D. Mutualism

Answer: A

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132. One of the important consequences of geographical isolation is

A. Preventing speciation

B. Speciation through reproductive isolation

C. Random creation of new species

D. No change in the isolated fauna

Answer: B

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133. Sickle cell anemia is

- A. Characterized by elongated sickle like RBCs
- B. An autosomal linked dominant trait
- C. Caused by substituitio of valine by glutamic acid in the beta globin chain of haemoglobin
- D. Caused by a change in a single base pair of DNA

Answer: D



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134. Mutations can be induced with

- A. Gamma, radiations
- B. Intra Red radiations

C. I A A

D. Ethylene

Answer: A



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135. Darwin judged the fitness of an individual by

A. Ability to defend itself

B. Strategy of obtain food

C. Number of offspring

D. Dominance over other individuals.

Answer: C



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136. Analogous structures are a result of

- A. Anatomically different but performing similar functions
- B. Anatomically similar but performing different functions.
- C. Anatomically similar and functioning similarly
- D. Anatomically different and functioning differently.

Answer: A



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137. Tendrils in plants are an example of

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

Answer: A



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138. Resemblance of one organism to another for protection and hiding:

- A. Mimicry
- B. Predation
- C. Adaptation
- D. Camouflage

Answer: A



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139. "Complete competitors cannot coexist" is true for :

- A. Character displacement

B. Competitive exclusion

C. Primary succession

D. Secondary succession.

Answer: B



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140. 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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141. Which of the following animals shows discontinuous distribution?

- A. Green mussels
- B. Bats
- C. Lung fishes
- D. Pacific salmon

Answer: C



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142. Balancing selection ' promotes :

- A. Homozygotes
- B. Heterozygotes
- C. Polyploids
- D. Recessive traits.

Answer: B



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143. In a population of 1000 individuals 360 belong to genotype AA, 480 to Aa and the remaining 160 to aa. Based on this data, the frequency of allele A in the population is

A. 0.4

B. 0.5

C. 0.6

D. 0.7

Answer: C



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1. A: During evolution pouched mammals of Australia survived.

R: Due to lack of competition from any other mammal due to continental drift.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4)

Answer: A



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2. A: Mesozoic is the era of dinosaurs but they suddenly disappeared from the earth.

R: Dinosaurs may have changed into birds or climatic changes killed them.

- A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)
- B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)
- C. If Assertion is true statement but Reason is false, then mark (3)
- D. If both Assertion and Reason are false statements, then mark (4)

Answer: A



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3. A: Mutations are non-directional.

R: Darwin's small variations are directional.

- A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4)

Answer: B

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4. A: During industrialisation dark-winged or melanised moths were more abundant.

R: They were able to camouflage themselves, hide in the background and survived.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4)

Answer: A



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5. A: Tyannosaurus rex had fearsome dagger like teeth.

R: Tyrannosaurus was largest dinosaur depending upon herbs and shrubs.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4)

Answer: C



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6. A: During evolution the early time period was without ozone layer.

R: Ozone layer absorbs U.V. rays to some extent.

- A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)
- B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)
- C. If Assertion is true statement but Reason is false, then mark (3)
- D. If both Assertion and Reason are false statements, then mark (4)

Answer: B



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7. A: Theory of biogenesis explains that life arises from pre-existing life.

R: Louis Pasteur finally disapproved the theory of spontaneous generation of life.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4)

Answer: B



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8. A: India falls under oriental realm out of other biogeographical realms.

R: World is divided in six biogeographical realms.

- A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)
- B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)
- C. If Assertion is true statement but Reason is false, then mark (3)
- D. If both Assertion and Reason are false statements, then mark (4)

Answer: B



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9. A: Archaeopteryx had free caudal vertebrae and toothed beak with teeth like reptiles.

R: It is missing link between reptiles and bird.

- A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4)

Answer: B

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10. A: Placental wolf and Tasmanian wolf (a marsupial) show convergent evolution.

R: Like marsupials placental mammals in other parts of world also exhibit adaptive radiation in evolving into varieties of such placental mammals each of which appears to be similar to a corresponding marsupial.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4)

Answer: A

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11. A: There is 99% homology is haemoglobin of man and Gorilla.

R: Modern man is direct descendent of Gorilla.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4)

Answer: A

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12. A: Many countries have banned the use of antibiotics in the cattle feed.

R: Dairymen give antibiotics in the feed to the cattle and it becomes breeding grounds for the antibiotics in the cattle feed.

R: Dairymen give antibiotics in the feed to the cattle and it becomes breeding grounds for the antibiotic resistant bacteria.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4)

Answer: A

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13. Assertion : Lycaenops is a mammals - like reptile.

Reason : Mammal - like reptiles originated in the Permian period.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4)

Answer: B

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14. A: Blood group analysis shows the human beings are more closely related to apes than to monkeys.

R: The blood groups A and B are found in apes but not in monkeys.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4)

Answer: A



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15. A: Due to bottle neck effect, among the survivors, certain alleles may be over-represented, some may be under-represented and some alleles

may be totally eliminated.

R: The path extinction of a species cannot be reversed due to bottle neck effect.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4)

Answer: B



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16. A: Spotted cuscus and marsupial mole are the examples of marsupial radiation.

R: Both are found in Australian region.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4)

Answer: B



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17. A: Similarities in proteins and genes performing a given function among diverse organisms give clue to common ancestry.

R: All the group of vertebrates arises from the common ancestor with great adaptation capability.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4)

Answer: A

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18. A: Sometimes, some babies have a small tail.

R: This is just a type of mutant variety.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4)

Answer: C

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19. A: Muscles of external ears are fully developed in humans.

R: These muscle helps in moving ear pinna in human.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertion and Reason are false statements, then mark (4)

Answer: D

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20. A: A single large mutation called saltation can produce new species.

R: Mutations are directional.

- A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion. Then mark (1)
- B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2)
- C. If Assertion is true statement but Reason is false, then mark (3)
- D. If both Assertion and Reason are false statements, then mark (4)

Answer: C



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Try Yourself

1. The early atmosphere was

- A. Oxidising
- B. Reducing
- C. Non-reactive
- D. Non-reducing

Answer: B



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2. Which of the following was most likely to have been absent in free form in the primordial atmosphere at the time of origin of life

Or

Miller performed experiment to prove molecular evolution of life. Which molecule was not present in Miller's experiment

- A. Ammonia

B. Methane

C. Oxygen

D. Hydrogen.

Answer: C



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3. All of the following theories were given for the origin of life, except

A. The Big Bang theory

B. Theory of Panspermia

C. Theory of Spontaneous generation

D. Theory of Chemical Evolution.

Answer: A



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4. Life originated in

- A. Air
- B. Water
- C. Sun
- D. Soil

Answer: B



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5. Which of the following was used as an energy source by Miller in his experiment?

- A. UV radiation
- B. Oxygen
- C. Condenser
- D. Electric discharge

Answer: D



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6. The first non-cellular form of life could have originated about _____ years ago.

A. 3 billion years ago

B. 2 million years ago

C. 2 billion years ago

D. 3 million years ago

Answer: C



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7. At what level of grouping of organisms does evolution occur?



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8. If two organisms are more closely related then which of the following is a possibility?

- A. They will share common ancestor in the future.
- B. They share a common ancestor in the distant history
- C. They share a common ancestor in the recent history
- D. They will not at all share any common ancestor

Answer: C



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9. According to Darwin, what is the driving force of evolution?



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10. What was the term given by Darwin for the differences in characteristics?

- A. Natural selection
- B. Fitness
- C. Evolution
- D. Variation.

Answer: D



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11. What is phylogeny?



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12. What do you understand by the principle of superposition?



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13. What evidence supports the hypothesis that whales evolved from land dwelling mammals?

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14. The statement given below is true/false if false, why?

"The match between many flowers and their pollinators is an example of artificial selection"

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15. Large leg muscles built up in an individual, is an example of acquired or inherited characteristic

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16. Fossils are dated by

- A. Amount of calcium residue in them
- B. Their sodium content
- C. Their number in an area.
- D. Amount of radioactive carbon isotope in them

Answer: D



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17. Analogous structures are

- A. Similar in origin
- B. Similar in function
- C. Non-functional
- D. Similar in anatomy

Answer: B



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18. In the post-industrialisation period in England

- A. Melanised moths were more in number than white winged moths
- B. While-winged moths were more in number than melanised moths
- C. Both had an equal number
- D. Both became extinct.

Answer: A



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19. The divergent evolution can be seen in

- A. Analogous structures

- B. Artificial breeding
- C. Drug resistance
- D. Homologous structures.

Answer: D



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20. At Australian marsupials evolved in the

- A. Africa
- B. Galapagos islands
- C. Australian continent
- D. North America

Answer: C



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21. Fitness, according to Darwin, refers ultimately and only to

- A. Physically dominant over others
- B. Ability to defend from others
- C. Strategy of obtaining food
- D. Number of offsprings produced

Answer: D



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22. The idea not related to the Darwinian theory of evolution is

- A. Survival of the fittest
- B. Struggle for existence.
- C. Inheritance of acquired characters
- D. Origin of species by natural selection.

Answer: C



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23. Lamarck gave the example of _____ to explain his theory

A. Giraffes

B. Finches

C. Marsupials

D. Placental mammals.

Answer: A



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24. Genetic drift operates in :

A. Small isolated population

B. Large isolated population

C. Non-reproductive population

D. Slow reproductive population.

Answer: A



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25. Gene pool is :

A. Genotype of an individual in a population

B. Different genes of all individuals of a species found in an area

C. Pool of artificially synthesised genes

D. Genes of a genus.

Answer: B



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26. If nature selects both of the peripheral traits of a character then which kind of natural selection is said to be operating?

- A. Stabilsing
- B. Disruptive
- C. Directional
- D. Rotating

Answer: B



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27. Saltation means

- A. Single step small mutation
- B. Single stem small variation
- C. Single step large mutation
- D. Single step large variation.

Answer: C



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28. Due to continental drift, the South American mammals were overdden by

A. Australian marsuplals

B. Sauropsids

C. Synapsids

D. North American fauna

Answer: D



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29. Ichthyosaurs evolved around

A. 200 mya

B. 350 mya

C. 500 mya

D. 600 mya

Answer: A



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