BIOLOGY

BOOKS - A2Z BIOLOGY (HINGLISH)

EVOLUTION

Exercise Section A Topicwise Questions Topic 1 Origin Of Life Evolution Of Life Forms A Theory

1. Stellar distances are measured in

A. Kilometers

B. Meters

C. Nanometers

D. Light years

Answer: D

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2. Read the following statements and find out the incorrect statement(s).

(a) The universe is almost 20 million years old.

(b) Huge clusters of galaxies comprise the universe.

(c) Considering contain stars and clouds of gas and dust.

(d) Considering the size of earth, universe is indeed a speck.

(e) Big bang theory attempts to explain the origin of universe.

A. a,b and c

B. b and c

C. a and d

D. only a

Answer: C

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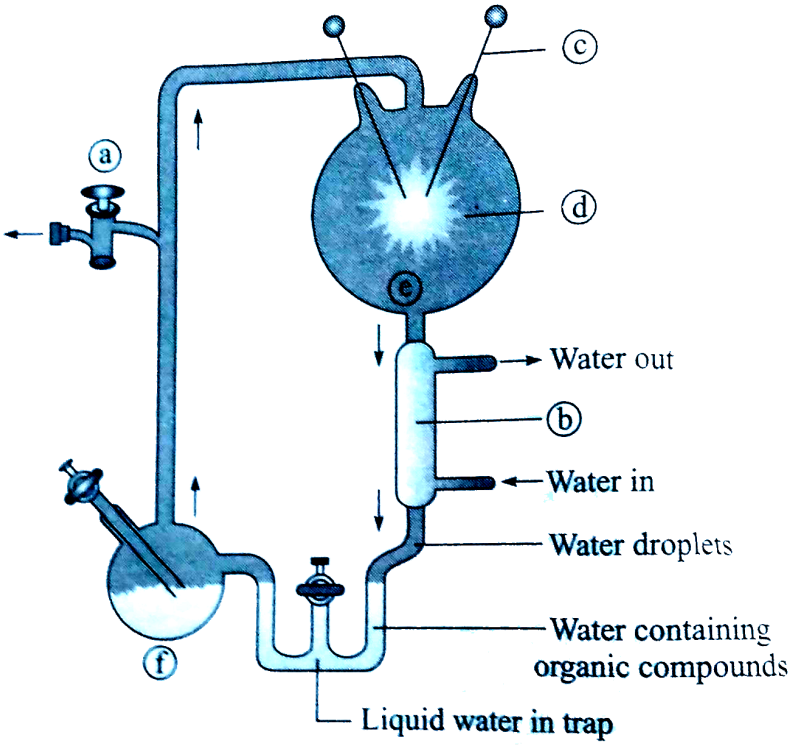
3. Recognise the figure and find out the correct matching.



A. a- condenser, b- to vaccum pump, c - electrode, d- spark discharge, e - boiling water, f - gases

B. b- condenser, a- to vaccum pump, d - electrode, c- spark discharge, f - boiling water, e - gases

C. b- condenser, a - to vaccum pump, c - electrode, d- spark discharge, e - boiling water, f - gases

D. b- condenser, a - to vaccum pump, c - electrode, d- spark discharge, e - boiling water, f - gases

Answer: D

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4. Chemical theory for origin of life was given by

A. Stanley Miller

B. Oparin and Haldane

C. Spallanzani

D. Louis Pasteur

Answer: B

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5. The first life on earth originated from nonliving materials has been explained by

A. Theory of biogenesis

B. Theory of abiogenesis

C. Theory of special creation

D. Theory of extra-terrestrial origin

Answer: B

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6. "Every cell of the body contributes gemmules to the germ cells and so shares in the transmission of inherited characters" This theory is known as

A. Theory of inheritance of acquired characteristic

B. Theory of germplasm

C. Theory of pangenesis

D. Theory of mutations

Answer: C

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7. Organic compounds evolved on earth and required for origin of life were

A. proteins and nucleic acids

B. Urea and amino acids

C. Proteins and amino acids

D. Urea and nucleic acids

Answer: C

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8. Scientists believes that life on earth originated by

A. Spontaneous generation

B. Chemical evolution/Abiogenesis

C. Special creation

D. Extraterrestrial transfer

Answer: B

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9. Match the column I and II, and choose the correct combination from the options given.

	Column I		Column II
(a)	Origin of earth	1.	4500 mya
(b)	Origin of life on earth	2.	4000mya
(c)	Origin of first cellular form of life on earth	3.	3000 mya
(d)	Origin of first non cellular form of life on earth	4.	2000 mya

A. a-1, b-2, c-3, d-4

B. a-2, b-1, c-4, d-3

C. a-1, b-2, c-4, d-3

D. a-2, b-1, c-3, d-4

Answer: C

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10. In early Earth, water and carbon dioxide was produced by the combination of O_2 with

A. Ammonia and methane

B. Organic matter

C. Hydrogen sulphide

D. Sulphates and nitrates

Answer: A

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11. Which of the following amino acids was not found to be synthesised in Miller's experiment ?

A. Alanine

B. Glycine

C. Aspartic acid

D. Glutamic acid

Answer: D

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12. 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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13. Experiment to prove that synthesis of organic compounds formed the basis of origin of life was performed by

A. Oparin

B. Haldane

C. Miller

D. Fox

Answer: C

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14. Theory of abiogenesis or spontaneous generation was finally disapproved by

A. Louis Pasteur

B. A.I. Oparin

C. A.B. Wallace

D. Sydney Fox

Answer: A

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15. Atmosphere of earth just before the origin of life consisted of

A. Water vapours, CH_2, NH_3 and Oxygen

B. CO_2, NH_3 and CH_4

C. CH_4, NH_3, H_2 and water vapours

D. CH_4, O_3, O_2 and water vapours

Answer: C

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

A. Special creation

B. Biogenesis

C. Abiogenesis

D. Organic evolution

Answer: D

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17. Experiment proof that organic compounds are the basis of evolution was given by

A. Oparin

B. Pasteur

C. Miller and Urey

D. Spallanzani

Answer: C

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18. Swan-necked flask experiment was performed by

A. Louis Pasteur

B. Robert Koch

C. Francisco Redi

D. Aristotle

Answer: A

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19. Spark discharge apparatus for testing chemical origin of life was designed by

A. Urey and Miller

B. Jacob and Monad

C. Oparin and Haldane

D. Dixon and Joly

Answer: A

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20. Gaseous mixture used by Miller for synthesis of amino acids through heat and electric discharge include

A. Methane, ammonia, hydrogen and water vapours

B. Methane, ammonia , nitrogen and water vapours

C. Nitrogen, methane, oxygen and water

D. Ammonia, carbon dioxide, nitrogen and water vapours

Answer: A

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21. Approximate age of earth (in million years) is

A. 3600

B. 4500

C. 7200

D. 6000

Answer: B

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22. Most advanced theory of origin of life is that of

A. Catastrophic

B. Haldane and Oparin

C. Cosmozoic

D. Spontaneous

Answer: B

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23. Which is the most important for orign of life ?

A. Oxygen

B. Water

C. Nitrogen

D. Carbon

Answer: B

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24. Theory of spontaneous creation was supported by

A. Van Helmont

B. Redi

C. Spallanzani

D. Pasteur

Answer: A

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25. One of the greates advocates of the theory of special creation was

A. C. Darwin

B. Aristotle

C. Father Saurez

D. Huxley

Answer: C

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26. Which was absent in the atmosphere at the time of origin of life ?

A. NH_3

B. H_2

C. O_2

D. CH_4

Answer: C

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27. Theory of pangenesis was given by

A. Darwin

B. Lamarck

C. Hugo ds Vries

D. Oparin

Answer: A

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28. Life cannot originated from inorganic materials now because of

A. Low atmospheric temperature

B. High degree of pollution

C. High atmospheric oxygen

D. Absence of raw materials

Answer: C

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29. 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 the above

Answer: A

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30. First photosynthetic organisms to appear on earth were

A. Bacteria

B. Green algae

C. Cyanobacteria

D. Bryophytes

Answer: C

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31. Choose the correct sequence during formation of chemicals on early earth

A. Ammonia, Water, Nucleic acid, Protein

B. Ammonia, Proteins, Carbohydrates, Nucleic acid

C. Ammonia, Nucleic acid, Proteins, Carbohydrates

D. Proteins, Carbohydrate, Water, Nucleic acid

Answer: B

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

A. Oparin

B. Haldane

C. Miller

D. Fox

Answer: A

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33. Oparin's theory is based on

A. Artificial synthesis

B. Spontaneous generation

C. God's Creation

D. Panspermia

Answer: A

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34. Which one is considered the first biological catalyst when life originated on earth?

A. RNA

B. DNA

C. Protein

D. Lipid

Answer: A

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Exercise Section A Topicwise Questions Topic 2 Evidences For Evolution

1. Choose the wrong statement.

A. Louis Pasteur demonstrated that life comes only form pre-existing life.

B. L.S. Miller observed that electric discharge in a flask containing CH_4, H_2, NH_3 and water vapours at $800^\circ C$ formed amino acids.

C. Flippers of penguins and dolphins are examples of homology.

D. Analogous structures are the result of convergent evolution.

Answer: C

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2. Biogenetic law/recapitulation theory was proposed by

A. Wallace

B. Lamarck

C. Haeckel

D. Mendel

Answer: C

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3. "Continuity of germplasm" theory was given

A. De Vries

B. Weismann

C. Darwin

D. Lamarck

Answer: B

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4. Birbal Sahni Institute of Palaeobotany is located in

A. Lucknow

B. Delhi

C. Kolkata

D. Kanpur

Answer: A

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5. Presence of gill slits in the embryos of all vertebrates supports the theory of

A. Organic evolution

B. Biogenesis

C. Metamorphosis

D. Recapitulation

Answer: D

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6. Similarities between organisms of different genotypes due to

A. Convergent evolution

B. Divergent evolution

C. Microevolution

D. Macroevolution

Answer: A

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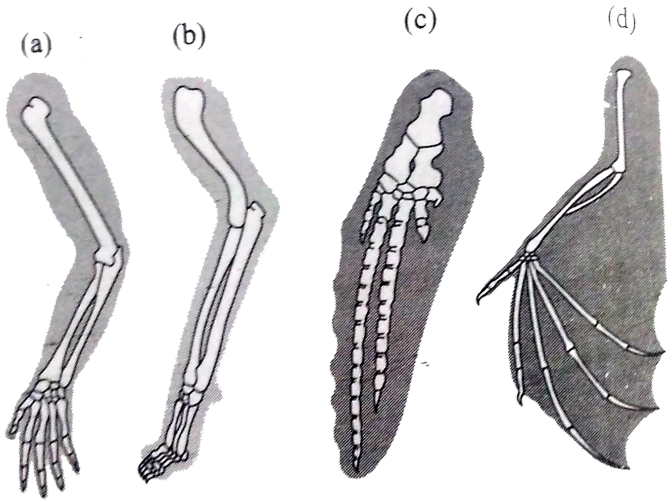
7. Recognise the figure and find out the correct matching.



A. a - man, b - whale, c - cheetah, d - bat

B. a - man, b - whale, c - cheetah, d - bat

C. a - man, d - whale, c - cheetah, b - bat

D. b - man, c - whale, a - cheetah, d - bat

Answer: B

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8. Analogous organs are

A. Different origin but similar functions

B. Common origin and common functions

C. Different origin and different functions

D. Common origin but different functions

Answer: A

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9. Homologous organs are

A. Wings of Pigeon and Butterfly

B. Wings of Pigeon and Housefly

C. Wings of Pigeon and arms of Humans

D. Wings of Bat, Housefly and Butterfly

Answer: C

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10. Resemblance between widely different groups due to a common adaptation is

A. Parallel evolution

B. Divergent evolution

C. Convergent evolution

D. Retrogressive evolution

Answer: C

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11. Homologous organs are

A. Wings of insects and Bat

B. Gills of Fish and lungs of Rabbit

C. Pectoral fins of Fish and fore limbs of Horse

D. Wings of Grasshopper and Crow

Answer: C

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12. Which one correctly describes 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 functions now had and important function in ancestors

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

Answer: A

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13. Convergent evolution is illustrated by

A. Rat and Dog

B. Bacterium and Protozoan

C. Starfish and Cuttle fish

D. Dogfish and Whale

Answer: D

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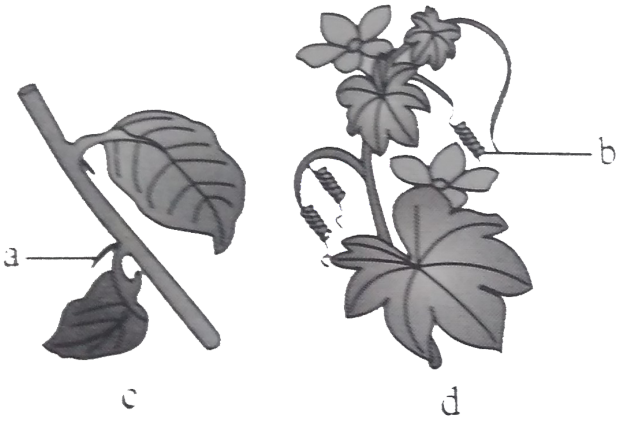
14. Recognise the figure the find out the correct matching.



A. a - tendril, b - thorn, c - Cucurbia, d - Bougainvillea

B. b - tendril, a - thorn, d - Cucurbia, c - Bougainvillea

C. a - tendril, b - thorn, d - Cucurbia, c - Bougainvillea

D. b - tendril, a - thorn, c - Cucurbia, d - Bougainvillea

Answer: B

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15. Which of the following pairs of structures is homologous?

A. Wings of Grasshopper and forelimbs of Flying Squirrel

B. Tentacles of Hydra and arms of Starfish

C. Forelimbs of a Bat and forelegs of a Horse

D. Wings of a birds and wings of a Moth

Answer: C

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16. Which is relatively most accurate method of dating of fossils ?

A. Radioactive carbon method

B. Potassium-Argon method

C. Electron spin-resonance method

D. Uranium-lead method

Answer: C

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17. Closely related varying different in trait expresses

A. Convergent evolution

B. Divergent evolution

C. Parallel evolution

D. None of the above

Answer: B

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18. Potato and Sweet potato have edible parts which are

A. Homologous

B. Analogous

C. Recent introductions

D. Two species of the same genus

Answer: B

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

A. Atavism

B. Paleontology/fossils

C. Vestigial organs

D. Galapagos island fauna

Answer: B

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20. Tachyglossus is a connecting link between

A. Reptiles and mammals

B. Reptiles and birds

C. Amphibians and reptiles

D. Birds and mammals

Answer: A

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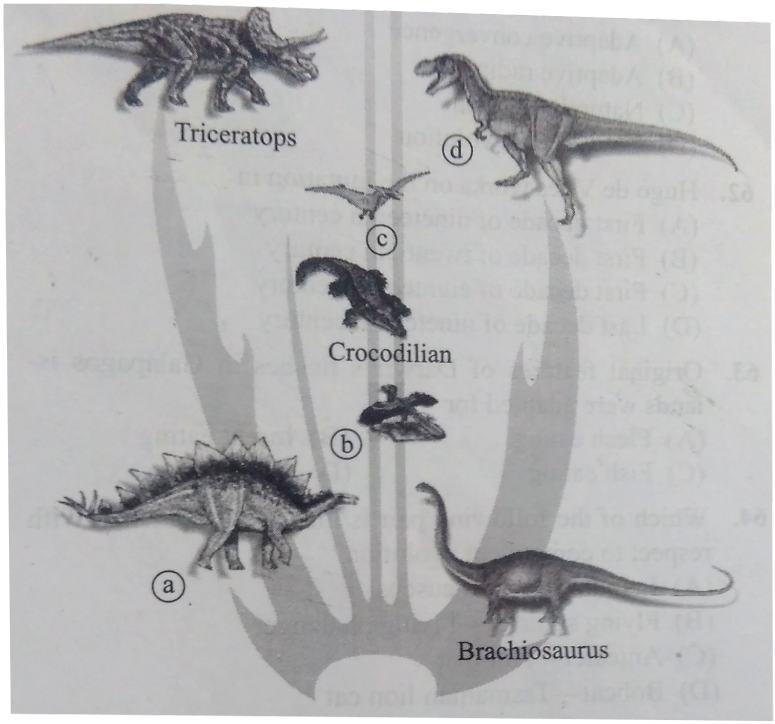
21. Recognise the figure and find out the correct matching.



A. a - Archaeopteryx, b - Tyrannosaurs, c - Stegosaurs, d - Pteranodon

B. d - Archaeopteryx, c - Tyrannosaurs, a - Stegosaurs, b - Pteranodon

C. c - Archaeopteryx, d - Tyrannosaurs, c - Stegosaurs, a - Pteranodon

D. b - Archaeopteryx, d - Tyrannosaurs, a - Stegosaurs, c - Pteranodon

Answer: A

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22. The vestiges of girdles are found in

A. Rattle snake

B. Krait

C. Cobra

D. Python

Answer: D

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23. Evidence for evolution from fossils belong to the

A. Biogeography

B. Embryology

C. Paleontology

D. Anatomy

Answer: C

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24. Example of homologous structures is/are

A. Optic lobes of brain

B. Heart of vertebrates

C. Cerebrum of brain

D. All of the above

Answer: D

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25. Which is incorrect ?

A. Wings of insects and bat are homologous

B. Wings of insects and bats are analogous

C. Wings of bats and birds are homologous

D. Wings of insects and birds are analogous

Answer: A

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26. Forelimbs of humans and wings of birds are

A. Analogous organs

B. Homologous organs

C. Parallel organs

D. Vestigial organs

Answer: B

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Exercise Section A Topicwise Questions Topic 3 Adaptive Radiation Biological Evolution And Mecha

1. The process of evolution of different species in a given geographical area starting from a point and literally radiating to other areas of geography (habitats) is called

A. Adaptive convergence

B. Adaptive radiation

C. Natural selection

D. Convergent evolution

Answer: B

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2. Hugo de Vries works on the mutation in

A. First decade of nineteenth century

B. First decade of twentieth century

C. First decade of eighteenth century

D. Last decade of nineteenth century

Answer: B

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3. Original features of Darwin's finches in Galapagos islands were adapted for

A. Flesh eating

B. Insect eating

C. Fish eating

D. Seed eating

Answer: D

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4. Which of the following pair is incorrectly matched with respect to convergent evolution ?

A. Lemur - Spotted cuscus

B. Flying squirrel - Flying phalanger

C. Anteater - Numbat

D. Bobcat - Tasmanian lion cat

Answer: D

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5. Match the columns I and II, and choose the correct combination from the option given.

	Column I		Column II
a.	Oparin	1.	America
b.	Haldane	2.	France
c.	Miller	3.	Russia
d.	Lamarck	4.	England

(A) a—1, b—2, c—3, d—4
(B) a—2, b—3, c—4, d—1
(C) a—4, b—3, c—1, d—2
(D) a—3, b—4, c—1, d—2

A. a - 1, b - 2, c - 3, d - 4

B. a - 2, b - 3, c - 4, d - 1

C. a - 4, b - 3, c - 1, d - 2

D. a - 3, b - 4, c - 1, d - 2

Answer: D

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6. Theory of inheritance of acquired characters was given by

A. Wallace

B. Lamarck

C. Darwin

D. De Vries

Answer: B

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7. According to Darwin, diversity as found in Australian marsupials is due to

A. Convergent evolution

B. Adaptive radiation

C. Parallel radiation

D. Parallel evolution

Answer: B

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8. Darwin judged the fitness of individual through

A. Ability of defend

B. Strategy for obtaining food

C. Number of offspring

D. Dominance over others

Answer: C

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9. A theory of explain the mechanism of evolutino based on change in the structure of gene was put forth by :

A. De Vries

B. Darwin

C. Lamarck

D. Wallace

Answer: A

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10. Fill in the blanks according to the convergent evolution.

Placental mammals	Australian mammals
Anteater	....a....
.....b.....	Spotted cuscus
Flying squirrel	....c....
....d....	Tasmanian tiger cat

(A) c—flying phalanger, b—lemur, d—bobcat, a—Numbat

(B) b—flying phalanger, a—lemur, c—bobcat, d—Numbat

(C) c—flying phalanger, a—lemur, d—bobcat, b—Numbat

(D) d—flying phalanger, b—lemur, c—bobcat, a—Numbat

A. c - flying phalanger, b - lemur, d - bobcat, a - Numbat

B. b - flying phalanger, a - lemur, c - bobcat, d - Numbat

C. c - flying phalanger, a - lemur, d - bobcat, b - Numbat

D. d - flying phalanger, b - lemur, c - bobcat, a - Numbat

Answer: A

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11. According to Darwin, evolution is

A. Sudden but discontinuous process

B. Slow, gradual, continuous process

C. Slow, sudden and discontinuous process

D. Slow and discontinuous process

Answer: B

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12. An evolutionary pattern characterised by a rapid increase in number and kinds of closely related species is called

A. Divergent evolution

B. Convergent evolution

C. Adaptive radiation

D. Parallel evolution

Answer: C

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13. Naturalist who sailed round the world in ship Beagle was

A. Charles Lyell

B. Charles Darwin

C. Alfred Wallace

D. Lamarck

Answer: B

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14. Darwin's finches occur in

A. Australia

B. Galapagos Islands

C. Siberia

D. India

Answer: B

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15. The idea of natural selection as fundamental process of evolutionary changes was reached

A. By Charles Darwin in 1866

B. Alfred Russel Wallace in 1901

C. Independently by Darwin and Wallace in 1859

D. Independently by Darwin and Wallace in 1900.

Answer: C

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16. Which cannot be explained by Lamarckism ?

A. Loss of tail by humans

B. Elongation by neck in Giraffe

C. Weak progeny of a Nobel laureate

D. None of the above

Answer: C

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17. Darwin in his "Natural Selection Theory" did not believe in any role of which one of the following ?

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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18. Which one of the following sequence was proposed by Darwin and Wallace for organic evolution ?

A. Overproduction, variations, constancy of population size, natural selection

B. Variations, constancy of population size, overproduction, natural selection

C. Overprocution, constancy of populations size, variations, natural selection

D. Variations, natural selection, overproduction, constancy of population size

Answer: C

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19. Darwin's theory state that

A. Characters are acquired through inheritance

B. Species change morphologically with time

C. Nature selects organisms which can adapt

D. Evolution is due to effect to environment

Answer: C

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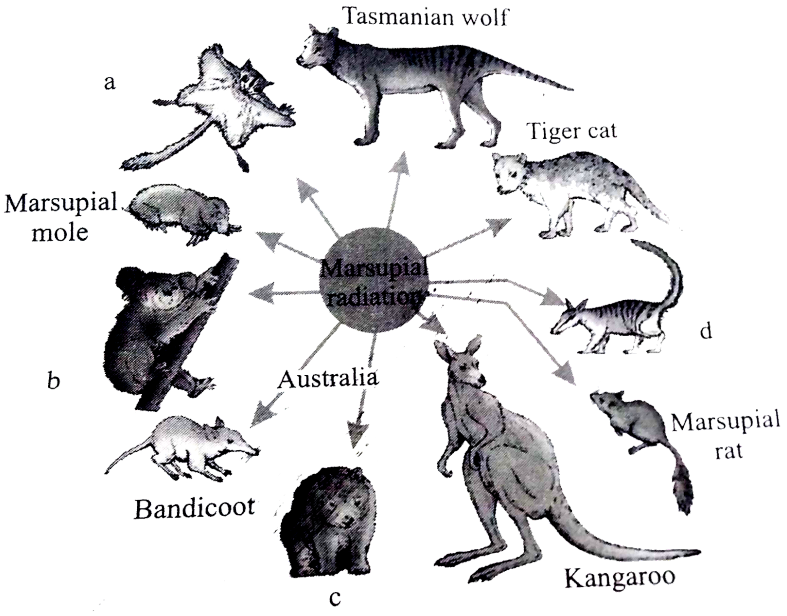
20. Recognise the figure and find out the correct matching.



A. c - wombat, b - koala, a - sugar glider, d - banded anteater

B. a - wombat, c - koala, d - sugar glider, b - banded anteater

C. b - wombat, d - koala, c - sugar glider, a - banded anteater

D. d - wombat, a - koala, b - sugar glider, c - banded anteater

Answer: A

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21. What is true for Lamarck?

A. American botanist who later became zoologist

B. English naturalist who propounded theory of evolution

C. British scientist who gave law of genetics

D. French scientist who gave "Inheritance of Acquired Characters".

Answer: D

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22. Tasmanian wolf is a marsupial while wolf is a placental mammal. This shows :

A. Convergent evolution

B. Divergent evolution

C. Parallelism

D. Inheritance of acquired characters

Answer: A

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23. Dark coloured Peppered Moth is able to survive in industrial areas as compared to light coloured form because of

A. High fecundity

B. Mimicry

C. Natural selection in smoky environment

D. Lethal mutation

Answer: C

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24. Presence of different types of beaks in finches of Galapagos Islands adapted to different feeding habit provides evidence for

A. Interspecific variations

B. Natural selection

C. Intraspecific competition

D. Interspecific competition

Answer: B

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25. Which one provides correct sequence of events in origin of species according to Darwinism ?

1. Natural selection

2. Variations and their inheritance ?

3. Survival of fittest

4. Struggle for existence

A. 1,2,3,4

B. 2,3,1,4

C. 3,4,1,2

D. 4,2,3,1

Answer: D

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26. Darwin travelled in which ship?

A. H.N.S Eagle

B. Titanic

C. H.M.S. Beagle

D. D. Matrica

Answer: C

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27. Darwin was most influenced by

A. Lamarck's theory of acquired characters

B. Weismann's theory of germplasm

C. Wallace's theory of origin of species

D. Essay on Population by Malthus

Answer: D

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28. T.R. Malthus is famous for this book on

A. Population

B. Mathematics

C. Geography

D. Genetics

Answer: A

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29. Weismann cut off tails of mice generation after generation but tails neither disappeared nor shortened showing that :

A. Darwin was correct

B. Tail is an essential organs

C. Mutation theory is wrong

D. Lamarckism was wrong inheritance of acquired characters

Answer: D

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30. Origin of life' was written by

A. Oparin

B. Weismann

C. Lamarck

D. Darwin

Answer: D

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31. Philosophic Zoo 1 ogique' was written by

A. De Vries

B. Lamarck

C. Mendel

D. Spender

Answer: B

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32. Hugo de Vries worked on the plant

A. Garden Pea/Pisum sativum

B. Sweat Pea/Lathyrus odoratus

C. Primula sinensis

D. Evening Primrose/Oenothera lamarckiana

Answer: D

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Exercise Section A Topicwise Questions Topic 4 Hardy Weinberg Principle

1. Choose the wrong statement regarding Hardy - Weinberg principle.

A. Sum total of all the allelic frequencies in a population is 1.

B. Variation due to genetic drift results in changed frequency of genes and alleles in future generations.

C. Natural selection can lead to stabilisation, directional change or disruption.

D. Genetic recombination helps in maintaining Hardy-Weinberg equilibrium

Answer: D

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2. During the growth of any population more individuals acquires peripheral character value at both ends of the distribution curve which lead to the

A. Stabilisation

B. Directional change

C. Disruption

D. Either B or C

Answer: C

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

A. 0.5

B. 0.6

C. 0.7

D. 0.4

Answer: B

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4. Gene pool of a population tends so remain stable is the population is large, without large scale mutations, with-out migration and with

A. Random mating

B. Moderate environmental changes

C. Natural in predators

D. Reduction in predators

Answer: A

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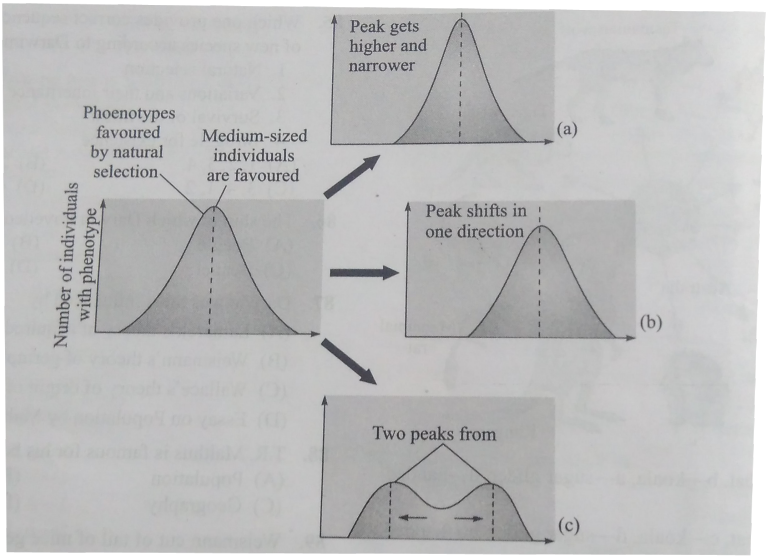
5. Recognise the figure and find out the correct matching.



A. b - directional, a - disruption, c - stabilisation

B. b - directional, c - disruption, a - stabilisation

C. c - directional, b - disruption, a - stabilisation

D. a - directional, c - disruption, b - stabilisation

Answer: B

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6. New species develop due to

A. Isolation and mutation

B. Competition and mutation

C. Isolation and competition

D. Isolation and variation

Answer: A

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

A. Seasonal isolation

B. Reproductive isolation

C. Temporal isolation

D. Behavioural isolation

Answer: B

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

A. Induced mutation

B. Natural selection

C. Reproductive isolation

D. Mimicry

Answer: B

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9. Formation new species from pre-existing ones is

A. Mutation

B. Speciation

C. Isolation

D. Polyploidy

Answer: B

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10. Speciation in geographically separated region is

A. Sibling

B. Geopatric

C. Sympatric

D. Allopatric

Answer: D

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

A. Gene flow

B. Mutation

C. Random mating

D. Sexual selection

Answer: C

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12. In a random mating population in equilibrium, which of the following brings about a change in gene frequency in a non-directional manner?

A. Mutations

B. Random drift

C. Selection

D. Migration

Answer: B

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13. Change of frequency of alleles in a population results in evolution is proposed in :

A. De Vries theory

B. Hardy-Weinberg principle

C. Darwin's theory

D. Lamarck's theory

Answer: B

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14. What is correct formulation of Hardy Weinberg law ?

A. $p^2 + 2pq + q^2 = 1$

B. $p^2 + pq + q^2 = 1$

C. $p^2 + 2pq + q^2 = 0$

D. $p^2 + pq + q^2 = 0$

Answer: A

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15. Hardy-Weinberg equilibrium is known to be affected by gene flow, genetic drift, mutation, genetic recombination and

A. Evolution

B. Limiting factor

C. Over-production

D. Natural selection

Answer: D

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16. Concept of genetic drift was introduced by

A. Sewall Wright

B. Hardy Weinberg

C. Julian Huxley

D. G.G. Simpson

Answer: A

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17. Hardy - Weinberg principle cannot all members

A. Population is large

B. Free interbreeding among all members

C. Frequent mutations occur in populations

D. Population does not interact with other population

Answer: C

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18. Read the statements (i-iv) and choose the correct option.

i. Increase in melanised moths after industrialization

ii. More individuals acquiring mean character value cause disruption

iii. Change in allelic frequency leads to hardy-Weinbery equilibrium

iv. Genetic drift changes allelic frequency in future generations

A. ii is correct

B. i is correct

C. i and iv are correct

D. i and iii are correct

Answer: C

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Exercise Section A Topicwise Questions Topic 5 Evolution Of Organisms

1. Fish with stout and strong fins could move on land and go back to water. This was about

A. 350 mya

B. 320 mya

C. 500 mya

D. 200 mya

Answer: A

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2. In.....a....., a fish caught in.....b....., happened to be a.....c.....d..... Evolved into the first.....e.....

A. a -1891, b - South America, c - Ichthyosaurs, d - lobefins, e - amphibians

B. a -1891, b - South America, c - Icthyophis, d -coelocanth, e - amphibians

C. a - 1891, b - North America, c - coelocanth, d - lobefins, e - amphibians

D. a - 1938, b - South Africa, c - coelocanth, d - lobefins, e - amphibians

Answer: D

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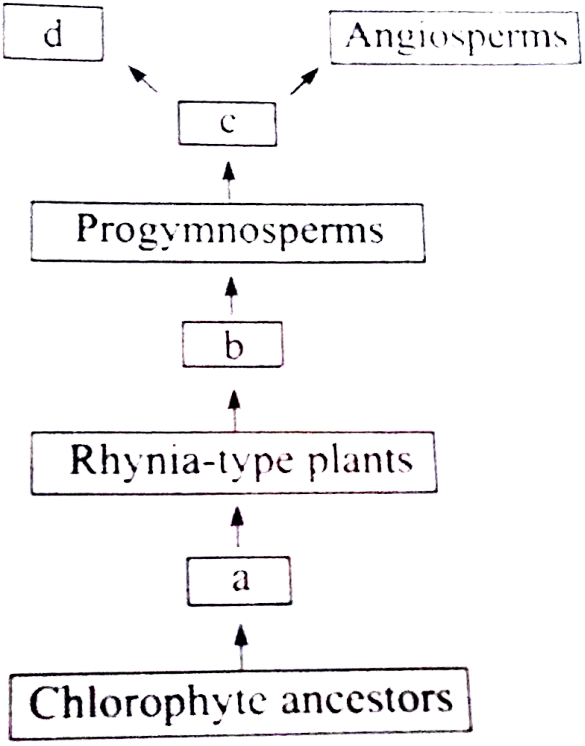
3. Recognise the figure and find out the correct matching



A. a - psilophyton tracheophyte ancestors, c - cycads, d - conifers

B. a - tracheophyte, b - psilophyton, c - seed ferns , d -cycads

C. a - psilophyton, b- tracheophyte ancestors , c - seed ferns, d - cycads

D. a - tracheophyte ancestors, b - psilophyton c - cycads, d - sed ferns

Answer: B

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4. Which was the biggest land dinosaur ?

A. Protoceratops

B. Apatosaurus

C. Tyrannosaurus rex

D. Ichthyosaurus

Answer: C

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5. Match the column I and II, and choose the correct combination from the options given.

	Column I		Column II
a.	Invertebrates evolved	1.	65 mya
b.	Sea weeds and few plants evolved	2.	200 mya
c.	Jaw fishes evolved	3.	320mya
d.	Fish like reptiles evolved	4.	350 mya
e.	Dinosaurs disappeared	5.	500 mya

A. a -3, b-5, c-4, d-1, e-2

B. a-4, b-3, c-5, d-2, e-1

C. a-5, b-4, c-3, d-1, e-2

D. a-5, b-3, c-4, d-2, e-1

Answer: D

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6. Examples of vestigial organs in the human body are :

A. Wisdom tooth, coccyx, nail, eyelid and vermiform appendix

B. Wisdom tooth, coccyx, vermiform appendix, pancrease and elbow joint

C. Wisdom tooth, coccyx, vermiform appendix, nictitating membrane and auricular muscles

D. Coccyx, wisdom tooth, nail, auricular muscles

Answer: C

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7. Dinosaurs disappeared during

A. Jurassic

B. Triassic

C. Cretaceous

D. Permian

Answer: C

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8. A bird with teeth is

A. Kiwi

B. Ostrich/King vulture

C. Dodo

D. Archaeopteryx

Answer: D

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9. Correct order is

A. Paleozoic.....Archeozoic.....Coenozoic

B. Archaeozoic.....Paleozoic.....Proterozoic

C. Paleozoic.....Mesozoic.....Coenozoic

D. Mesozoic.....Archaezoic.....proterozoic

Answer: C

Watch Video Solution

10. Age of mammals and birds is

A. Mesozoic

B. Coenozoic

C. Archaeozoic

D. Palaeozoic

Answer: B

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Exercise Section A Topicwise Questions Topic 6 Origin And Evolution Of Man

1. Homo sapiens arise in

A. Africa

B. Ethiopia and Tanzania

C. South American grasslands

D. Central and East Asia

Answer: A

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2. The extinct human ancestor, who ate only fruits and hunted with stone weapons was

A. Australopithecus

B. Dryopithecus

C. Ramapithecus

D. Homo erectus

Answer: A

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3. The hominid fossils discovered in Java in 1891 revealed a stage in the human evolution, which was called:

A. Homo erectus

B. Dryopithecus

C. Australopithecus

D. Homo habilis

Answer: A

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4. Fossil Man having cranial capacity similar to that of modern man was

A. Australopithecus

B. Java Ape Man

C. Neanderthal Man

D. Peking Man

Answer: C

Watch Video Solution

5. Which one of the following ancestors of man first time showed bipedal movement?

A. Peking Man

B. Australopithecus

C. Java Man

D. Cro-Magnon Man

Answer: B

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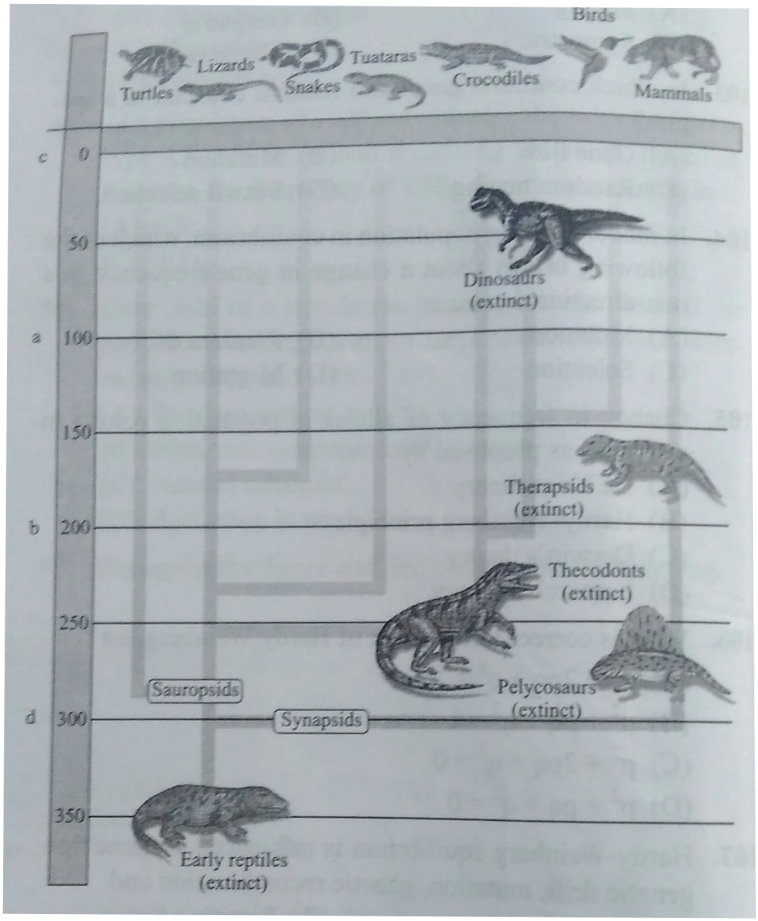
6. Here is given the diagrammatic representation of evolutionary history of vertebrates through geological periods. Identify the geological periods (a, b, c and d) and select the correct option.



A. a - Carboniferous, b - Triassic, c - Cretaceous, d - Quaternary

B. a - Jurassic , b - Permian, c - Tertiary, d - Carboniferous

C. a - Permian, b - Jurassic, c - Quaternary, d - Tertiary

D. a - Cretaceous, b - Quanternary c - Carboniferous, d - Jurassic

Answer: A

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7. Which of the following fossil men was expert in making tools, weapons and paintings ?

A. Cro-Magnon Man

B. Peking Man

C. Java Man

D. Neanderthal Man

Answer: A

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8. Maximum resemblance of to-day's man is

A. Australopithecus

B. Cro -Magnon Man

C. Java Man

D. Neanderthal Man

Answer: D

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9. Average cranial capacity of Neanderthal man was:

A. 1400 cc

B. 900 cc

C. 1450 cc

D. 650-800 cc

Answer: A

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10. Which one of the following is the most primitive ancestor of man?

A. Ramapithecus

B. Australopithecus

C. Homo habilis

D. Homo neanderthalensis

Answer: A

Watch Video Solution

11. Cranial capacity of humans is

A. 1400 cc

B. 1450cc

C. 1650 cc

D. 900 cc

Answer: B

Watch Video Solution

12. Which of the following primitive man built up dwelling huts and buried the bodies after death?

A. Java Ape Man

B. Cro -Magnon Man

C. Peking Man

D. Neanderthal Man

Answer: D

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13. The continent where maximum fossils of prehistoric man have been found is

A. Asia

B. Africa

C. Europe

D. America

Answer: B

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14. Which one is connected with human evolution ?

A. Binocular vision

B. Flatnails

C. Loss to tail

D. Shortening of jaws

Answer: D

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15. Correct sequence of stages in evolution of modern Man/Homo sapiens sapiens is

A. Australopithecus, Neanderthal Man, Cro-Magnon Man, Homo erectus , Modern Man

B. Australopithecus, Homo - erectus ,Neanderthal Man, Cro-Magnon Man, Modern Man

C. Neanderthal Man, Australopithecus , Cro-Magnon Man, Homo erectus, Modern Man

D. Homo erectus, Australopithecus, Neanderthal Man, Cro-Magnon Man, Modern Man

Answer: B

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16. Which is the correct order of increasing geological time scale for a hypothetical vertebrate evolution?

A. Cenozoic, mesozoic, palaeozoic, precambrian

B. Cenozoic, palaeozoic, mesozoic, precambrian

C. Precambrian, cenozoic, palaeozoic, mesozoic

D. Precambrain, palaeozoic, mesozoic, cenozoic

Answer: A

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17. Cranial capacity of Homo erectus was

A. 1650 cc

B. 1400 cc

C. 900

D. 650 cc

Answer: C

Watch Video Solution

18. The scientific name of Java man is:

A. Homo habilis

B. Homo sapiens neanderthalensis

C. Homo erectus erectus

D. Australopithecus boisei

Answer: C

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Section B Assertion Reasoning Questions

1. Assertion: Life appeared 500 million years after the formation of earth.

Reason : There was no atmpshere on early earth.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false

Answer: B

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2. Assertion : Whales, bats, cheetah and human share similarities in the pattern of bones of forelimb.

Reason : All of them have humerus, radius, ulna, carpals, metacarpals and phalanges.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false

Answer: A

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3. Assertion : Evolution is not a directed process in the sense of determinism.

Reason : Evolution is a stochastic process based on chance events in nature and chance mutation in the organism.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false

Answer: A

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4. Assertion : The essence of Darwinian theory about evolution is natural selection.

Reason : Branching descent and natural selection are the two key concepts of Darwinian theory.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false

Answer: B

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5. Assertion : The total genes and their alleles in a populations are called gene pool.

Reason : The gene pool remains a constant in a population.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false

Answer: B

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6. Asserton : According to Hardy-Weinberg principle, allele frequencies in a population are stable and is constant from generation to generations.

Reason : Disturbance in genetic equilibrium or Hardy-Weinberg equilibrium would be interpreted as resulting in evolution

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false

Answer: B

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7. Assertion : When migration of a section of population to another place occurs it is called gene flow.

Reason : If gene flow happens multiple times, it is called gene migration.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false

Answer: D

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8. Assertion : The amphibians evolved into reptiles.

Reason : Reptiles lay thick shelled eggs which do not dry up in sun like those of amphibians.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false

Answer: C

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9. Assertion : About 350 million years or so, reptiles of different shapes and size dominated to earth.

Reason : some of land reptiles went back into water to evolve into fish like reptiles probable 200 mya (e.g. Icthyophis).

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false

Answer: D

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10. Assertion : The biggest dinosaur, Tryanosaurs rex was about 20 meters in height and had huge fearsome dagger like teeth.

Reason : Dinaosaurs suddenly disappeared from earth, either due to climatic changes or most of them evolved into reptiles.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false

Answer: D

Watch Video Solution

11. Assertion : The first mammals were like shrews.

Reason : When reptiles came down mammals took over this earth.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false

Answer: B

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12. Assertion : Some mammals like, Whales, dolphins, seals and sea cows live wholly in water.

Reason : The most successful story is the evolution of man with language skills and self - consciousness.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false

Answer: B

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13. Assertion : Due to continental drift, when South America joined North America, North American animals were overridden by South American

fauna.

Reason : Due to the same continental drift, placental mammals of Australia survival because of lack of competition from any other mammal.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false

Answer: D

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14. Assertion : Ramapithecus was more man like while Dryopithecus was more ape-like.

Reason : These primates were hairy and walked like gorillas and chimpanzees.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false

Answer: B

Watch Video Solution

15. Assertion : Homo habilis is called the first human like being the hominid.

Reason : Homo habilis probably ate meat.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false

Answer: C

Watch Video Solution

16. Assertion : Australopithecus hunted with stone weapons but essentially ate fruit.

Reason : Homo erectus probably did not eat meat.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false

Answer: C

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17. Assertion : Neanderthal man lived in East African grass-lands.

Reason : During ice age between 1,00,000-40,00 years ago modern Homo sapiens arose.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false

Answer: D

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18. Assertion : The skull of baby chimpanzee is more like adult human skull than adult chimpanzee skull.

Reason : Mammals are viviparous protected their unborn young inside the mother's body.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false

Answer: B

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Section D Chapter End Test

1. Name the law that states 'Embryonic Development of an animal repeats the embryonic stages of ancestors`?

A. Biogenetic Law

B. Anaximander's Law

C. Flokin's Law

D. Law of Segregation

Answer: A

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2. Major defect of Darwinism was

A. Non - description survival of insect

B. Non - description of inheritance of fittest

C. Non - description of overproduction of young ones

D. Non - description of reason for variations

Answer: D

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

A. lack of pigment in cave dwellers

B. Absence of limbs in snakes

C. Presence of webbed toes in aquatic birds

D. Melanisation of Peppered Moth in industrial areas

Answer: D

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4. The earliest fossil form in the phylogeny of horse is

A. Merychippus

B. Mesohippus

C. Eohippus

D. Equus

Answer: C

Watch Video Solution

5. Light coloured Peppered Moth/Biston betularia gets changed to its darker carbonaria variety due to

A. Translocation of block of genes in response to heavy carbons

B. Delection of gene segment due to industrial pollution

C. Mutation of single Mendelian gene for survival in smoke laden industrial environmental

D. Industrial carbon deposited on wings

Answer: C

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6. Neanderthal man lived in

A. Desert

B. Deep forest

C. Mountains

D. Caves

Answer: D

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7. Average cranial capacity of Neanderthal man was:

A. 390-510 cc

B. 675 - 719 cc

C. 1015 - 1075 cc

D. 882-897 cc

Answer: A

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8. The modern man differs from the apes in:

A. Protruding eyes

B. Sparse body hair

C. Arm shorter than legs

D. Wearing of clothes

Answer: C

Watch Video Solution

9. Rule of embryonic development was given by

A. Van Bear

B. Haeckel

C. Mendel

D. Darwin

Answer: A

Watch Video Solution

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

A. Cranial capacity

B. Binocular vision

C. Chromosomes

D. Dental formula

Answer: C

Watch Video Solution

11. Java Ape Man was discovered by

A. Dubois

B. Leakey

C. Cuvier

D. Black

Answer: A

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12. Allopatric speciation is caused by

A. Termporal isolation

B. Adaptive radiation

C. Geographical isolation

D. Reproductive isolation

Answer: C

Watch Video Solution

13. Sympatric speciation is caused by

A. Genetic isolation

B. Interbreeding

C. Geographical isolation

D. Reproductive isolation

Answer: D

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14. In Homo habilis, 'habilis' refers to

A. Wandering man

B. Modern man

C. Ancient man

D. Tool maker

Answer: D

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15. The seuqence is evolution of horse was

A. Equus, Eohippus, Mesohippus, Merychippus

B. Eohippus, Mesohippus, Merychippus, Equus

C. Merychippus, Eohippus, Merychippus, Equus

D. Merychippus, Eohippus, Equus, Mesohippus

Answer: B

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16. Coal has been mainly formed by

A. Bryophytes

B. Pteridophytes/pteridosperms

C. Angiosperms

D. Algae

Answer: B

Watch Video Solution

17. Half life of $.^{14}C$ is

A. 50 years

B. 500 years

C. 5000 years

D. 5×10^4 years

Answer: C

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18. Different species occurring in different geographical areas are known as

A. Allopatric

B. Sympatric

C. Sibling species

D. Derms

Answer: A

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

A. Genetic drift

B. Adaptation

C. Mutation

D. Natural selection

Answer: B

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21. Which of the following is not correctly paired ?

A. Mesozoic - Age of mammals

B. Study of fossils - Paleontology

C. Mutation theory - Hugo de Vries

D. Origin of Species - Charles Darwin

Answer: A

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22. Random genetic drift in a population probably result from

A. Highly genetically variable individuals

B. Interbreeding within small population

C. Constant low mutation rate

D. Large population size

Answer: B

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23. which of the following has been basic to origin of life

A. Carbohydrates

B. Proteins

C. Nucleic acids

D. Nucleoproteins

Answer: C

Watch Video Solution

24. Flippers of seal are modified

A. Hind limbs

B. Fore limbs

C. Fins

D. Gills

Answer: B

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25. The classical example of adaptive radiation during formation of new species is

A. Marsupials of Australia

B. Darwin's finches

C. Giant Tortoise

D. all of the above

Answer: D

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26. Initiating force of evolution is :

A. Variations

B. Natural selection

C. Competition

D. Adaptation

Answer: A

Watch Video Solution

27. Cro-Magnon man was

A. Sanguivorous

B. Frugivorous

C. Carnivorous

D. Herbivorous

Answer: C

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28. 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. Fossils remains

D. DNA of both autosomes and sex chromosomes

Answer: B

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29. Coacervates belongs to the category of :

A. Protozoans

B. Molecular aggregates

C. Molecular aggregates surrounded by lipid membrane

D. Cyanobacteria

Answer: C

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30. Which experiment suggests that simplest living organism could not have originated spontaneously from non-living matter ?

A. Microbes did not appear in stored meat.

B. Microbes appeared from unsterilised organic matter

C. Larvae could appear in decaying organic matter

D. Meat was spoiled when heated and kept in sealed vessel

Answer: D

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31. Name given to fossil homind of shivalik hills in India is

A. Ramapithecus

B. Australopithecus

C. Pithecanthropus

D. Both A and B

Answer: A

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32. 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 Asia than in Africa

B. Greater variation in Africa than in Asia

C. Similar variation if Africa and Asia

D. Variation only in Asia and no variation in Africa

Answer: C

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33. Which one support Darwin's concept of natural selection?

A. Development of transgenic animals

B. Production of Dolly sheep by cloning

C. Prevalence of pesticide resistant insects

D. Development of organs from stem cells for organ transplantation

Answer: C

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34. Survival of Fittest' was used by

A. Charles Darwin

B. Spencer

C. Jean Baptiste Lamarck

D. Hugo de Vries

Answer: B

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35. Most of the fossils occur in rocks

A. Sedimentary

B. Metamorphic

C. Igneous

D. None of these

Answer: A

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36. Coacervates are

A. Protein aggregates

B. Protein and lipid aggregates

C. Chemical aggregates

D. Protobionts with polysaccharides, proteins and water

Answer: D

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37. Hot dilute soup was given by

A. Haldane

B. Urey

C. Oparin

D. None of the above

Answer: A

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38. Which is incorrect about protobionts in abiogenic origin of life?

A. They were partially isolated from 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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39. Higher frequency of melanie British moths and DDT resistance in mosquitoes are cited as examples for :

A. Point mutation

B. Genetic drift

C. Natural selection

D. Survival of the fittest

Answer: C

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40. Unit of evolution is

A. Population

B. Species

C. Individual

D. Subspecies

Answer: A

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

A. Triassic

B. Jurassic

C. Cretaceous

D. Permian

Answer: C

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42. In evolution of horse, two most important anatomical and morphological changes brought about are

A. Limbs and tail

B. Limbs and teeth

C. Teeth and tail

D. Limbs and height

Answer: B

Watch Video Solution

43. Origin of life occurred in

A. Precambrain era

B. Coenozoic era

C. Palaeozoic era

D. Mesozoic era

Answer: A

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44. Cro-Magnon Man is

A. Homo sapiens fossils

B. Homo sapiens

C. Homo habilis

D. Homo erectus

Answer: A

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45. Age of fishes is

A. Silurian

B. Ordovician

C. Devonian

D. Permian

Answer: C

Watch Video Solution

46. Besides radio dating which method can be used to find out whether a fossil is of oder era ?

A. Lava deposits

B. Igneous rocks

C. Metamorphic rocks

D. Sedimentary strata

Answer: D

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47. Which one is considered the first biological catalyst when life originated on earth ?

A. RNA

B. DNA

C. Protein

D. Lipid

Answer: A

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48. A baby has been born with a small tail. It is case exhibiting :

A. Radiation

B. Atavism

C. Mutation

D. Crossing over

Answer: B

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49. Mammals like reptiles evolved during

A. Jurassic

B. Triassic

C. Permian

D. Tertiary

Answer: C

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50. Coenozoic era is age of

A. Fishes

B. Amphibians

C. Mammals

D. Reptiles

Answer: C

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Others

1. Age of fossils was previously determined by radioactive elements. More precise recent method which has led to revision to evolutionary periods is

A. Study of carbohydrate and protein in fossils

B. Study of conditions of fossilisation

C. Electron spin resonance and fossils DNA

D. Presence of carbohydrate and protein in rocks

Answer: C

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2. Fossils are dated by :

A. Amount of calciums

B. Radioactive carbon content

C. Association with mammals

D. Stratigraphic age

Answer: B

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3. During development mammalian heart is initially two chambered, then three chambered and finally four chambered. It is explained by

A. Biogenetic law

B. Hardy - Weinberg law

C. Mendelism

D. Lamarckism

Answer: A

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

A. Mutualism

B. Predation on one another

C. Interspecific competition

D. Intraspecific competition

Answer: D

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5. Select the correct statement.

A. Darminian variations are small and directionless

B. Mutations are random and directional

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

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

Answer: C

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6. Which one is not vestigial in humans?

A. Third molar

B. Coccyx

C. Segmental abdominal muscles

D. Finger nails

Answer: D

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7. Among human ancestors, brain size was more than 100 cc in

A. Homo erectus

B. Home habilis

C. Homo neanderthalensis

D. Ramapithecus

Answer: C

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8. The first organisms were

A. Chemoautotrophs

B. Chemoheterotrophs

C. Autrotrophs

D. Eukeryotes

Answer: B

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9. The concept of chemical evolution is based on :

A. Effect of solar radiations on chemicals

B. Interaction of waterm air and clay under intense heat

C. Combination of chemicals under hot moist environment conditions

D. Crystallisation of chemicals

Answer: C

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10. Finches of Galapogos provide evidence for

A. Retrogressive evolution

B. Special creation

C. Biogeographical evolution

D. Evolution due to mutation

Answer: C

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11. Two species of different geneology show resemblance due to similar adaptation, the phenomenon is

A. Convergent evolution

B. Divergent evolution

C. Micro-evolution

D. Co-evolution

Answer: A

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12. Adaptive radiation is

A. Evolution of different species from a common ancestor

B. Adaptation due to geographical isolation

C. Migration of members of a species of different geographical areas

D. Power of adaptation of an individual to a variety of environments

Answer: A

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

A. Homoiothermy

B. Seasonal migration

C. Thick subcutaneous fat

D. Convergent evolution

Answer: D

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14. Match the pair of items with the category of organs.

A. Nephridia of Earthwarm and Malpighian tubules of Cockroach - Excretory organs

B. Wings of Honey Bee and Crow - Homologous organs

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

D. Thorns of Bougainvillea and tendrils of Cucurbita - Analogous organs

Answer: A

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15. Highest cranial capacity is/was present in:

A. Peking Man

B. Java Man

C. Modern Man

D. Handy Man

Answer: C

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16. Which of the following was formed in S.Miller's experiment?

A. Microspheres

B. Nucleic acids

C. Amino acids

D. Lipids

Answer: C

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17. Tendrils of Cucurbita and thorns of Bougainvillea are

A. Homologous organs

B. Analogous organs

C. Vestigeal organs

D. Atavistic divergence

Answer: A

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18. Which one of the following is closest relative of Man?

A. Sinanthropus/Chimpanzee

B. Orangutan

C. Gorilla

D. Gibbon

Answer: A

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19. Which one of the following groups are not analogous organs

A. Wings of birds and wings of butterfly

B. Eye of Octopus and eye of mammals

C. Flippers of penguins and flippers of Dolphin

D. Thorns of Bougainvillea and tendrils of Cucurbita -

Answer: D

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20. Origin of first toothed birds and gymnoperms took place during

A. Cretaceous

B. Jurassic

C. Triassic

D. Permian

Answer: B

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21. A living connective link which provides evidence for organic evolution

A. Sphenodon between reptiles and birds

B. Archaeopteryx between reptiles and birds

C. Lung fishes between pisces and reptiles

D. Duck-billed Platypus between reptiles and mammals

Answer: D

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22. Which is incorrect ?

A. J.B.S. Haldane - Law of continuity of germplasm

B. Louis Pasteur - Germ theory of disease and immunology

C. De Vries - Mutation theory

D. Lemaitre - Big bang theory

Answer: A

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23. Darwin's finches show

A. Adaptive radiation

B. Parallel evolution

C. Homology

D. Artificial selection

Answer: A

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24. Given below are four statements (a-d) with one or two blanks. Select the option which fills up the blanks in two statements.

(a) Wings of butterfly and birds look alike and are the result of ..... (i).....evolution

(b) Miller showed that CH_4, H_2, NH_3 and .....(i).....when exposed to electric discharge in flask resulted in the formation of .....(ii)..... Evidence of evolution.

(c) Vermiform appendix is a .....(i)..... Organ and .....(ii).....

(d) According to Darwin evolution look place due to.....(i).....and .....(ii) of the fittest.

A. d-(i) small variations, (ii) survival, a-(i) convergent

B. a-(i) convergent, b-(i) oxygen, (ii) nucleotides

C. b-(i) water vapours (ii) amino acids, c-(i) rudimentary (ii) anatomical

D. c-(i) vestigial (ii) anatomical, d-(i) mutations (ii) multiplication.

Answer: A

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25. Single step large mutation leading to speciation is also called

A. Founder effect

B. Adaptive radiation

C. Saltation

D. Natural selection

Answer: C

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26. Occurrence of non-beneficial allels in heterozygous genotype is

A. Genetic load

B. Genetic drift

C. Gene flow

D. Selection

Answer: A

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27. Tendrils in plants are an example of

A. Adaptive radiation

B. Coevolution

C. Convergent evolution

D. Divergent evolution

Answer: C

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28. The most apparent change during the evolutionary history of Homo-sapients is traced in

A. Shortening of jaws

B. Remarkable increase in brain size

C. Loss of body hair

D. Walking upright

Answer: B

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29. Haeckel's recapitulation theory/biogeneitc law states.

A. Ontogeny repeats phylogeny

B. High rate of reproduction

C. Alternation of generations

D. Inheritance of acquired characters

Answer: A

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30. Evolution of differrnt species from a point spreading to other area is

A. Adaptive radiation

B. Natural selection

C. Migration

D. Divergent evolution

Answer: A

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31. Concept of mutation was put forth by

A. Charles Darwin who found a wide variety of organism during sea voyage

B. Hugo de Vries who worked on Evening Primrose

C. Gregor Mendel who worked on Pisum sativum

D. Hardy Weinberg who worked on allel frequencies in population

Answer: B

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32. An evolutionary pattern characterised by increase in number and kind of closely related species is

A. Convergent evolution

B. Parallel evolution

C. Adaptive radiation

D. Divergent evolution

Answer: C

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

A. Homo habilis

B. Ramapithecus

C. Neanderthal Man

D. Cro-Magnon Man

Answer: C

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34. Which among the following is correct?

	Convergent Evolution	Divergent Evolution
(A)	Eyes of *Octopus* and Mammals	Bones of vertebrate fore-limbs
(B)	Bones of vertebrate Fore-limbs	Wings of Butterfly and birds
(C)	*Bougainvillea* thorns and *Cucurbita* tendrils	Eyes of *Octopus* and Mammals
(D)	*Bougainvillea* thorns and *Cucurbita* tendrils	Wings of butterfly and Birds

A. Convergent Evolution — Eyes of Octopus and Mammals; Divergent Evolution — Bones of vertebrate fore-limbs

B. Convergent Evolution — Bones of vertebrate fore-limbs; Divergent Evolution — Wings of Butterfly and birds

C. Convergent Evolution — Bougainvillea thorns and Curcubita tendrils; Divergent Evolution — Eyes of Octopus and M

D. Convergent Evolution — Bougainvillea thorns and Curcubita tendrils; Divergent Evolution — Wings of butterfly and

Answer: A

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35. The extinct human ancestor, who ate only fruits and hunted with stone weapons was

A. Australopithecus

B. Dryopithecus

C. Ramapithecus

D. Homo habilis

Answer: A

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36. Flowering plants seem to have originated from

A. Chlorophyte ancestors

B. Tracheophyte ancestors

C. Rhynia type plants

D. Psilophytes

Answer: D

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

A. Competition within closely related species

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

C. Intraspecific competition

D. Interspecific competition

Answer: D

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38. The tendency of population to remain in genetic equilibriµrn may be disturbed by

A. Lack of mutations

B. Lack of random mating

C. Random mating

D. Lack of migration

Answer: B

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

A. Random mating

B. Genetic load

C. Genetic flow

D. Genetic drift

Answer: D

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40. The process by which organisms with different evolutionary history evolve similar phenotypic adaptations in response to a common environmental challenge is called :

A. Non-random evolution

B. Adaptive radiation

C. Natural selection

D. Convergent evolution

Answer: D

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

A. Analogous organs that have evolved due to convergent evolution

B. Analogous organs that have evolved due to divergent evolution

C. Homologous organs that have evolved due to convergent evolution

D. Homologous organs that have evolved due to divergent evolution

Answer: A

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42. Which one of the following are analogous structures?

A. Flippers of Dolphin and Legs of Horse

B. Wings of Bat and Wings of Pigeon

C. Gills of Prawn and Lungs of Man

D. Thorns of Bougainvillea and Tendrils of Curcubita

Answer: C

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43. Forelmbs of cat, lizard used in walking, forelimbs of whale used in swimming and forelimbs of bats used in flying are an example of

A. Convergent evolution

B. Analogous organs

C. Adaptive radiation

D. Homologous organs

Answer: D

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44. Struggle for existence and survival of fittest are related to :

A. Lamarckism

B. Mendelism

C. Darwinism

D. Neo Lamarckism

Answer: C

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45. The biogenetic law was proposed by :

A. Von Bear

B. Haeckel

C. Swammerdam

D. de Vries

Answer: B

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46. Industrial melanism is an example of

A. Natural selection

B. Mutation

C. Neo Lamarckism

D. Neo Darwinism

Answer: A

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

A. Analogous structures and represent convergent evolution

B. Phylogenetic structures and represent divergent evolution

C. Homologous structures and represent convergent evolution

D. Homologous structures and represent divergent evolution

Answer: A

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48. Which of the following characteristics is mainly responsible for diversification of insects of land

A. Exoskeleton

B. Eyes

C. Segmentation

D. Bilateral symmetry

Answer: A

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49. Which of the following had the smallest brain capacity

A. Homo neanderthalensis

B. Homo habilis

C. Homo erectus

D. Homo sapiens

Answer: B

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50. Which of the following best explains the origin of life on earth ?

A. Formation of diverse organic molecules from inorganic constituents

B. Unit of life called spores were transferred to different planets including earth

C. Organic matter was present in the atmosphere

D. Life came out od decaying and rotting matter.

Answer: A

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51. Saltation is

A. Minor heritable variation

B. Directional random mutation

C. Single step large mutation

D. Small directional variation

Answer: C

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52. Mechanism of organic evolution proposed by Hugo de Vries is based upon

A. Oenothera lamarckiana

B. Pisum sativum

C. Drosophila

D. Lathyrus

Answer: A

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53. Analogous structures are a result of

A. Shared ancestry

B. Stabilizing selection

C. Divergent evolution

D. Convergent evolution

Answer: D

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54. Following are the two statements regarding the origin of life :

A. The earliest organisms that appeared on the earth were non-green and presumably anaerobes.

B. The first autotrophic organisms were the chemoautotrophs that never relesed oxygen.

Of the above statements which one of the following options is correct ?

A. Both (a) and (b) are correct.

B. Both (a) and (b) are false

C. (a) is correct but (b) is false.

D. (b) is correct but (a) is false.

Answer: A

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

A. pq

B. q^2

C. p^2

D. 2pq

Answer: D

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

A. Ramapithecus $\rightarrow$ Homo habilis $\rightarrow$ Australopithecus $\rightarrow$ Homo erectus

B. Australopithecus $\rightarrow$ Homo habilis $\rightarrow$ Ramapithecus $\rightarrow$ Homo erectus

C. Australopithecus $\rightarrow$ Ramapithecus $\rightarrow$ Homo habilis $\rightarrow$ Homo erectus

D. Ramapithecus $\rightarrow$ Australopithecus $\rightarrow$ Homo habilis $\rightarrow$ Homo erectus

Answer: D

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57. which 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. II, III, I, IV

B. II, III, IV, I

C. I, II, III, IV

D. I, III, II, IV

Answer: A

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58. Artificial selection to obtain cows yielding higher milk output represents

A. Dierctional as it pushes the mean of the character in one direction

B. Disruptive as it splits the populations into two, one yielding higher output and the other lower output.

C. Stabilizing followed by disruptive as it stabilizes the population to produce higher yielding cows

D. Stabilizing selection as it stabilizes this character in the population

Answer: A

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59. Which among these is correct combination of aquatic mammals

A. Dolphins , Seals, Trygon

B. Whales, Dolphins, Seals

C. Trygon, Whales, Seals

D. Seals, Dolphins, Sharks

Answer: B

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60. The term for similarity in organ structure seen in great diversity is

Or

The similarity of bone structure in the forelimbs of many vertebrates is an example on

A. Homology

B. Analogy

C. Convergent evolution

D. Adaptive radiation

Answer: A

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61. Among the following sets of examples for divergent evolution, select the incorrect option

A. Forelimbs of man, bat and cheetah

B. Heart of bat, man and cheetah

C. Brain of bat, man and cheetah

D. Eye of octopus, bat and man

Answer: D

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62. The cranial capacity was largest among the

A. Peking man

B. African man

C. Java Ape man

D. Neanderthal man

Answer: D

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63. A baby has been born with a small tail. It is case exhibiting :

A. retogressive evolution

B. mutation

C. atavism

D. metamophosis

Answer: C

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64. Primary source of allelic variation is

A. independent assortment

B. recombination

C. mutation

D. polyploidy

Answer: C

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65. "Homo sapiens" implies

A. human race

B. human beings

C. modern man

D. non of these

Answer: A

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66. Wings of pigeon, mosquito and bat show

A. divergent evolution

B. atavism

C. convergent evolution

D. all of the above

Answer: A

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67. The study of homologous structures in mature organism provides evidence for the evolutionary relationships among certain groups of organisms. Which field of study includes this evidence of evolution?

A. Comparative cytology

B. Biochemistry

C. Geology

D. Comparative anatomy

Answer: D

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68. Darwin's finches were a good example of

A. Convergent evolution

B. adaptive radiation

C. mutation

D. none of the above

Answer: B

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69. Which of the following cannot be explained by Lamarckism

A. Absence of legs in snakes

B. Long neck of giraffe

C. Degenration of visual apparatus in cave dwellers

D. Dull progeny of noble laureate

Answer: D

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70. Thorn of Bougainvillea and tendril of Cucurbita are examples of :

A. analogous organs

B. homologous organs

C. vestigial organs

D. retrogressive evolution

Answer: B

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71. Forelmbs of cat, lizard used in walking, forelimbs 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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72. A population is in Hardy-Weinberg equilibrium for a gene with only two alleles. If the gene frequency of an allel A is 0.7, the genotype frequency of Aa is

A. 0.21

B. 0.42

C. 0.36

D. 0.7

Answer: A

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73. Which one of the following is reptilian ancestor of birds ?

A. Hesperornis

B. Ichthyorins

C. Archaeopteryx

D. Lycaenops

Answer: C

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74. According to Hardy-Weinberg principle, allele and genotype frequencies in a population will remain constant from generation to generation in the absence of other evolutionary influences. It makes several assumption which were given below

i. Random Mating

ii. Sexual Reproduction

iii. Non-overlapping Generations

iv. Occurrence of Natural Selection

v. Small size of population

Identify two assumptions which do not meet for a population of reach Hardy-Weinberg Equilibrium ?

A. iv and v

B. ii and iv

C. iii, iv and v

D. i, ii and iii

Answer: A

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75. Which of the following was most similar to modern man ?

A. Java man

B. Neanderthal man

C. Homo habilis

D. Cro-Magnon Man

Answer: D

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76. Assertion: Among the primates, chimpanzee is is the closest relative of the present day humans.

Reason : The banding pattern in the autosome numbers 3 and 6 of man and chimpanzee is remarkably similar.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true and the reason is not correct explanation of the assertion.

C. If the assertion is true but reason is false

D. If both the assertion and reason are false.

Answer: A

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77. Assertion (A) : Natural selection is the outcome of difference in survival and reproduction among individuals that show variation in one or more traits.

Reason (R) : Adaptive forms of a given trait tent to become more common, less adaptive ones become less common or disappear.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true and the reason is not correct explanation of the assertion.

C. If the assertion is true but reason is false

D. If both the assertion and reason are false.

Answer: A

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78. Assertion: Coacervates are believed to be precursors of life.

Reason: Coacervates were self duplicating aggregates of proteins surrounded by lipid molecules

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true and the reason is not correct explanation of the assertion.

C. If the assertion is true but reason is false

D. If both the assertion and reason are false.

Answer: D

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79. Assertion : Human ancestors never used their tails and so the tail expressing gene has diappeared in them.

Reason : Lamarck's theory of evolution is popularly called theory of continuity of germ plasm.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true and the reason is not correct explanation of the assertion.

C. If the assertion is true but reason is false

D. If both the assertion and reason are false.

Answer: C

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80. Assertion : Comparative biochemistry provides a strong eviednce in favour of common ancestory of living beings.

Reason : Genetic code is universal.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true and the reason is not correct explanation of the assertion.

C. If the assertion is true but reason is false

D. If both the assertion and reason are false.

Answer: B

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81. Assertion : Darwin's finches show a variety of beaks suited for eating large seeds, flying insects and cactus seeds.

Reason : Ancestral seed-eating stock of Darwin's finches radiated out from South American mainland to different geographical areas of the Galapagos Island, where they found competitor-free new habitats.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true and the reason is not correct explanation of the assertion.

C. If the assertion is true but reason is false

D. If both the assertion and reason are false.

Answer: B

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82. Assertion : The earliest fossil form in the phylogeny of horse is eohippus.

Reason : Eohippus lived during the early Pliocene epoch.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true and the reason is not correct explanation of the assertion.

C. If the assertion is true but reason is false

D. If both the assertion and reason are false.

Answer: C

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83. Assertion : The primitive atmosphere was reducing one i.e., without oxygen.

Reason : In the atmosphere, oxygen was involved in forming ozone.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true and the reason is not correct explanation of the assertion.

C. If the assertion is true but reason is false

D. If both the assertion and reason are false.

Answer: C

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84. Assertion :- Darwin's finches are calssical example of natural selection. Reason :- Darwin explained that beak sizes and shape in finches varied according to food habit fo different finches.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true and the reason is not correct explanation of the assertion.

C. If the assertion is true but reason is false

D. If both the assertion and reason are false.

Answer: A

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85. Assertion : Hardy-Weinberg principle states that in the absence of disturbing influences, gene frequencies of large populations of sexually reproducing organisms do not change , provided that matings occur at random.

Reason : The disturbing influences include mutation, gene flow genetic drift, genetic recombination and natural selection.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true and the reason is not correct explanation of the assertion.

C. If the assertion is true but reason is false

D. If both the assertion and reason are false.

Answer: B

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