

BIOLOGY

BOOKS - DINESH PUBLICATION ENGLISH

EVIDENCES OF EVOLUTION

Multiple Choice Questions

1. The term evolution in biology means that

- A. Fossils are old
- B. Living things constantly change
- C. Life began in sea
- D. Man descended from apes

Answer: B



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2. Haekel's theory of recapitulation (Biogenetic law) means that

- A. Life history of an organism reflects its evolutionary history.
- B. All organisms apart as an egg.
- C. Progency resembles with parents.
- D. Lost body parts are regenerated.

Answer: A



3. Connecting link between chordates and non-chordates is

A. Peripatus

B. Balanoglossus

C. Sphenodon

D. Tachyglossus.

Answer: B



4. In which period of paleozoic era first vertebrate appeared.

A. Ordovician

B. Devoninan

C. Silurian

D. Mississipian

Answer: A



21 Trinch annual actual acca in parcozore cre	5.	Which	animal	dominated	in	paleozoic era
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- A. Reptlies
- B. Fishes
- C. Birds
- D. Mammals

Answer: B



6. Fossilization occurs where

- A. Organisms are buried and preserved by natural processes.
- B. Animals are destroyed by environment
- C. Animals are destroyed by scavengers.
- D. Animals are buried by natural processes.

Answer: A



7. The greatest evolutionary change enabling the land vertebrates to be completely free from water, was the development of

- A. Four eggs
- B. Lungs
- C. Shelled eggs and internal fertilization
- D. Four chambered heart.

Answer: C



8. [A]: Jurassic period is considered the age of reptiles.

[R]: Reptiles dominated during this Jurassic period

A. Fishes

B. Marine life

C. Protists

D. Amphibians.

Answer: C



9. Age of man' in geology is:

A. Proterozoic

B. Mesozoic

C. Coenozoic

D. Psychozoic

Answer: D



10. Coenozoic era is known as

- A. Age of Amphibia and lycopods
- B. Age of Marine and gymnosperms
- C. Age of reptile sand gymnosperms
- D. Age of Mammals and Modern flora.

Answer: D



11.	The	extreme	specialization	and	extinction
of	grea	t reptiles	occurred in:		

- A. Permian
- **B.** Triassic
- C. Jurassic
- D. Cretaceous

Answer: D



12. A fossil is a

- A. Naturally preserved remains or traces of animals or plants
- B. Dead animal of the past
- C. Organic relic of the past
- D. Stuffed animal.

Answer: C



13. The feature which enabled reptiles to dominate the land fauna for 100 million years, was

- A. Large size
- B. Heavy armour
- C. Large teeth
- D. Large eggs.

Answer: B



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		CP CCI.	or man	•••	5	. UBICA	, pcca	

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

Answer: D



15. Fossils are dated by:

- A. Stratigraphic position
- B. Amount of calcium residue
- C. Association with other animals
- D. Radio-active carbon from

Answer: D



16. Prototherians have evolved from

- A. Reptiles
- B. Birds
- C. Eutherians
- D. Amphibians.

Answer: A



17. Evolution is best defined as

- A. Inheritance of acquired characters.
- B. Descent by modification.
- C. Spontaneous generation
- D. Struggle for existence.

Answer: B



18. As evident from fossil records which era has no life ?

A. Azoic

B. Proterozoic

C. Paleozoic

D. Coenozoic.

Answer: A



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

A. Archeopterys between reptiles and mammals.

B. Lund fish between pisces and reptiles

C. Duck bill Platypus between reptiles and mammals.

D. Sphenondon between reptiles and birds.

Answer: C



20. During the days of Dinosaurs, mammals had

A. Already evolved

B. A size of rats and mice

C. Both A and B

D. Not yet evolved.

Answer: C



21. Vestigeal organ of python is:

A. Nose

B. Scales

C. Teeth

D. Hind limbs.

Answer: D



22. Being all mammals, whale, dolphins, bat, monkey and horse have some common character but they also show conspicuous differences. This is due to phenomenon of

- A. Normalisation
- B. Genetic drift
- C. Convergence
- D. Divergence.

Answer: D



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23. Birds and mammals in geological development of earth arose in period

A. Permain

B. Carboniferous

C. Jurassic

D. Oligocene and Ecoene.

Answer: C



24. Homologous organs are:

- A. Same origin but different functions
- B. Different origin but same functions.
- C. Same origin and same functions.
- D. Different origin and different functions.

Answer: A



25. Which of the following is vestigal organ

- A. Wisdom tooth
- B. Nails
- C. Scalp hair
- D. All the above

Answer: A



26. Appearance of teeth in the embryos of birds is an example of

- A. Ontogeny repeats phylogeny
- B. Evolution has taken place
- C. Birds have evolved from reptlies
- D. All the above.

Answer: D



A. Linnaeus
B. Lamarck
C. Darwin
D. Buffon
D. Balloll
Answer: D
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28. Which is a connecting link

27. Father of concept of evolution is

- A. Peripatus
- B. Echinda
- C. Proterospongia
- D. All of the above

Answer: D



- **29.** Which of the following is a living fossil?
 - A. Sphenodon

- B. Limulus
- C. Peripatus
- D. All of the above

Answer: D



- **30.** Blood precipitation test was proposed by
 - A. (a) Wallace
 - B. (b) Nuttal

- C. (c) Bateson
- D. (d) Needham

Answer: B



- **31.** Blood Precipitation test are used in
 - A. Blood grouping
 - B. Antigen-antibody reaction
 - C. Animal relations

D. Immunity

Answer: C



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32. The dating of rocks is done by calculating the ratio between

- A. (a) Uranium-lead
- B. (b) Potassium-argon
- C. (c) Rubidium-strontium

D. (d) All the above

Answer: D



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33. Which one of the following are analogous structures?

- A. Wings of butterfly, sparrow and bat
- B. Hind legs of horse, grass-hopper and bat
- C. Hands of man, monkey and kangaroo

D. Mandibles of cockroach, mosquito and boney bee.

Answer: A



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34. Dinosaurs are

- A. extinct amphibians
- B. Extinct reptiles
- C. Primitive mammals

D. Living reptiles

Answer: B



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35. Flippers of seal are

A. Fins

B. Skins outgrowth/webs

C. Fore limbs

D. Hind limbs.

Answer: C



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36. Non-functional wings occur in

A. Emu, Owl and Dodo

B. Ostrich, Kiwi and Stork

C. Kiwi, Emu and Ostrich

D. Rhea, Eagle and Cassowary

Answer: C



37. Which of the following would be easily fossilized

A. Heart

B. Tooth

C. Skin

D. Liver.

Answer: B



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38. Seedling of Acacia have

A. Simple leaves

B. Compound leaves

C. Stipular spines

D. Both B and C

Answer: A



39. Saplins of oaks of Northean USA posses

- A. Deciduous leaves
- B. Evergreen leaves
- C. Highly dissected leaves
- D. Axillary thorns

Answer: B



40. Who is called father of modern embrybology

- A. Ernst Haeckel
- B. Aristotle
- C. Von Baer
- D. Dollo

Answer: C



41. Vestigal organ present in Greenland Whale is

A. Fore limbs

B. Pelvic girdle

C. Hind limbs

D. Both B and C

Answer: D



42. Pistillode occurs in

- A. Male flowers of Cucurbits
- B. Female Flowers of cucurbits
- C. Bisexual flowers of Salvia
- D. Disc florets of Sunflower.

Answer: A



43. Who observed that embroys never pass through adult stages of their ancestors

- A. Von Baer
- **B.** Charles Darwin
- C. Ernst Haeckel
- D. Richard Owen

Answer: A



44. Which are vestigial in humans?
A. Tail vertebrate

- B. Auricular muscles
- C. Scalp muscles
- D. All the above

Answer: D



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45. Nictitating membrane is vestigial in

- A. Frog
- B. Rabbit
- C. Human
- D. All the above

Answer: C



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46. Flippers of Panguin and Dolphin are considered analogous through they are modifed forelimbs because

- A. Absence of certain bones
- B. Development from different lineages
- C. Structural difference
- D. Functional difference.

Answer: B



- 47. An example of analogous organs is
 - A. Tubers of Potato and Sweet Potato

- B. Tubers of Dahlia and Sweet Potato
- C. Tubers of Potato and Jerusalem

Artichoke

D. All the above

Answer: A



- 48. In land animals blood vascular system has
 - A. Single circulation

- B. Venous heart
- C. Arterial heart
- D. Arteriovenous heart

Answer: D



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49. In absolute dating, age of the rock/fossil is determined by

A. Depth of rock

- B. Exposure of rock
- C. Decay of radio isotope
- D. Rate of surface erosion of rock.

Answer: C



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50. Geological time scale was first developed by

A. Leonardo da Vinci

- B. Georges Cuvier
- C. Giovanni Avadunia
- D. Boltwood.

Answer: C



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51. When did all the major subdivision of vascular plants arose on earth

A. 425 million years in silurian

- B. 345 million years in carboniferrous
- C. 445 million years in Ordovician
- D. 540 million years in carboniferous

Answer: B



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52. The major taxonomic groups of vascular plants are distinguished by

A. Position of sporangia

- B. Types of leaves
- C. Types of vascular strands
- D. All the above

Answer: A



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53. In the most primitive psilopsids, sporangia are

A. In whorls

- B. Terminal
- C. At leaf bases
- D. Over leaves

Answer: B



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54. Origin of seed in land plants occured about

A. 160 million years ago

- B. 240 million years ago
- C. 285 million years ago
- D. 345 million years ago

Answer: D



- 55. Flowering plants arose about
 - A. 30 million years ago
 - B. 140 million years ago

C. 225 million years ago

D. 345 million years ago

Answer: B



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56. EVOLUTION OF HORSE

A. Lengthening of limbs and increases in size

B. Progressive loss of digits and lenthening of retained digits causing shifting of soft footed to paddil,e footed.

C. Increased complexity of molars and molarisation of premolars.

D. All the above.

Answer: D



- 57. The homologous organs are
 - A. Tendrils of Cucurbita and thorns of Bougainvillea
 - B. Tendrils of Pea and thorns of

 Bougainvillea
 - C. Phylloclades of Opuntia and phyllodes of
 - Acacia
 - D. Spines of Acacia and tendrils of

 Passiflora

Answer: A



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58. Pouched mammals attained diversity in

- A. New Zealand
- B. South Africa
- C. Australia
- D. South America

Answer: C

59. Development of similar habits in pouched and placental mammals found in similar habitals is called

- A. Divergent evolution
- B. Convergent evolutions
- C. Adaptive radiation
- D. Macroevolution

Answer: B

60. The name Galapagos islands has been given on the basis of occurrence of

A. Black cooled lava

B. Giant Tortoises

C. Giant igunnas

D. All the above

Answer: B



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61. Which types of birds are absent on Galapagos islands when they were surveyed by Darwin

- A. Warblers and wood peckers
- **B.** Carnivores
- C. Cactus feeding
- D. Seed eating.

Answer: A

62. Concept of ladder of nature (Scala

Naturae) was developed by

A. Empedocles

B. Plato

C. Aristotle

D. Erasmus Darwin

Answer: C



63. Scala Naturae is also called

- A. Historia Animals
- B. Great chain of Beings
- C. De partibus Animalium
- D. Generations Animalium

Answer: B



64. The term Darwin's finches was given to Galapagos finches by

- A. Huxley
- B. Spencer
- C. Wallace
- D. Lack.

Answer: D



65. Archaeopteryx is considered as a connecting link between reptiles and birds. Justify the statement by giving two characters of each.

- A. Archaeopterys
- B. Platypus
- C. Java Ape man
- D. Whale.

Answer: A



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66. Correct order is

A. Palaeozoic
$$ightarrow$$
 Archaeozoic $-$

Coenozoic

B. Archaeozoic
$$ightarrow$$
 Palaeozoic $ightarrow$

Proterozoic

C. Palaeozoic ightarrow Mesozoic ightarrow Coenozoic

D. Mesozoic ightarrow Archaeozoic ightarrow

Proterozoic.

Answer: C



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67. Homologous organs are

- A. Dissimilar origin and dissimilar structures
- B. Dissimilar origin but similar functions.
- C. Similar origin with similar or dissimilar functions.

D. Similar origin with dissimilar functions.

Answer: C



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68. Process of evolution is

A. Discontinuous

B. Discontinous in the past but continous

presently

C. Continous in the past but discontinuous presently

D. Continuous

Answer: D



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69. Golden Age of Dinosaurs / Age of reptiles was

A. Mesozoic

- B. Coenozoic
- C. Palaeozoic
- D. Psychozoic

Answer: A



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70. Parallelism is

A. Adaptive divergence

- B. Adaptive divergence of widely separated species.
- C. Adaptive convergence of widely different species.
- D. Adaptive convergence of closely related groups.

Answer: D



71. Resemblance between widely different groups due to a common adaptation is known as

- A. Parallel evolution
- B. Divergence evolution
- C. Convergent evolution
- D. Retrogressive evolution.

Answer: C



72. Which will be true in sedimentary rocks

A. Upper strata older and lower younger

B. Upper strats younger and lower older

C. There is no stratification

D. None of the above.

Answer: B



73. The homologous organs are

- A. Trails of bird, monkey and scorpion
- B. Stings of honey bee, scorpion nad fangs of snake.
- C. Wings of butterfly, flying fish and bird
- D. Paddle of whale, front legs of horse and arms of humans/legs of duck, hind limbs
 - of pig, hind limbs of kangaroo.

Answer: D

74. 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



75. Homologous organs have

- A. Wings of Pigeon nad Butterfly
- B. Wings of Pigeon and Housefly
- C. Wings of Pigeon and arms of Humans
- D. Wings of bat, housefly and Butterfly.

Answer: C



76. Who was the first to explain recapitulation theory?

- A. Wallace
- B. Lamarck
- C. Haeckel
- D. Mendel

Answer: C



77. Which one is not a vestigal structure in humans

- A. Epiglottis/Intestine
- B. Vermiform appendix
- C. Wisdom teeth
- D. Body of hair.

Answer: D



- **78.** Which of the following sets represents vestigial organs
 - A. Vermiform appendix, body hair and patella
 - B. Wisdom teeth, body hair and atlas vertebra
 - C. Ear muscles, cochlea and coccyx
 - D. Vermiform appendix, ear muscles and coccys.

Answer: D



- **79.** Haekel's theory of recapitulation (Biogenetic law) means that
 - A. Ontogeny repeats phylogency
 - B. High rates of reproduction.
 - C. Alternation of generations
 - D. Inheritance of acquired characters.

Answer: A



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80. Fossilisation is

- A. Organisms destroyed by scavengers
- B. Organism eaten by predators
- C. Animals buried and preserved by nature process.
- D. Organisms destroyed by calamities.



- **81.** Archaeopterys is known as missing/connecting link because it is a fossil and has characters between
 - A. Fishes and amphibians
 - B. Birds and reptiles
 - C. Reptiles and mammals
 - D. Chordates and nonchordates.

Answer: B



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- 82. Which is a set of evidence of evolution
 - A. Homologous and analogous organs
 - B. Homologous and vestigial organs
 - C. Analogous and vestigial organs
 - D. All the above.

Answer: D

83. Basic principles of embryonic development were stated by

A. Van Baer

B. Weismann

C. Haeckel

D. Morgan

Answer: A



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84. Origin of first mammals occurred:

A. 500 million yrs

B. 220 million yrs

C. 1600 million yrs

D. Over 1600 million yrs ago.

Answer: B



85.	Fossil	reptile	having	mammal	ian	traits	was

- A. Peripatus
- B. Pelycosaurus
- C. Tyrannasaurus
- D. Archaeopterys

Answer: B



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

- A. Biogenetic law
- B. Anaximander's Law
- C. Florkins's Law
- D. Law of Segregation.

Answer: A



87. Dinosaurs were dominant during

- A. Devonian
- B. Plesocence
- C. Permain
- D. Jurassic

Answer: D



- A. Wings of Bird and Butterfly
- B. Wings of Bird and Bat
- C. Limbs of Horse and Human
- D. Teeth of human and Gorilla

Answer: A



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89. Which one is vestigial in humans

A. Extra-abdominal muscle

- B. Body hair
- C. Thumb
- D. Conjuction

Answer: B



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90. Which animal has become extinct recently

?

A. Draco

- B. Dinosaur
- C. Mammoth
- D. Pteridosperms



- 91. Dinosaurs disappeared during
 - A. Jurassic
 - B. Triassic

- C. Cretaceous
- D. Permian



- **92.** Age of mammals and birds is
 - A. Mesozoic
 - B. Coenozoic
 - C. Archaeozoic

D. Palaeozoic.

Answer: B



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93. Fossil X is older than fossil Y because:

A. Fossil X was found in deeper sedimentation

B. Fossil Y was found in deeper sedimentation

C. Fossil Y has homologus and analogous organs of X

D. Fossil Y has some vestigial organs functional in X

Answer: A



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94. Evoluationary convergence is development

- A. Common set of characters in groups of different ancestry
- B. Dissimilar characters in closely groups
- C. Common set of characters in closely related groups.
- D. Random mating.

Answer: A



95. Which one is vestigial in humans?

- A. Pinna muscles
- B. Eye lids
- C. Canine teeth
- D. Nails.

Answer: A



96. Biogenetic law was propounded by

- A. Von Baer and Haeckel
- B. Von Bear and Aristotle
- C. Haeckel and Mendel
- D. Mendel and Griffith

Answer: A



97. Homologous organs have

- A. Wings of insects and Bat.
- B. Gills and Fish and lungs of Rabbit
- C. Pectoral fins of Fish and fore limbs of Horse.
- D. Wings of Grasshopper and Crow.

Answer: C



98. Fossils indicate the evolution	of

- A. (a) Monkey
- B. (b) Dinosaur
- C. (c) Horse
- D. (d) Man



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99. Which were dominant in mesozoic

- A. Ferms
- B. Mammals
- C. Dinosaurs
- D. Fishes



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100. Existence of Coal/Petroleum can be know from study of

- A. Ecology
- B. Economic Botany
- C. Palaeobotany
- D. Bacteriology



- 101. The age of fossils can be estimated now by
 - A. Amount of calcium

- B. Radioactive carbon contest
- C. Association with mammals
- D. Stratigraphic age.

Answer: B



- **102.** Which is not a vestigial part in humans?
 - A. Tail vertebrate
 - B. Veriform Appendix

- C. Muscles of pinnae
- D. Mallaeus/Pinna

Answer: D



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

- A. Merychippus
- B. Mesohippus

C. Eohippus

D. Equus.

Answer: C



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

A. Atavism

- B. Palaenontology/fossils
- C. Vestigeal organs
- D. Galapagos island fauna

Answer: B



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105. The preserved fossil remains of Archaeopteryx show that

A. It was flying reptiles from Triassic

- B. It was a flying reptile from Permain
- C. Reptiles gave rise to birds during

 Permain
- D. Reptiles gave rise to birds during Jurassic.

Answer: D



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106. Study of fossils is

- A. Organic evolution
- B. Palaeogeography
- C. Palaeontology
- D. Herpetology



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107. In human beings vestigial organs are

A. Wisdom tooth, coccyx, nail, eye lid and vermiform appendix

B. Wisdom tooth, coccys, vermiform appendix, pancreas and elbow joint

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

D. Coccys, wisdom tooth, nail, auticulur muscles.

Answer: C

108. Famous palaeonotologist/palaeobatanist of India was

A. P. Maheswari

B. S.R. Kashyap

C. B. Sahni

D. B.P. Pal

Answer: C



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109. Two geographical regions separated by high mountains are

- A. Oriental and Australian
- B. Palaearctic and Oriental
- C. Nearctic and Palaearctic
- D. Neotropical and Ethiopian

Answer: B



110. The 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



111. Wings of Mosquito,Bat and Bird show evolution called

- A. Divergent evolution
- B. Convergent
- C. Atavism
- D. Parallel.

Answer: B



112. Basic principles of embryonic development
were stated by

- A. Van Baer
- B. Haeckel
- C. Mendel
- D. Darwin

Answer: A



113. BirBal Sahni worked on:

- A. Algae
- B. Fossil plants
- C. Angiosperms
- D. Bryophytes

Answer: B



114. Animals have shorter and smaller extremities in colder areas.It is

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

Answer: A



115. Archaeopteryx shows origin of

A. Birds from reptiles

B. Mammals from reptiles

C. Reptiles from amphibians

D. Birds from amphibians

Answer: A



116. Organisms present at different places without any traces in between show

- A. Speciation
- B. Discontinuous distribution
- C. Punctured equilibrium
- D. Migration

Answer: B



117. Mammals occur on land, air and water. It is

A. Convergent evolution

B. Microevolution

C. Adaptation

D. Adaptive radiation.

Answer: D



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118. A vestigial organ in man is

- A. Mammary gland
- B. Pelvic gland
- C. Vermiform appendix
- D. Sebaceous glands.

Answer: C



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119. The wings of an insect and a bat exhibit

A. Analogy

- B. homology
- C. Connecting link
- D. Atavism

Answer: A



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120. Phylogeny is

- A. Castles of flies
- B. Development of an organ

- C. Developmental history of race.
- D. Evolutionary history

Answer: D



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121. Hand of man, wing of bat and flipper of seal represent :

- A. Analogous organs
- B. Vestigial organs

- C. Homologous organs
- D. Evolutionary organs.

Answer: C



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122. In general, in the developmental history of a mammalian heart, it is oberved that it passes through a two-chambered fish-like heat and finally to four-chambered stage. To which

hypothesis can this above cited statement be approximated?

- A. Biogenetic law
- B. Hardy-Weinberg law
- C. Mendelism
- D. Lamarckism

Answer: A



123. Existence of marsupials in Australia and

New Zealand proves

- A. Continential drift
- B. Geological period
- C. New evolution
- D. Both A and B

Answer: D



124. Evolution is

- A. Development of DNA from nucleotides
- B. Development of organisms through time
- C. Development of a cell from chemicals
- D. Cloning.

Answer: B



125. Birbal Sahni Institute of Palaeobotany is situated in

- A. Lucknow
- B. Delhi
- C. Calcutta
- D. Jodhpur

Answer: A



- 126. A connecting link between two phyla is
 - A. Archaeopterys- Aves and Mammalia
 - B. Amphioxus- Echinodermata and

- C. Peripatus- Annelida and Arthropoda
- D. Ornithorhyncus Aves and Reptilia.

Answer: C

Chordata



127. A vestigial organ in human is

- A. Ear pinna
- B. Nictitating membrane
- C. Mammary glands in males
- D. Knee bone.

Answer: B



128. Which of the following eras, in geological time scale corresponds to the period when life had not originated upon the earth?

- A. Palaeozoic
- B. Archaeozoic
- C. Azoic
- D. Mesozoic

Answer: C



129. Branch of botany dealing with external structure of plants is

- A. Ecology
- B. zoology
- C. anatomy
- D. morphology

Answer: B



130. The wings of an insect and a bat exhibit

A. Vestigial organs

B. Exoskeletal structures

C. Homologous organs

D. Analogous organs.

Answer: D



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131. A vestigial tooth is

- A. Incisor
- B. Molar
- C. Premolar
- D. Canine

Answer: D



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132. Adaptive similarities in animals of the same habitat constitute

- A. Adaptive radiations
- B. Parallel evolutions
- C. Convergent evolution
- D. Divergent evolution

Answer: C



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133. Homologous organs exhibit `:

A. Divergent evolution

- B. Convergent evolution
- C. Parallel evolution
- D. Both B and C

Answer: A



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134. Fossils are studied by

A. Tracing evolutionary history of

organisms

- B. Studying extinct organisms
- C. Filling gaps in our study
- D. Providing jobs to scientists

Answer: B



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135. Who was the first to explain recapitulation theory?

A. Mendel

- B. Haeckel
- C. Erasmus Darwin
- D. Weismann

Answer: B



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136. Monkeys and some lower groups have certain blood groups which are

A. Identical to those of man

- B. Identical to those of anthropod apes
- C. Somewhat similar to white persons
- D. Not identical to those of man.

Answer: A



- **137.** Organic evolution is change in
 - A. Single individual
 - B. A few members of population

- C. Major portion of population
- D. Entire populations.

Answer: C



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138. A bird with teeth is

- A. Kiwi
- B. Ostrich /king Vulture
- C. Dodo

D. Archaeopterys.

Answer: D



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139. Heart is four chambered in

- A. Amphibia
- B. Fishes
- C. Mammals
- D. Reptiles

Answer: C



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140. Living organism with oldest history is:

A. Dinosaur

B. Archaeopterys

C. Horse

D. Man

Answer: C

141. Homologous organs are

- A. Human eyes and Squid eyes
- B. Gills of fish and lungs of Man
- C. Hands of Man and wings of Bat
- D. Leaf of moss and frond of Fern.

Answer: C



142. Coal has been mainly formed by

- A. Bryophytes
- B. Pteridophytes/pteridosperms
- C. Angiosperms
- D. Algae

Answer: B



143. Darwin's finches provide an excellent evidence in favour of evolution. This evidence comes from the field of :

- A. Anatomy
- B. Morphology
- C. Biogeography
- D. All the above

Answer: C



144. Which one is not vestigial in humans?

- A. Tail bone
- B. Ear muscle
- C. Wisdom teeth
- D. Finger nails.

Answer: D



145. Vestigial pelvic girdle and bone remnants of hind limbs are characteristic of

- A. Whale
- B. Dolphin
- C. Shark
- D. Seal

Answer: A



146. The statement ' Nothing in biology makes sense except in the light of evolution was given by

- A. Dobzhansky
- B. Darwin
- C. Oparin
- D. Hooker

Answer: A



147. The sequence in evolution of horse was

A. Equus, Eohippus, mesohippus,

Merychippus

B. Eohippus, Mesohippus, Merychippus,

Equus

C. Mesohippus, Eohippus, Merychippus,

Equus

D. Merychippus, Eohippus, Equus,

Mesohippus

Answer: B



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148. Origin of life occurred in

A. Carboniferous

B. Cambrian

C. Pre-cambrian

D. Ordovician

Answer: C



149. Evolution of a species or group can be studied through

A. Fossils

B. Carbon dating

C. DNA analysis

D. All the above

Answer: A



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150. Phenomenon of organisms having similar structure with a similar origin is

A. Mimicry

B. Analogy

C. Homology

D. Both A and B

Answer: C



151. Homologous organs indicate

- A. Convergent evolution
- B. Parallel evolutions
- C. Natural evolution
- D. Common descent.

Answer: D



152. The age of evolution of man is measured by

A. Electron microscope

B. Chemical reaction

C. Radioactive dating

D. Ultraviolet radiation.

Answer: C



153. Modern birds rose in

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

Answer: B



154. Tasmanian wolf is a marsupial while wolf is placental mammal. This shows

- A. Convergent evolution
- B. Divergent evolution
- C. Parallelism
- D. Inheritence of acquired characters.

Answer: A



155. Ontogeny recapitulates phylogeny, this theory is called

A. Hardy Weinberg's law

B. Pauling law

C. Biogenetic law

D. Thomas law

Answer: C



156. The Jurassic period belongs to the era:

- A. Palaeozoic
- B. Mesozoic
- C. Coenozoic
- D. Preterozoic

Answer: B



157. The pioneers in the field of 'organic evolution' are

A. Darwin, lamarck, Landsteiner and De Vries

B. Darwin, De vries, Lamarck, Huxley

C. Lamarck, Landsteiner, Malthus, De Vries.

D. Lansteiner, De Vries, Malthus, Darwin

Answer: B



158. The reason behind the occurrence of endemic species in South America and Australia is

- A. Retrogressive evolution
- B. Continential separations
- C. These species have become extinct from other regions
- D. Absence of terrestrial links between these places.

Answer: B



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159. Similarities in organism with different genotype indicates.

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

Answer: A



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160. Half-life of (14)C is:

A. 50 years

B. 500 years

C. 5000 years

D. $5 imes 10^5$ years

Answer: C

161. Which of the following is not an atavistic character?

A. Tail in some babies

B. Enlarged canines

C. Six fingers

D. Dense body hair.

Answer: C



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162. Which are not homologous?

A. Fore arm of humans and fins of fishes

B. Wings of bat and insects

C. Fins of fishes and flippers of whales

D. Human fore arms, Bat's wings and

flippers of whale.

Answer: B



163. Presence of two chambered heart and gills in tadpole is example of

A. Neo-Darwinism

B. Gause's law

C. Chargaffs law

D. Biogenetic law

Answer: D



164. Presence of two chambered heart and gills in tadpole is example of

- A. Radiation
- B. Atavism
- C. Mutation
- D. Crossing over.

Answer: B



165. New unit of evolution is called:
--

- A. Population
- **B.** Species
- C. Individual
- D. Subspecies.

Answer: A



166. Possibility of occurrence of coal in an area is determined by study of

- A. Microfossils
- B. Ecology
- C. Economic botany
- D. Mining contents

Answer: A



167. Darwin's finches occur in	

- A. Australia
- B. Galapagos islands
- C. Siberia
- D. India.

Answer: B



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168. Coevolution does not occur in case of

- A. Parasitism
- B. Mutualism
- C. both A and B
- D. Commensalism

Answer: D



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169. Ancestral amphibians or early tetrapods evolved during

- A. Carboniferrous period
- B. Cretaceous period
- C. Jurassic period
- D. Devonian period

Answer: D



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170. Evidences for evolution from fossils belong to the domain of

- A. Biogeography
- B. Embryology
- C. Palaeontology
- D. Anatomy

Answer: C



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171. Dinosaurs were dominant during

A. Jurassic

- **B.** Cretaceous
- C. Triassic
- D. Palaeocene

Answer: A



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172. Which of the following is not correctly paired

A. Mesozoic- Age of mammals

- B. Study of fossils- Palaeontology
- C. Mutation theofy Hugo de Vries.
- D. Origin of Speices- Charles Darwin

Answer: A



- **173.** Study of plant fossils is
 - A. Paedology
 - B. Palynology

- C. Palaeoinsectology
- D. Palaeobotany

Answer: D



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174. Most interacting populations are:

- A. Symbiotic
- B. Mutualistic
- C. Parasitic

D. Coevolved.

Answer: D



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175. Fossil bird having reptilian character evolved during which period ?

A. Jurassic

B. Triassic

C. Cretaceous

D. Permian

Answer: A



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176. Mesozoic era is the age of:

A. Fishes

B. Amphibians

C. Reptiles

D. Molluscs

Answer: C



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177. Continential drift explains

A. Mass extinctions

B. Distributions of fossils on earth

C. Geographical upheavals

D. All the above

Answer: D

178. Reptilian feature of Archaeopteryx:

- A. U-shaped furcula
- B. Beak
- C. Abdominal ribs
- D. Feathers

Answer: C



179. Archaeopteryx is connecting link between

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

D.

Answer: D



180.	Which	is	not a	vestigial	organ	in	man?
					J . O		

- A. Tail vertebrae
- B. Nails
- C. Nictitating membrane
- D. Vermiform appendix

Answer: B



181. Development of unrelated groups of animals along parallel lines in adaptation to a similar environment is called

- A. Adaptive convergence
- B. adaptive radiation
- C. Adaptive divergence
- D. Adaptive induction.

Answer: A



182. Which of the followins is vestigial in humans

- A. Mammaary glands in males
- B. Knee bones
- C. Nictitating membrane
- D. Ear pinna

Answer: C



- **183.** which is a pair of vestigial organs?
 - A. Coccyx and intercostal muscles.
 - B. Coccyx and auricualr muscles.
 - C. Facial hairs in ladies.
 - D. Coccyx and premolars.

Answer: B



184. Which one is used for dating archaeological specimens like bones, shells and wood?

- A. (3)H
- B. (14)C
- C. $\hat{}$ (121)I
- D. (32)P

Answer: B



185. Which is sequenced during study of phylogency?

A. mRNA

B. rRNA

C. tRNA

D. DNA

Answer: D



186. Convergent evolution is illustrated by

- A. Rat and Dog
- B. Bacterium and Protozoan
- C. Starfish and Cuttle fish
- D. Dogfish and Whale.

Answer: D



- **187.** 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 functions.
 - C. Organs appearing only in embryonic stage and disappearing later in the adult.

D.

Answer: A



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188. The early stage human embryo distinctly possesses

A. Gills

B. Gill slits

C. External ear (pinna)

D. Eye brows

Answer: B



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189. Mesozoic era was dominated by

A. Birds

B. Fishes

C. Reptiles

D. Mammals.



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190. Law of embryonic development was proposed by

- A. Darwin
- B. Von Baer
- C. Haeckel
- D. Mendel

Answer: B



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191. Wings of bird and bat are

- A. Homologous with no analogy
- B. Analogous with no homology
- C. Neither homologous nor analogous
- D. Both homologous and analogous

Answer: D

192. Which one is not a vestigial organ?

- A. Flipper of Seal
- B. Coccyx of man
- C. Pelvic of python
- D. Wing of kiwi.

Answer: A



193. Organs related through common descent but now functionally different are

- A. Analogous organs
- B. Homologous organs
- C. Divergent organs
- D. Parallel organs.

Answer: B



194. Which one is incorrect.

A. Wings of insects and birds are analogous

B. Wings of bat and birds are homologous

C. wings of insects and bat are analogous

D. Wings of insects and birds are homologous.

Answer: D



195. Age of fossils in the past was generally determined by radio-carbon 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, include

A. Study of carbohydrates and protein in fossils.

B. Study of conditions of fossilisation

- C. Electron spin resonance and fossils DNA
- D. Presence of carbohyrates and protien in rocks.



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196. Flippers of seal are modified:

- A. Hind limbs
- B. Fore limbs

- C. Fins
- D. Gills

Answer: B



- 197. Sweet potato and potato are example of:
 - A. Homologous
 - B. Analogous
 - C. Recent introductions

D. Two species of the same genus.

Answer: B



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198. Assertion: Natural selection is the outcome of differences in survival and reproduction among individuals that show variation in one or more traits.

Reason: Adaptive form of a given trait tend to

become more common, less adaptive ones become less common or disappear.

- A. A
- B.B
- C. C
- D. D

Answer: A



199. The organs which perform different functions but have the same basic structure are known as:

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

Answer: B



200. The classical example of adaptive radiation in development of new species is :

- A. Marsupials of Australia
- B. Darwin's finches
- C. Giant Totroise
- D. All the above

Answer: D



201. Bieng all mammals, whale, dolphin, bat, monkey and horse have some important common characters, but they also shos conspecuous difference. This is due to the phenomemon of

- A. Divergence
- B. Convergence
- C. Genetic drift
- D. Normalisation

Answer: A

202. Below mentioned pairs of structures is considered to be 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 bird and wings of Moth.



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203. According to Darwinism fossil of organisms found in south America resembles most, the fossil of

Or

Most primitive living mammals which provided an evidence or organic evolution from geographical distribution are found in

- A. North America
- B. Africa
- C. Australia
- D. Both B and C

Answer: D



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204. The biogenetic law of Haeckel is

A. Omnis vivum e vivum

- B. Omnis cellula e cellula
- C. Ontogency repeats phylogency
- D. Phylogency repeats ontogeny



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

A. Radiocarbon method

- B. Potassium- argon method
- C. Electron spin resonance method
- D. Uranium lead method.



- 206. Dinosaurs were present during the
 - A. Palaeozoic era
 - B. Coenozoic era

- C. Mesozoic era
- D. Precambrian era.



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207. Which is correct?

- A. $99\,\%$ of existed species are extinct
- ${\rm B.}\,65\,\%$ of existed species are extinct
- C. $40\,\%$ of existed species are extinct

D. 30% of existed species are extinct.

Answer: A



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208. Identify the correct arrangement of periods of palaeozoic era in ascending order in geological time scale.

A. Cambrian ightarrow Devonian ightarrow Ordovician

ightarrow Silurian ightarrow Carboniferous ightarrow

Permain

B. Cambrian ightarrow Ordovician ightarrow Silurian

ightarrow Devonian ightarrow Carboniferrous ightarrow

Permain

C. Cambrian ightarrow Ordovician ightarrow Devonian

ightarrow Silurian ightarrow Carboniferous ightarrow

Permian.

D. Silurian ightarrow Devonian ightarrow Cambrian

ightarrow Ordovician ightarrow Permain. ightarrow

Carboniferous

Answer: B



- **209.** An important evidence in favour of organic evolution is the occurrence of
 - A. Homologous and analogous organs
 - B. Homologous and vestigial organs
 - C. Analogous and vestigial organs
 - D. Homologous organs only.

Answer: A



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210. Jurassic period of the mesozoic are is characterized by

- A. Flowering plants and first dinosaurs appear
- B. Gymnospers are dominant plants and first birds appear

C. Radiation of reptiles and angiosperms appear

D. Dinosaurs become extinct and angiosperms appear.

Answer: B



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211. Evolutionary history of an organism is known as-

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

Answer: B



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212. Aristotle's lantern is connected with

A. Inanimate matter $\,
ightarrow \,$ Lower plants $\,
ightarrow \,$

Higher plants ightarrow Zoophyta ightarrow

Entoma ightarrow Ostracoderma ightarrow Malacia

ightarrow Malacostraca ightarrow Fish ightarrow

Oviparous quadrupeds o Cetacea o

Birds ightarrow Viviparous quadrupeds ightarrow

Humans

B. Inanimate matter ightarrow Lower plants ightarrow

Higher plants ightarrow Zoophyta ightarrow Entoma

ightarrow Malacia ightarrow Malacostraca ightarrow

Ostracoderma Fish ightarrow Oviparous

quadrupeds Cetacea ightarrow Birds ightarrow

Viviparous quadrupeds ightarrow Humans

C. Inanimate matter ightarrow Lower plants ightarrow

Higher plants ightarrow Zoophyta ightarrow

Malacia ightarrow Entoma ightarrow Malacostraca

ightarrow Ostracoderma ightarrow Fish ightarrow

Oviparous quadrupeds ightarrow Cetacea ightarrow

Birds ightarrow Viviparous quadrupeds ightarrow

Humans

D. Inanimate matter \rightarrow Lower plants \rightarrow

Higher plants ightarrow Zoophyta ightarrow

Entoma ightarrow Ostracoderma ightarrow

Malacostraca ightarrow Malacia ightarrow Fish ightarrow

Cetacea ightarrow Oviparous quadrupeds ightarrow

Birds ightarrow Viviparous quadrupeds ightarrow

Humans

Answer: D



213. Major radiation of mammals, birds and pollinating insects took place in which epoch?

- A. Oligocene
- B. Palaeocene
- C. Pilocene
- D. Eocene

Answer: B



214. Which is correct

A. Wings of birds and insects are homologous

B. Archaeopteryx lithographia is missing link between birds and mammals

C. Paired fins of fish and flippers of whale

D Caecum and appendix in Rabbit and man

D. Caecum and appendix in Rabbit and man are analogous.

Answer: C

215. First mammal occurred in which eral period?

A. Permian.....Palaezoic

B. Triassic.....Mesozoic

C. Tertoary.....Coenozoic

D. None of these.

Answer: B



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216. Most of the fossils occur in rocks

A. Sedimentary

B. Igneous

C. metamorphic

D. none of the above

Answer: A



217. Duck billed platypus is a connecting link between

- A. Echinodermata and chordata
- B. Arthropoda and mollusca
- C. Reptilla and mammalia
- D. Reptilia and aves.

Answer: C



218. Plants and animals of Galapagos islands resemble most closely to plants and animals of

- A. Noth Africa
- B. South Africa
- C. North America
- D. South America

Answer: D



219. Fossil found in Mandla district of MP is

- A. 260 million years old
- B. 100 million years old
- C. 50 million years old
- D. 20 million old.

Answer: C



220. Tendrils of Cucurbita and thorns of Bougainvillea are

- A. Homologous organs
- B. Analogous organs
- C. Vestical organs
- D. Atavistic divergence.

Answer: A



221. Paralelism is due to

- A. Adaptive divergence
- B. Adaptive convergnece
- C. Adaptive convergence of unrelated species
- D. Adaptive convergence of closely related species.

Answer: D



222. Which one is correct?

A. There is no evidence of presence of gills in mammalian embryos

- B. Ontogeny repeats phylogeny
- C. All plant and animal cells are totipotent
- D. Stem cells are specialised cells.

Answer: B



223. The finches of Galapogas islands provide an evidence in favour of-

- A. Retrogressive evolution
- B. Special creation
- C. Biogeographical evolution
- D. Evolution due to mutation.

Answer: C



224. 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. Micro-evolution
- D. Co-evolution.

Answer: A



- 225. Adaptive radiation refers to:-
 - A. Evolution of different species from a common ancestor
 - B. Adaption due to geographical isolation
 - C. Migration of members of a species to different geographical areas
 - D. Power of adaption of an individual to a variety of environments.

Answer: A

226. What is common to whale seal and shark

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

Answer: D



227. 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 Bongainvillea and tendril of

Cucurbita

Answer: D

228. Descendent of fossil Protylopus is

- A. Giraffe
- B. Camel
- C. Elephant
- D. Cow.

Answer: B



229. Vestigal organs provide evidence of organic evolution in the category

- A. Anatomical
- B. Embryological
- C. Morphological
- D. Palaeontological

Answer: C



230. Life has existed on earth for the last

- A. 2-3 billion years
- B. 3-5 billion years
- C. 4-3 billion years
- D. 5-0 billion years

Answer: B



231. Darwin's finches show one of the following aspects of evolution.

- A. Adaptive radiation
- B. Parallel evolution
- C. Homology
- D. Natural selection.

Answer: A



232. Connecting link between Annelida and

Mollusca is

- A. Nautilus
- B. Neopilina
- C. Glochidium larva
- D. Veliger larva.

Answer: B



233. Which of the following is the earliest era

- A. Coenozoic
- B. Mesozoic
- C. Palaeozoic
- D. Pre-cambrian.

Answer: D



____ organs

- A. Vestigal
- B. Analogous
- C. Homologous
- D. None of the above.

Answer: C



235. Closely related species varying different in traits expresses :

- A. Convergent evolution
- B. divergnet evolution
- C. Parallel evolution
- D. None of the above.

Answer: B



236. Which of the following isotopes is used for finding the fossil age maximum about 35,0000 years?

A.
$$\cdot^{238}$$
 U

$$\mathrm{B..}^{235}\,U$$

$$\mathsf{C..}^{235}\,Po$$

D.
12
 C

Answer: A



237. 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



238. Mass extinction at the end of Mesozoic era was probably due to

- A. Continental drift
- B. Massive glaciation
- C. Collision of earth with large meteorite
- D. Change in earth's orbit.

Answer: C



239. Tachyglossus is a connecting link between

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

Answer: A



240. Phylogeny is

- A. Evolutionary history
- B. Life history
- C. Group of phyla
- D. Genetics of animals.

Answer: A



241. Relatedness of two species is tested through

- A. RNA and proteins
- B. DNA and proteins
- C. Antibiodies and transposons
- D. None of the above.

Answer: B



242. According to Allen's rule, the mammals

from colder climates have

- A. Larger body mass
- B. Small body mass
- C. Longer extremities
- D. Smaller extremities.

Answer: D



243. Peripatus is a connecting link between

- A. Porifera and coelenterata
- B. Ctenophora and platyhelminthes
- C. Mollusca and echinodermata
- D. Annelida and arhtropoda

Answer: D



244. Origin of first toothed birds and gymnosperms took place during

- A. Cretaceous
- B. Jurassic
- C. Triassic
- D. Permian

Answer: C



245. A living connecting 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



246. Which of the following statements is incorrect after the industrial revolution that has occurred in England?

A. They had black colour

B. They had grey body colour

C. They shifted to different habitat

D. They reproduced vigorously.

Answer: A



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247. In evolution of horse, the two most important anatomical and morphological changes brought about is

A. Limbs and tail

B. Limbs and teeth

C. Teeth and tail

D. Limbs and height

Answer: B

248. The vestiges of girdles are found in

A. Rattle snake

B. Krait

C. Cobra

D. Python.

Answer: D



249. 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



250. First seed plants evolved during

- A. Cretaceous era
- B. Carboniferous era
- C. Devonian era
- D. Silurian era.

Answer: B



251. Which was the bigges land dinosaur?

- A. Protoceratops
- B. Amptosaurus
- C. Tyrannosaurus rex
- D. Ichthyosaurus.

Answer: C



252. Anatomically and structurally different but functionally similar structures are called

- A. Analogous organs
- B. Homologous organs
- C. Vestigial organs
- D. None of these.

Answer: A



253. Homologous organs have

- A. Similar morphology
- B. Similar anatomy
- C. Different anatomy
- D. All of the above

Answer: B



254. 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 variation, (ii) survival, (a-i) covergent

B. (a-i), convergent, (b-i) oygen, (ii)nucleolides

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

rudimentary (ii) anatomical

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

Answer: A



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255. 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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256. 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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257. Age of fishes is also known as

A. Silurian

B. Ordovician

C. Devonian

D. Permian

Answer: C



258. Fossilized faecal materials of animals are known as :

A. Caprolites

B. Compressions

C. Moulds

D. Casts.

Answer: A



- **259.** Identify the examples of homologous structures from the following
- (i) Vertebrate hearts
- (ii) Thorns in Bougainvillea and tendrils of Cucurbita.
- (iii) Food storage organs in sweet potato and potato
 - A. Optic lobes of brain
 - B. Heart of vertebrates

C. Cerebrum of brain

D. All of the above.

Answer: D



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

A. Cenzoic, mesozoic, palaeozoic, precambrian B. Cenozoic, palaeozoic, mesozoic, precambrain C. Precambrian, cenozoic, palaezoic, mesozoic D. Precambrian, palaezoic, mesozoic, cenzoic. **Answer: A**

261. Analogous organs are a result of

- A. Divergent evolution
- B. Gentic drift
- C. Convergent evolution
- D. Artificial selection.

Answer: C



262. Which one among the following is an example for homology?

- A. Wings of butterfly and bird
- B. Eyes of Octopus and mammals
- C. Flipper of penguins and dolphin
- D. Thorn of Baugainvillea and tendril of

Cucurbita

Answer: D



263. Tendrils in plants are an example of

- A. Adaptive radiation
- **B.** Coevolution
- C. Convergent evolution
- D. Divergent evolution.

Answer: C



264. Which one of the following matches is correct?

(1) Alternaria	Sexual	Deutero-
	reproduction	mycetes
	absent	
(2) Mucor	Reproduction	Asco-
	by Conjugation	mycetes
(3) Agaricus	Parasitic	Basidio-
	fungus	mycetes
(4) Phyto-	Aseptate	Basidio-
phthora	mycelium	mycetes



265. Which of the following is a vestigial structure in man

- A. Caecum
- B. Pinna of ear
- C. Wisdom tooth
- D. Muscles of glottis.

Answer: C



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266. Which is incorrect

- A. Wings of insects and bats are homologous
- B. Wings of insects and bats are analogous
- C. Wings of bats and birds are analogous.
- D. Wings of insects and birds are analogous.

Answer: A



267. Precious stones, such as gem stones, are products of

- A. Volcanic rocks
- B. Sedimentary rocks
- C. Metamorphic rocks
- D. Igneous rocks.

Answer: D



200		•	•	ı	
268.	Coenoz	zoic er	a ıs	known	as

- A. fishes
- B. Amphibians
- C. Mammals
- D. Reptiles.

Answer: C



269. In which geological era did microbes originate

- A. Precambrian
- B. Proterozoic
- C. Azoic
- D. Palaeozoic.

Answer: B



270. Origin of mammal - like reptiles	occurred
in	

- A. Jurassic
- B. Triassic
- C. Permian
- D. Tertiary.

Answer: C



- **271.** 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 divergent evolution
 - B. Homologous organs that have evolved due to convergent evolution
 - C. Homologous organs that have evolved due to divergent evolution

D. Analogous organs that have evolved due to convergent evolution.

Answer: D



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

A. Ear pinna, patella, olecranon process

B. Scalp muscles, coccygeal vertebrae

C. Ear muscles, third molars

D. Vermiform appendix, nictitating membrane.

Answer: A



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273. Wing of pigeon is homologous to the:

A. Ear of Bat

B. Wing of Butterfly

- C. Fore leg of Horse
- D. Tail of Rabbit.

Answer: C



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274. Arrange the periods of palaeozoic era in ascending order in a geological time scale

- A. Devonian
- B. Jurassic

- C. Tertiary
- D. Cretaceous

Answer: A



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275. Which one cannot determine phylogenetic relationships

- A. Physiology
- B. Morphology

- C. Biogeography
- D. Embryology.

Answer: B



- **276.** Choose the correct statements with reference to organic evolution
- (a) Flippers of Whale and wings of bat exhibit analogy
- (b) Wings of Butterfly and wings of bat exhibit

homolgy (c) Organs with dissimilar structure are called analogous organs (d) Organs with similar structure and origin are called homologous organs. A. a and c B. b and d C. a and b D. c and d

Answer: D



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277. The rise of first primates occurred in____epoch.

A. Palaeocene

B. Oligocene

C. Miocene

D. Eocene.

Answer: A



278. Choose the wrong statement

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

B. S.L. Miller observed that electric discharge in a flask containing $CH_4,\,H_2,\,$

 NH_3 and water vapours at 800° C

formed amino acids

C. Flippers of penguins and dolphins examples of homology

D. Homology indicates common ancestry

Answer: C



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

A. Adaptive radiation

- B. Homologous organs
- C. Convergent evolution
- D. Analogous organs.

Answer: B



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280. Which one of the following are analogous structures?

A. Gills of Prawn and lungs of Man

B. Thorns of Bougainvillea and tendrils of

Cucurbita

C. Flippers of Dolphin and legs of Horse

D. Wings of Bat and wings of Pigeon.

Answer: A



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281. An example of analogous organs is

A. Brain of fish and humans

- B. Thorns and tendrils in plants
- C. Wings of birds and butterfly
- D. Fore limbs of frog and horse.

Answer: C



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282. This is believed to have not evolved in cenozoic period :

A. Bryophytes

- B. Ferns
- C. Conifers
- D. Cycads.

Answer: A



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283. Fossils act as evidence of organic evolution. Which one of these features does not justify feature of fossils?

- A. They are remains of hard parts of life forms that existed in past
- B. They are remains of decayed and decomposed body parts
- C. Fossils present in lower strata of the earth are older than those present in the upper strata
- D. Study of fossils of different sedimentary layers indicate the geological period in which they existed.

Answer: B



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284. Choose the wrong pair

- A. Divergent evolution Fore limbs of whales, bats, cheetah and human
- B. Convergent evolution Flippers of penguins and dolphins

C. Homologous structures — Vertebrate hearts

D. Analogous structures — Tendril of Bougainvillea and Cucurbita.

Answer: D



285. How many years are considered in one minute in Geological clock

- A. 52,000 years
- B. 3,250,000 years
- C. 187,500,000 years
- D. 190,000 years.

Answer: B



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286. Wings of butterfly and wings of birds are examples of

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

Answer: B



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287. Match the following with references to geological time scale

- (a) Origin of trilobites (i) Silurian
 (b) Origin of ostracoderms (ii) Carboniferous
 (c) Origin of fishes (iii) Cambrian
 (d) Origin of amphibians (iv) Ordovician
 (e) Origin of cotylosaurs (v) Devonian
 - A. (a=iii), (b-c), (c-i), (d-iv), (e-ii)
 - B. (a-ii), (b-v), (c-i), (e-iii)
 - C. (a-iii), (b-iv), (c-ii), (d-v), (e-i),
 - D. (a-iii), (b-iv), (c-i), (d-v), (e-ii)

Answer: D



288. Select the correct pair

A. Adaptive radiation — Darwin's Finches

B. Connecting Link — Peppered Moth

C. Industrial melanism — Archaeopteryx.

D.

Answer: A



- **289.** The wings of a bird and the wings of an insect are
 - A. Homologous structures and represent divergent evolution
 - B. Analogous structures and represent convergent evolution
 - C. Phylogenetic structures and represent divergent evolution

D. Homologous structures and represent convergent evolution.

Answer: B



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290. One of the following period witnessed the maximum diversity of reptiles

A. Cretaceous

B. Jurassic

- C. Pleistocene
- D. Triassic.

Answer: A



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291. Which is a connecting link between fishes and amphibians

- A. Lung fish and Protopterus
- B. Latimeria

- C. Seymouria and Sphenodon
- D. All of the above

Answer: A



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292. From evolutionary point of view , the tendrils of Pea plant and Grape Vine are

- A. Homologous organs
- B. Analogous organs

- C. Connecting links
- D. Missing links.

Answer: B



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

- A. Hesperornis
- B. Ichthyornis

- C. Archaeopteryx
- D. Lychaenops.

Answer: C



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294. With the help of carbon dating technique which one of the following can be measured

- A. Age of fossil
- B. Age of a rock

- C. Age of a monument
- D. Age of universe.

Answer: A



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295. Which of the following pair is homologous organ?

A. Paddle of whale, front leg of horse and arms of man

- B. Sting of honey bee, sting of scorpin and poison fang of snake
- C. Wings of butterfly, wings of flying fish, wings of birds
- D. Tail of scorpion, tail of bird, tail of monkey.

Answer: A



296. Founder of modern palaeontology is

- A. Linnaeus
- B. Aristotle
- C. Cuvier
- D. Lanmarck.

Answer: C



297. This peroid belonged to palaezoic era

- A. Triassic
- B. Cambrian
- C. Jurassic
- D. Creataceous.

Answer: B



298. The first vertebrates were:

- A. Jawless Fish
- B. Monkey
- C. Frog
- D. Horse.

Answer: A



299. Which of the following is a pair of analogous organs?

- A. Wing of bird and flipper of whale
- B. Fore limbs of horse and man
- C. Wing of bird and fore limb of horse
- D. Wing of insect and wing of bird.

Answer: D



300. Given below are four statements i-iv regarding geological time scale. Read them carefully.

- (i) Paleozoic era is the era of ancient life.
- (ii) Ordovician period is the age of vertebraes.
- (iii) Carboniferous period is the age of reptiles
- (iv) Proterozoic era is the era of early life

Which of the above two statements are

incorrect?

A. i

B. ii

C. iii

D. iv.

Answer: C



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301. Which of the following structures is homologus to the wing of a bird?

A. Flipper of whale

B. Dorsal fin of shark

C. Wing of a moth

D. Hind limb of rabbit.

Answer: A



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302. Given below are assertion and reason. Point out if both are true with reason being correct explanation (A), both true but reason is not correct explanation (B), assertion true but reason is wrong (C), both are wrong (D).

Assertion: Analogous organs are a result of divergent evolution

Reason: Eye of Octopus and that of mammals depict divergent evolution.

- A. (A)
- B. (B)
- C.(C)
- D. (D)

Answer: D



303. Documented microfossils have been found that are as old as

- A. 2.5 million years
- B. 3.5 billion years
- C. 1.5 billion years
- D. 2.5 billion years

Answer: B



Check Your Grasp

- 1. Founder of modern palaeontology is
 - A. Birbal Sahni
 - B. Steward
 - C. Cuvier
 - D. Leonard de Vinci.

Answer:



2. Gills are found in

A. 5000 years old

B. 25000 year old

C. 500,000 year old

D. 2.5 million years old.

Answer:



3. An old city got buried under lava was

A. 635 B.C.

B. 79 A.D.

C. 635 A.D.

D. 1379 A.D

Answer:



- 4. Petrified fossils are a type of fossils having
 - A. All internal details
 - B. Organic materials replaced by mineral matter
 - C. Compressed remains of dead organisms
 - D. Thin carbon film showing external features.



5. Birbal Sahni Institute of Palaeobotany is situated in

A. Lucknow

B. Calcutta

C. Pune

D. Banglore.

Answer:



6. Monera evolved during

- A. Azoic
- B. Archaezoic
- C. Proterozoic
- D. Precambrian.

Answer:



-	_	. •			•
7. Age	9 01	tri	0	bites	IS

- A. Precambian
- B. Devonian
- C. Cambrian
- D. Permian.



8.	Epoch	in	which	first	man-like	creatures
ev	olved wa	as				

- A. Holocene
- B. Pilocene
- C. Pleistocene
- D. Miocene.



9. Free caudal vertebrate occurred in fossil

Archaeopteryx. The trait is

- A. Reptilian
- B. Avian
- C. Neither A nor B
- D. Mammalian.

Answer:



10. Gondwana Land comprised

A. India and Australia

B. India, Australia and New Zealand

C. India, Australia, New Zealand and South

Africa

D. India, Australia, New Zealand, South

Africa and South America.

Answer:



11. Darwin's finches on Galapagos islands are example of

- A. Convergent evolution
- B. Divergent evolution
- C. Adaptive radiation
- D. Both B and C

Answer:



- **12.** Related species of Alligators and Magnolias occur in
- (a) Both sides of isthmus of Panama
- (b) China and Japan
- (c) China and eastern U.S.A.
- (d) Parts of Russia and Canada
 - A. Both sides of isthmus of Panama
 - B. China and Japan
 - C. China and eastern U.S.A.
 - D. Parts of Russia and Canada.



- **13.** Analogous organs with similar external morphology are called
 - A. Homoplalstic
 - B. Hetroplastic
 - C. Heteromorphic
 - D. Both B and C



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14. An embryo may sometimes develop from any cell of embryo sac other than egg. It is termed as

- A. Last abdominal segment in Honey Bee and Scorpion
- B. Oviposter in Honey Bee and scorpion

- C. Last abdominal segment in Honey Bee and ovipositor in scorpion
- D. Ovipositor in Honey Bee and last abdominal segment in Scorpion.



15. In human beings canine teeth are

A. Useless

- B. Required for tearing food parts
- C. Chewing teeth
- D. Used for nibbling food arctiles.



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16. Proteus anguinus is characterised by vestigial

A. Limbs

- B. Eyes
- C. Wings
- D. Vermiform appendix.



- 17. Flightless bird of Australia is
 - A. Kiwi and Rhea
 - B. Rhea and Emu

- C. Emu and Cassowary
- D. Emu and Kiwi.



- **18.** Heart with incompletely divide ventricle is found in
 - A. Amphibians
 - B. Reptiles

C. Crocodiles

D. Fish

Answer:



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19. Who proposed for the first time that developing animal embryo passes through stages resembling adults of its ancestors.

A. Van Baer

- B. Meckel
- C. Haeckel
- D. Darwin

