

Questionbank Biology

UNIT-VII**CHAPTER-7 EVOLUTION****IMPORTANT POINTS**

The origin of life on earth can be understood only against the background origin of universe especially earth. Most scientists believe chemical evolution, i.e., formation of biomolecules preceded the appearance of the first cellular forms of life. The subsequent events as to what happened to the first form of life is a conjectured story based on Darwinian ideas of organic evolution by natural selection. Diversity of life forms on earth has been changing over millions of years. It is generally believed that variations in a population result in variable fitness. Other phenomena like habitat fragmentation and genetic drift may accelerate these variations leading to appearance of new species and hence evolution. Homology is accounted for by the idea of branching descent. Study of comparative anatomy, fossils and comparative biochemistry provides evidence for evolution. Among the stories of evolution of individual species, the story of evolution of modern man is most interesting and appears to parallel evolution of human brain and language.

- Alternative forms of a gene are called _____.
a) loci b) multiples c) Chromosomes d) Alleles
- Heredity or inheritance of specific traits became clearer due to
a) Lamarck's theory b) Mendel worked on garden peas
c) Darwinism d) Neo-Darwinism
- Which of the following sentences is true about the evolutionary process?
a) There is no real 'progress' in the idea of evolution.
b) humans are unique, a totally new type of organism.
c) progress is nature's religion.
d) Evolution of life forms was rapid in the beginning ages.
- Microevolution takes place due to
a) somatogenic variation
b) blastogenic variation
c) continuous variation
d) Successive variation
- The difference between Homo sapiens and the Homo erectus was _____.
a) Homo sapiens originated in Africa while Homo erectus was in Asia
b) Homo erectus were much smaller in size than homo sapiens.
c) Homo erectus stayed in Africa while Homo sapiens did not.
d) The size of their brain of Homo erectus was smaller to homo sapiens

Questionbank Biology

- 6 By studying analogous structures we look for _____.
a) similarities in appearance and function but different in structure.
b) similarities in appearance but differences in functions.
c) Similarities in organ structure.
d) Similarities in cell make up.
- 7 _____ was a predecessor of Darwin and he developed the theory of acquired characteristics.
a) Weismann b) Mendel c) Malthus d) Lamarck
- 8 Which of these is not a living fossil?
a) Archaeopteryx b) Duck-billed platypus c) Lungfish d) Frog
- 9 Which of the following are not the examples of analogous structures?
a) Wings of bat and butterfly.
b) Wings of bat and forelimb of cattle.
c) Thorn and spine.
d) Tendril of Lathyrus and tendril of Gloriosa.
- 10 The scientist who cut off the tails of mice of successive generations to prove Lamarck's theory was wrong was _____.
a) Weismann b) Haeckel c) Darwin d) Wallace
- 11 Human being belongs to the species of _____.
a) Homo erectus
b) Homo habilis
c) Homo sapiens
d) Hominidae
- 12 Links between organisms that show branching pattern of evolutionary relationships are shown by _____.
a) living fossils
b) comparative embryology
c) phylogenetic trees
d) two fossil layers
- 13 Speciation is the evolutionary process by which _____.
a) a new gene pool is formed
b) evolutionary paths of species converge
c) hybrid species formed
d) Shows up differences in physical traits
- 14 Evidences of evolutionary relationships is found in _____.
a) atmosphere
b) fossils
c) ocean beds
d) rocks

Questionbank Biology

15. Which of the following is not a source of variation in a population?
- A. Inherited genetic differences.
 - B. Differences due to health.
 - C. Differences due to age.
 - D. None of the above.
16. Which of the following examples of variation is not important from an evolutionary standpoint?
- A. Genetic differences between individual organisms comprising the population.
 - B. Inherited differences between individual organisms comprising the population.
 - C. Differences due to diet, health, age or accident that have no affect on an individual's ability to survive and reproduce.
 - D. A and B.
17. Why is genetic variation important from an evolutionary standpoint?
- A. If all organisms were the same, the entire population would be vulnerable to particular pathogens, like viruses.
 - B. All evolutionary adaptations (e.g. the origin of forelimbs) are the result of the gradual build up of genetic differences between organisms over geologic time.
 - C. Evolution (at the population level) refers to changes in the frequencies of genes in the population over time.
 - D. All of the above.
18. Which of the following is an example of genetic variation?
- A. Two children have different eye colors.
 - B. One person is older than another.
 - C. One person has a scar, but her friend does not.
 - D. Tod eats meat, but his brother Rod is a vegetarian.
19. Which of the following is an example of environmental variation?
- A. Apu is a tongue roller, but his brother Sanjay is not.
 - B. Marge dyes her hair blue.
 - C. Homer inherited baldness from his father's side of the family.
 - D. Patti and Selma have hanging ear lobes.
20. What's the difference between natural selection and sexual selection?
- A. Sexual selection occurs during sex.
 - B. Natural selection is a type of sexual selection.
 - C. Sexual selection is a type of natural selection.
 - D. Sexual selection occurs within demes, natural selection does not.
21. What's the difference between genetic drift and change due to natural selection?
- A. Genetic drift does not require the presence of variation.
 - B. Genetic drift does not involve competition between members of a species.
 - C. Genetic drift never occurs in nature, natural selection does.
 - D. There is no difference.

Questionbank Biology

22. According to our reading, how did George Cuvier account for extinctions in nature?
- A. Extinctions never occur--there are unexplored parts of the globe where organisms that appear to have gone extinct may still live.
 - B. Extinctions occur when the slow adaptation of organisms over time to their environment is not quick enough to help them respond to changing conditions.
 - C. Extinctions occur at random, they do not reflect God's will.
 - D. Extinctions are due to catastrophic events.
23. Why, according to our reading, did Darwin take so long to publish the Origin of Species?
- A. Darwin wanted to share his theory as quickly as possible once he returned from his voyage on the Beagle.
 - B. It took twenty years for Darwin to develop a theory.
 - C. Darwin suffered from a number of illnesses.
 - D. Darwin was concerned about the reaction of others to the implications of his theory.
24. In which of the following ways is natural selection not analogous to artificial selection?
- A. With natural selection "picking" is due to the fit of an organism with its environment; whereas in artificial selection, the breeder "picks" which organisms will breed.
 - B. Natural selection depends upon the presence of variation, artificial selection does not.
 - C. Natural selection occurs within populations, artificial selection does not.
 - D. There is a limit to how much change can be brought about by natural selection, no such limit exists for artificial selection.
25. Why is the advent of reproductive isolation important from an evolutionary standpoint?
- A. When the organisms comprising two populations of a species can no longer interbreed, the flow of genetic material between them stops.
 - B. It is not important from an evolutionary standpoint. The question is based on a false assumption.
 - C. Reproductive isolation increases the mutation rate.
 - D. Reproductive isolation may slow reproduction.
26. If the theory of natural selection is the survival of the fittest, and the fittest are identified as those who survive, why isn't it regarded as a tautology (a statement that is true only because of the meaning of the terms) ?
- A. The effect of traits on the fitness of an organism can be assessed independently of whether the organism indeed survives .
 - B. It is regarded as a tautology - the question is based on a false assumption.
 - C. There may be some statements in science that are useful even if they are not falsifiable or refutable in principle.
 - D. A and C.
27. The variation natural selection operates on is due to random mutations. What does this imply about natural selection?
- A. Natural selection is also a random process.
 - B. Natural selection is nevertheless a directed process- the likelihood one variant will be favored in a given environment over another is predictable, even if the origin is not.

Questionbank Biology

- C. There is no possibility God could be involved in this process.
D. A, B and C.
28. How was Mendel's work ultimately reconciled with Darwin's theory of natural selection during the evolutionary synthesis in the 1930s and 1940s?
- A. Scientists recognized that once one thinks about species as populations, rather than individuals, there is no incompatibility between them.
B. Mendel's theory was replaced by the mutation theory.
C. It was recognized much of the variation we observe in nature is due to recombination, rather than mutation.
D. A and C.
29. Which of the following is the evidence for Darwin's theory of common descent?
- A. There are patterns in the fossil record that suggest other species have diverged from a single ancestor species.
B. There are biogeographic patterns in the distribution of species, for instance distinct bird species on an island tend to resemble one another, suggesting a common ancestor.
C. There are common stages in the early embryological development of organisms representing several distinct vertebrate groups.
D. All of above
30. What is the relationship between the wing of a bird and the wing of a bat?
- A. They are homologous because they represent modified forms of a trait present in a common ancestor (forelimbs).
B. They are analogous because while each carries out the same function (flight), this trait has arisen independently as a result of convergence (i.e. the common ancestor of both did not have a forelimb that allowed it to fly).
C. A and B.
D. They represent derived homologies.
31. Which of the following is not an example of a macro evolutionary process?
- A. One lion species splits to form two lion species over geological time.
B. The same trait evolves independently in two different taxa (e.g. wings in birds and in insects).
C. As a result of their activities, humans drive Dodos (a bird species) extinct.
D. Over a short period of time, the frequency of a single gene declines from 10 to 8%.
32. Which of the following is an example of an ancestral homology?
- A. Almost all modern reptiles, birds and mammals have forelimbs, a trait they also share with contemporary amphibians.
B. The first birds and all their descendant species have feathers, a trait that is unknown in any other group.
C. Humans and many insect species have eyes.
D. All of the above.
E. None of the above.

Questionbank Biology

33. Which of the following is not an example of micro evolutionary change?
- A. The dark form of many moth species has increased in areas darkened by pollution.
 - B. Penicillin resistant forms of bacteria have arisen since the introduction of antibiotics.
 - C. The proportion of left and right bending moths in cichlid fish remains roughly 50:50.
 - D. The last American eagle dies off, leading to the extinction of the species.
34. Which of the following are difficult to explain in terms of natural selection?
- A. Male peacocks evolve tail feathers that would appear to make them more rather than less vulnerable to predators.
 - B. Male deer evolve antlers that are not used to defend themselves against predators.
 - C. A bird issues a warning cry that puts it at greater risk of being noticed by a predator.
 - D. Some traits appear to have no adaptive value.
35. Which of the following is not an example of a monophyletic taxon?
- A. The first fish species and every living organism that looks like a fish .
 - B. The first mammal species and all its descendants.
 - C. The first bird species and all its descendants.
 - D. All of the above.
36. Which of the following are kingdoms?
- A. Monera .
 - B. Protista.
 - C. Animalae.
 - D. All of the above.
37. Which of the following must increase over geological time according to evolutionary biologists?
- A. Size .
 - B. Complexity .
 - C. Speed of evolutionary processes such as mutation.
 - D. All of the above.
38. Why is similarity misleading when it comes to inferring evolutionary relationships?
- A. Organisms that look alike may be very distantly related to one another.
 - B. Similarities between two species may be due to common descent, without indicating how closely the two are related to one another.
 - C. A and B only.
 - D. The presence of a shared derived character state is often misleading when it comes to inferring relationships between species .
39. Which of the following are the most distantly related to one another?
- A. Sunfish and dolphins.
 - B. Tree frogs and snakes.
 - C. Vampire bats and birds.
 - D. Bears and whales.

Questionbank Biology

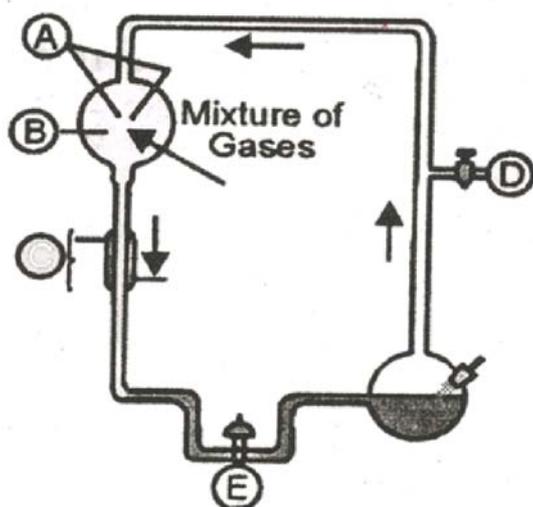
40. How does an evolutionary biologist explain why a species of birds has evolved a larger beak size?
- A. Large beak size occurred as a result of mutation in each member of the population.
 - B. The ancestors of this bird species encountered a tree with larger than average sized seeds. They needed to develop larger beaks in order to eat the larger seeds, and over time, they adapted to meet this need.
 - C. Some members of the ancestral population had larger beaks than others. If larger beak size was advantageous, they would be more likely to survive and reproduce. As such, large beaked birds increased in frequency relative to small beaked birds.
 - D. The ancestors of this bird species encountered a tree with larger than average sized seeds. They discovered that by stretching their beaks, the beaks would get longer, and this increase was passed on to their offspring. Over time, the bird beaks became larger.
41. How might an evolutionary biologist explain why a species of species of salamander becomes blind after colonizing a cave?
- A. It is possible that in the cave there is a source of pollution that increases the mutation rate for a gene that makes salamanders blind. Over time, due to exposure to this chemical, the members of the population lose their sight.
 - B. Members of the ancestral population that colonized the cave differed in their ability to see. If maintaining the ability to see in the cave was a waste of energy, blind salamanders might actually have more offspring than those who could see.
 - C. There is no way to explain this in terms of natural selection
 - D. The members of this salamander species no longer needed to use their eyes. Over time, due to lack of use, they lost the ability to see.
42. Which of the following is the most fit in an evolutionary sense?
- A. A lion who is successful at capturing prey but has no cubs.
 - B. A lion who has many cubs, eight of which live to adulthood.
 - C. A lion who overcomes a disease and lives to have three cubs.
 - D. A lion who cares for his cubs, two of who live to adulthood.
43. How is extinction represented in a tree diagram?
- A. A branch splits.
 - B. A branch ends.
 - C. A branch shifts along the X axis.
44. A biologist is trying to infer how five closely related species of snakes are related to one another. She notices that some of the snakes have forked tongues and others do not. Which of the following would help her distinguish the ancestral state?
- A. She looks among snake fossils for evidence that being forked is a characteristic of the ancestor of this group, but determines no such fossils exist.
 - B. She locates a specimen of a more distantly related snake to see if it has a forked tongue.
 - C. She looks at a representative mammal species to see if it has a forked tongue.
 - D. She flips a coin.

Questionbank Biology

- D. A branch shifts along the Y axis.
45. The surface temperature of the sun is _____.
(A) 6000° C (B) 9000° C (C) 1000° C (D) 10,000° C
46. The earth like other planets formed from _____.
(A) aggregates of uranium (B) cloud of gas and dust
(C) division of pre-existing planets (D) collisions of meteorites
47. The experiment to show the production of mice in 21 days from a dirty shirt placed in contact with kernels of wheat was carried out by _____.
(A) Francesco Redi (B) Jean Baptiste Van Helmont
(C) Aristotle (D) Louis Pasteur
48. The first formed organism (riboorganism) used only for catalyzing reactions.
(A) DNA (B) amino acids (C) fatty acids (D) RNA
49. Anaerobic photosynthetic bacteria appeared on the earth about _____.
(A) 500 million years ago (B) 1500 million years ago
(C) 2500 million years ago (D) 3500 million years ago
50. The sequence of origin of life may be considered as _____.
(A) Amino acid → Protein → Chlorophyll
(B) Chlorophyll → Starch → Glycogen
(C) Nucleic acid → Amino acid → Chlorophyll
(D) Chlorophyll → Nucleic acid → Amino acid
51. The primitive cell-like colloidal particles capable of growth and division were _____.
(A) prokaryotes (B) coacervates (C) eobionts (D) chemoautotrophs
52. The stage for the evolution of autotrophs was set with the evolution of _____.
(A) RNA (B) DNA (C) ozone (D) chlorophyll
53. The first organism to be found on a bare rock is a (an) _____.
(A) moss (B) alga (C) lichen (D) fern
54. The doctrine of evolution is concerned with _____.
(A) gradual changes (B) abiogenesis (C) biogenesis (D) none of the above
55. The era called 'age of prokaryotic microbes' is _____.
(A) archaean (B) precambrian (C) phanerozoic (D) proterozoic
56. To determine which molecules might have formed spontaneously on early earth, Stanley Miller used an apparatus with an atmosphere containing _____.
(A) oxygen, hydrogen and nitrogen
(B) oxygen, hydrogen, ammonia and water vapour
(C) oxygen, hydrogen and methane
(D) hydrogen, ammonia, methane and water vapour
57. The utilization of elements and compounds in nature generation theory because _____.
(A) life cycles (B) cyclic pathway (C) material cycles (D) recycling

Questionbank Biology

58. What is ethnobotany ?
 (A) Relationship between primitive plants and people
 (B) Study to soil
 (C) Cultivation of flower yielding plants
 (D) Use of plants and their parts
59. The first photoautotroph organisms were _____.
 (A) bryophytes (B) algae
 (C) cyanobacteria (D) bacteria
60. Who performed this famous experiment to prove origin of life ?
 (A) Oparin and Haldane (B) Spallanzani and Pasteur
 (C) Urey and Miller (D) Fox and Pasteur
61. How much temperature was used for the gases to react ?
 (A) 10° C (B) 130° C (C) 1000° C (D) 50°C
62. What was the mixture of gases used in chamber marked A ?



- (A) Methane (CH₄), ammonia (NH₃), hydrogen (H₂), and water (H₂O)
 (B) Oxygen (O₂), ammonia (NH₃), hydrogen (H₂), and water (H₂O)
 (C) Oxygen (O₂), ozone (O₃), hydrogen (H₂), and water (H₂O)
 (D) all above
63. What was the resultant found in place marked E ?
 (A) Glucose, fatty acids and lipids
 (B) Some fatty acids and organic acids
 (C) Some amino acids as glycine and alanine and
 (D) Organic esters only

Questionbank Biology

64. Match the appropriate :

Column – I	Column – II
A. Cosmozoan theory	(i) Oxidizing environment rich in autotrophs like cyanobacteria
B. Spontaneous generation	(ii) Microspheres
C. Primary abiogenesis	(iii) Hot ball of gases
D. Atmosphere I	(iv) Oparin and Haldane
E. Atmosphere III	(v) Panspermia
F. Sydney Fox	(vi) Abiogenesis

A	B	C	D	E	F	A	B	C	D	E	F		
(A)	(v)	(vi)	(iv)	(iii)	(i)	(ii)	(B)	(i)	(ii)	(iii)	(iv)	(v)	(vi)
(C)	(ii)	(iii)	(i)	(v)	(vi)	(iv)	(D)	(vi)	(iv)	(iii)	(v)	(ii)	(i)

65. A. The first molecules formed for replicating cells were most probably RNA.

R. This was proved by origin of ribozyme in 1987 by T. Cech in Tetrahymena.

- (A) If A and R both are true and R is correct explanation of A
 (B) If A and R both are true but R is not correct explanation of A
 (C) If A is true and R is wrong
 (D) If A is wrong and R is true

66. Pick up the correct match

- | | |
|-----------------------|----------------------------------|
| I. Core of the earth | A. Archaeozoic era |
| II. Life originated | B. Fe-Ni |
| III. Stromatolites | C. Inter-micromolecular assembly |
| IV. TMC is an example | D. Photosynthesizing algae |

- (A) I – B, II – A, III – D, IV – C (B) I – A, II – B, III – C, IV – D
 (C) I – B, II – D, III – C, IV – A (D) I – A, II – B, III – D, IV – C

67. A. Arrhenius considered the panspermia mainly responsible for transfer for germs from other planets to Earth.

R. Present day study of meteorities as Allan Hills-84001 knocked out from Mars in Antarctica is rich aromatic hydrocarbons deposited by biological activity.

- (A) If A and R both are true and R is correct explanation of A
 (B) If A and R both are true but R is not correct explanation of A
 (C) If A is true and R is wrong
 (D) If A is wrong and R is true

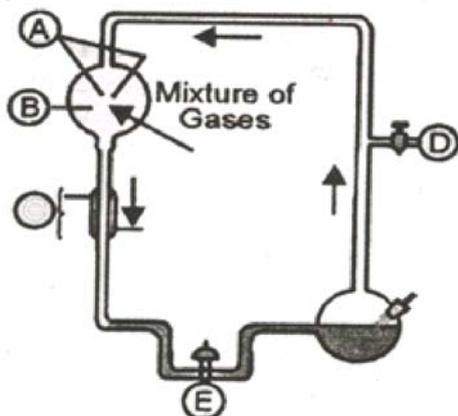
68. A. The first molecules formed for replicating cells were most probably RNA.

R. This was proved by origin of ribozyme in 1987 by T. Cech in Tetrahymena.

- (A) If A and R both are true and R is correct explanation of A
 (B) If A and R both are true but R is not correct explanation of A
 (C) If A is true and R is wrong
 (D) If A is wrong and R is true

Questionbank Biology

69. Coacervates are
 (A) colloidal droplets (B) contain nucleoprotein (C) (A) and (B) (D) protobiont
70. The diagram represents Miller experiment. Choose the correct combination of labelling.



- (A) A – electrodes, B – $\text{NH}_3 + \text{H}_2 + \text{H}_2\text{O} + \text{CH}_4$, C – cold water, D – Vacuum, E – U trap
 (B) A – electrodes, B – $\text{NH}_4 + \text{H}_2 + \text{CO}_2 + \text{CH}_3$, C – hot water, D – Vacuum, E – U trap
 (C) A – electrodes, B – $\text{NH}_3 + \text{H}_2\text{O}$, C – hot water, D – tap, E – U trap
 (D) A – electrodes, B – $\text{NH}_3 + \text{H}_2 + \text{H}_2\text{O} + \text{CH}_4$, C – steam, D – Vacuum, E – U trap
71. The earliest organisms were _____.
 (A) heterotrophic and anaerobic (B) autotrophic and anaerobic
 (C) heterotrophic and aerobic (D) autotrophic and aerobic
72. Which one of the following is present today but was absent about 3.5 billion years ago ?
 (A) Oxygen (B) Nitrogen (C) Hydrogen (D) Methane
73. Coacervates were experimentally produced by
 (A) Sydney Fox and Oparin (B) Fischer and Huxley
 (C) Jacob and Monod (D) Urey and Miller
74. Urey and Miller in their experiment used a mixture of gases corresponding to primitive earth. These were _____.
 (A) C_3 , NH_3 , H_2 , CO_2 (B) O_2 , NH_3 , CH_4 , H_2
 (C) NH_3 , CH_4 , H_2O , CO_2 (D) CH_4 , NH_3 , H_2 , H_2O
75. According to abiogenesis life originate from _____.
 (A) non-living matter (B) pre-existing life
 (C) chemicals (D) extra-terrestrial matter
76. Mega – evolution is _____.
 (A) Changes in the gene pool
 (B) evolution due to mutations
 (C) origin of a new biological group
 (D) the evolution that takes centuries

Questionbank Biology

77. Evolutionary convergence is characterised by
(A) development of dissimilar characteristics in closely related groups
(B) development of a common set of characteristics in the groups of different ancestry
(C) development of characteristics by random mating
(D) replacement of common characteristics in different groups.
78. Parallelism is _____.
(A) adaptive divergence
(B) adaptive convergence
(C) adaptive convergence of far off species
(D) adaptive convergence of closely related groups.
79. Mesozoic era is associated with mass extinction of _____.
(A) flowering plants (B) trilobites (C) Dodo (D) dinosaurs
80. Serial homology is exhibited by _____.
(A) Organs of same individual occupying different levels of the body
(B) Organs of different organisms with same function
(C) appendages of various parts of prawn body
(D) both (A) and (C)
81. Vermiform appendix in man, nictitating membrane and wisdom teeth are _____.
(A) homologous organs (B) analogous organs
(C) vestigial organs (D) none of the above
82. Which one of the following terms would most correctly describe the relationship between the flight organs of animals like locust, bat, swallow, and flying fish ?
(A) Atavism (B) Analogous (C) Homologous (D) Vestigial
83. Appearance of facial hair in some people is an example of
(A) mongolism (B) analogous organs (C) atavism (D) all above
84. A living connecting link which provides evidence for organic evolution is _____.
(A) Archeopteryx between reptiles and mammals
(B) lung fish between pisces and reptiles
(C) duck billed platypus between reptiles and mammals
(D) Sphenodon between reptiles and birds
85. Von baer supports the theory of evolution on the basis of
(A) embryological character (B) germs layers
(C) somatic variations (D) genetic variations
86. Which of the following bird will be called most successfully evolved ?
(A) Lays 2 eggs, 2 hatch and 2 reproduce
(B) Lays 9 eggs, 9 hatch and 3 reproduce
(C) Lays 5 eggs, 5 hatch and 5 reproduce
(D) Lays 10 eggs, 5 hatch and 4 reproduce

Questionbank Biology

87. Biogenetic law states that _____.
(A) ontogeny repeats phylogeny (B) phylogeny repeats ontogeny
(C) no two living organisms are alike (D) the favourable acquired characters are inherited
88. A study of evolution has established the systematic positions in many animals. In some animals chordate characters are absent in adult stage, but present in larval stage, eg. Herdmania has been included in _____.
(A) crustacea (B) protochordata (C) dermaptera (D) onychophora
89. Many of the animals and plants found on islands are _____.
(A) endemic (B) exotic (C) sympatric (D) none of these
90. The Haeckel's theory of biogenetic Law means that _____.
(A) all organisms start as an egg
(B) life history of an organism reflects its evolutionary history
(C) nonliving matter from life
(D) progeny resembles parents
91. The best way of dating fossils recent origin is by _____.
(A) radio carbon method (B) uranium lead method
(C) potassium argon method (D) a combination of all these
92. The age of rock is calculated on the basis of _____.
(A) types of fossils present (B) number of strata present
(C) amount of uranium present (D) none above
93. It is not a true fossil.
(A) Placoderm (B) Limulus (C) Archeopteryx (D) Therapsid
94. all mammals, whale, dolphin, bat, monkey and horse have some common trait, but they also show conspicuous differences. This is due to the phenomenon of
(A) normalisation (B) genetic drift (C) convergence (D) divergence
95. These are some examples of vestigial structures in man
(A) wisdom tooth vermiform appendix, hair
(B) wisdom tooth, vermiform appendix, coccyx
(C) wisdom tooth, head, nails
(D) none of these
96. Precipitation test gives evidence from _____.
(A) comparative embryology (B) comparative anatomy
(C) comparative serology (D) none above
97. In external appearance the krait and lycodon are indistinguishable. This is an example of
(A) analogy (B) imitation (C) mimicry (D) homology
98. Postanal tail can be traced in _____.
(A) cobra (B) earthworm (C) scorpion (D) centipede

Questionbank Biology

99. The Jurassic period belongs to the era.
 (A) proterozoic (B) archezoic
 (C) mesozoic (D) cenozoic
100. Which of the following cannot determine phylogenetic relationships ?
 (A) Physiology (B) Morphology
 (C) Biogeography (D) Embryology
101. Mark the correct set.
- | Column I | Column II |
|--|---------------------------------|
| I. Slow evolution | A. Non-progressive |
| II. Environment is responsible for evolution | B. Aristotle |
| III. Homologous | C. Bird wing and butterfly wing |
| IV. Analogous organ | D. Wing of bird and hose limb |
- (A) I – A, II – B, III – D, IV – C (B) I – B, II – A, III – D, IV – C
 (C) I – B, II – A, III – C, IV – D (D) I – B, II – C, III – D, IV – A
102. A. Ear muscles of external ear in man are poorly developed
 R. These muscles are useful which move external ear freely to detect sound efficiently.
 (A) If A and R both are true and R is correct explanation of A
 (B) If A and R both are true but R is not correct explanation of A
 (C) If A is true and R is wrong
 (D) If A is wrong and R is true
103. Mesozoic era is called golden period of _____.
 (A) birds (B) amphibians (C) reptiles (D) pisces
104. Which of the following leads to evolution ?
 (A) Separation of species leading to evolution
 (B) Differentiation of species
 (C) Loss of few advanced characters
 (D) Differentiation and adaption of species as unique entities
105. Evolution and natural selection is demonstrated by
 (A) DDT resistance in mosquito
 (B) sickel cell anaemia in pygmies
 (C) industral melanism
 (D) all above
106. An important evidence in favour of organic evolution is the occurence of
 (A) homologous and analogous organs
 (B) homologous and vestigial organs
 (C) analogous and vestigial organs
 (D) homologous organs only

Questionbank Biology

107. Potato and sweet potato _____.
(A) have edible parts which are homologous organs
(B) have edible part which are analogous organs
(C) have been introduced in India from the same place
(D) None of the above
108. Which one is not a vestigial organ in man ?
(A) Wisdom teeth (B) Muscles of external ear-pinna
(C) Fossa ovalis (D) Ileum
109. The tracking of evolutionary history of organisms is _____.
(A) ontogeny (B) phylogeny (C) analogy (D) homology
110. An old view about evolution states that the organisms were created by a super organism in the same condition as they exist now. This theory is called _____.
(A) theory of special creation (B) theory of natural selection
(C) Lamarck's theory of evolution (D) theory of spontaneous generation
111. Who gave evolutionary concept of determinants ?
(A) Dobzhansky (B) Wright (C) Weismann (D) Lamarck
112. Darwin's theory of natural selection is objected, because it
(A) stresses upon slow and small variations
(B) explains the adaption of certain inherited characters
(C) stresses on interspecific competition
(D) explains that natural calamities take a heavy annual toll of lives
113. Given : 1 = natural selection ; 2 = variations and their inheritance ; 3 = survival of the fittest ; 4 = struggle for existence. According to Darwinism, which of the following represents the correct sequence of events in the origin of new species ?
(A) 1, 2, 3, 4 (B) 2, 3, 1, 4
(C) 3, 4, 1, 2 (D) 4, 2, 3, 1
114. Theory of Lamarck was based on
(A) adaptive collisions (B) adaptive radiations
(C) adaptive modifications (D) none of these
115. Darwin's natural selection is based on
(A) variations
(B) prodigality, struggle for existence, survival of fittest
(C) law of use and disuse
(D) law of inheritance of acquired characters
116. Industrial melanism is an example of
(A) natural selection (B) mutation
(C) adaptive convergence (D) artificial selection

Questionbank Biology

117. Which statement is correct ?
- (A) Lamarck theory – Struggle for existence
 - (B) Darwin theory – Use and disuse of organ
 - (C) Biogenetic law – Recapitulation theory
 - (D) Lamarck theory – Theory of continuity of germplasm
118. Match the correct set.
- | Column I | Column II |
|---------------------------------------|-------------------------|
| I. Modified form of Lamarckism | A. G.L. Stebbins (1950) |
| II. Variation and evolution in plants | B. Neo- Lamarckism |
| III. Germinal selection theory | C. Etienne Geoffroy |
| IV. Supporter of Lamarck's theory | D. August Welsmann |
- (A) I – A, II – B, III – C, IV – D
 - (B) I – D, II – B, III – C, IV – A
 - (C) I – A, II – B, III – D, IV – C
 - (D) I – D, II – A, III – C, IV – B
119. A. Mutations occurring in the germinal cells of the gonads are called germs mutations.
R. They are heritable raw materials for natural selection lead to origin of new species.
- (A) If A and R both are true and R is correct explanation of A
 - (B) If A and R both are true but R is not correct explanation of A
 - (C) If A is true and R is wrong
 - (D) If A is wrong and R is true
120. A. All the finches on the Galapagos Islands descended from common ancestor.
R. They show variations only in their beaks as they got adapted to different feeding habits.
- (A) If A and R both are true and R is correct explanation of A
 - (B) If A and R both are true but R is not correct explanation of A
 - (C) If A is true and R is wrong
 - (D) If A is wrong and R is true
121. Cosmozoic theory was given by _____.
- (A) Darwin
 - (B) Richter
 - (C) Aristotle
 - (D) Von Baer
122. Which one of the following phenomena supports Darwin's concept of natural selection in organic evolution ?
- (A) Development of transgenic animals
 - (B) Production of 'Dolly' the sheep by cloning
 - (C) Prevalence of pesticide resistant insects
 - (D) Development of organs from 'stem cells' for organ transplantation
123. Retrogressive evolution is shown by _____.
- (A) man
 - (B) birds
 - (C) tunicates
 - (D) fish

Questionbank Biology

124. Match the correct set.

Column I

- I. Fossil
- II. Devonian period
- III. Cambrian period
- IV. Ordovician period

Column II

- A. 345-405 million years ago
- B. Fossilium
- C. 425-500 million years ago
- D. 500-600 million years ago

- (A) I – B, II – A, III – D, IV – C
- (B) I – A, II – B, III – C, IV – D
- (C) I – B, II – C, III – D, IV – A
- (D) I – B, II – D, III – C, IV – A

125. A. Genetic drift refers to change in allelic frequencies of a gene pool due to chance and occurs both in large and small populations.

R. Small populations will, therefore, suffer more than larger ones.

- (A) If A and R both are true and R is correct explanation of A
- (B) If A and R both are true but R is not correct explanation of A
- (C) If A is true and R is wrong
- (D) If A is wrong and R is true

126. In a population, group of individuals of similar phenotypes are formed due to differential reproduction due to

- (A) genetic drift (B) natural selection
- (C) migration (D) selective hybridization

127. Phylogenetic evolution refers to

- (A) genetic relationship and evolutionary sequence
- (B) similar habitat
- (C) natural affinity of genes
- (D) similar character

128. Genetic drift occurs when few individuals of a colonize, the phenomenon is

- (A) bottleneck effect (B) assortative mating (C) founder's effect (D) random mating

129. Sympatric speciation arises due to

- (A) non-overlapping population of the same area
- (B) geographical isolation
- (C) overlapping population of the same area
- (D) non-reproductive population of the same area

130. Hardy – Weinberg equilibrium is known to be effected by gene flow, genetic drift, mutation, genetic recombination and

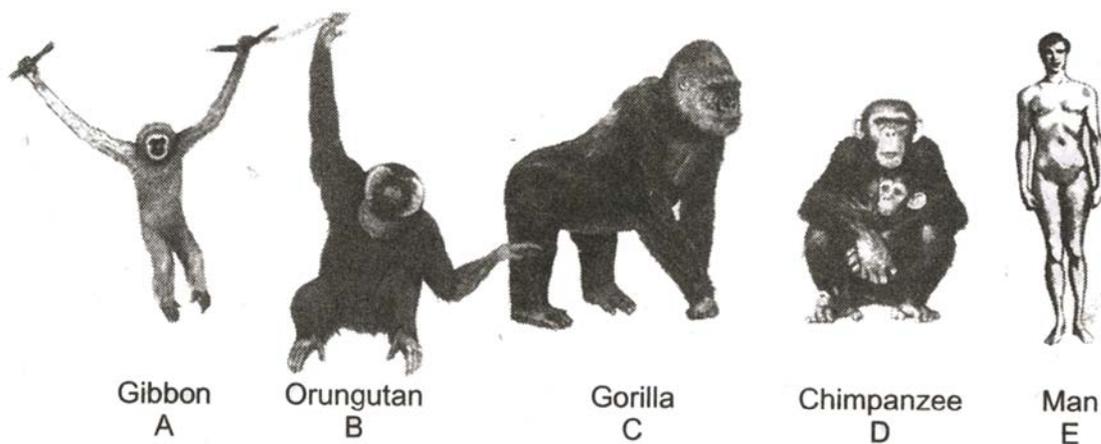
- (A) evolution
- (B) limiting factor
- (C) saltation
- (D) natural selection

Questionbank Biology

131. Assertion : According to Hardy – Weinberg Equilibrium, the frequency of an allele remains the same generation after generation.
Reason : The only way to bring about a change is by natural selection.
(A) A is correct and R is its explanation.
(B) A and R both are correct but R is not an explanation to A
(C) A is correct and R is false
(D) A is false and R is correct
132. Which is not applicable to the Biological species concept ?
(A) hybridization (B) natural population
(C) reproductive isolation (D) gene pool
133. Mass extinction of the end of Mesozoic era was probably due to ?
(A) continental drift (B) the collision of earth with large meteorites
(C) massive glaciations (D) change in earth's orbit
134. Apes share blood groups with man
(A) A, B, AB (B) A, B, O (C) AB, O (D) A and B only
135. Present age of human known as _____.
(A) atomic age (B) iron age (C) bronze age (D) silver age
136. Who was the first civilized man ?
(A) Cro-magnon man (B) Neanderthal man
(C) Java ape man (D) Peking man
137. Leakey and Leakey discovered the fossils of _____.
(A) apeman (B) erect man
(C) Peking man (D) the tool maker
138. The correct sequence of course of cultural evolution from cromagnon to modern man is
(A) Palaeolithic – Mesoethic – Neolithic – Bronze – Iron – Atomic
(B) Mesoethic – Bronze – Neolithic – Iron – Atomic
(C) Palaeolithic – Neolithic – Iron – Bonze – Atomic
(D) None above
139. Neanderthal man differs from modern man is _____.
(A) receeding jaw (B) protuding jaw
(C) could make good tools (D) could make good picture
140. 'Piltdown man' is
(A) Hemo habilis (B) Eoanthropus
(C) Homo sapiens (D) Pithecanthropine
141. The most recent in human evolution is _____.
(A) mesolithic (B) neolithic
(C) upper palaeolithic (D) middle palaeolithic

Questionbank Biology

142. Which one of the following statement is correct ?
 (A) Homo erectus is the ancestor of man
 (B) Fossils of Cro – magnon has been found in Ethopia
 (C) Australopithecus is the real ancestor of modern man
 (D) Neanderthal man is the direct ancestor of Homo sapience
143. The evolution of genera ‘Homo’ occured in
 (A) pleistocene (B) pliocene (C) miocene (D) oilgocene
144. Closest primate to man is _____.
 (A) gorilla (B) rhesus monkey (C) orangutan (D) lemur
145. Which is correct according to cranial capacity from the figure given as examples ?



- (A) A = 104 cc, B = 355 cc, C = 500 cc, D = 405 cc, E = 1400 cc
 (B) A = 355 cc, B = 104 cc, C = 500 cc, D = 405 cc, E = 1400 cc
 (C) A = 104 cc, B = 355 cc, C = 405 cc, D = 500 cc, E = 1400 cc
 (D) A = 355 cc, B = 104 cc, C = 405 cc, D = 500 cc, E = 1400 cc
146. Match the correct set

Column – I	Column – II
A. Old world monkeys	1. Tree shrews, the ancestors of primates
B. New world monkeys	2. Wide nistrils and prehensile tail
C. Prosimians	3. Narrow nostrils and non prehensile tail
D. Simians	4. Monkey and apes
A B C D	A B C D
(A) 2 3 1 4	
(B) 3 2 1 4	
(C) 2 1 3 4	
(D) 1 3 2 4	

Questionbank Biology

147. Match the features from the columns

Column – I

- A. Ape like primate
 B. Ancestor of modern apes
 C. Connecting link between ape and man
 D. First to use fire

Column – II

1. Homo erectus
 2. Australopithecus
 3. Dryopithecus
 4. Propliopithecus

A B C D

(A) 3 4 2 1

(C) 3 4 1 2

A B C D

(B) 4 3 2 1

(D) 4 2 1 3

148. A. Java man and peking men were called Homo erectus by Mayer.

R. They appeared same as both used fire.

(A) A is correct and R is its explanation.

(B) A and R both are correct but R is not an explanation to A

(C) A is correct and R is false

(D) A is false and R is correct

149. A. From evolutionary point of view, human gestation period is believed to be shortening.

R. One major evolutionary trend in humans has been the larger head undergoing relatively faster growth rate in the foetal stage.

Read the above statement the answer according

(A) If A and R both one correct and R is an explanation to A

(B) If A and R both are correct and R is an explanation to A

(C) If A is correct and R is wrong

(D) If A is wrong and R is correct

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

(A) Greater variation in Africa than in Asia

(B) Variation only in Asia and no variation in Africa

(C) Greater variation in Asia than in Africa

(D) Similar variation in Africa and Asia

151. The first man to use fire was _____.

(A) neanderthal man (B) Homo erectus (C) cro-magnon man (D) Australopithecus

152. A human species who were more intelligent than the present human beings

(A) Ramapithecus (B) Australopithecus africanus

(C) Homo erectus (D) Homo fossilis

153. Human evolution actually started in _____.

(A) France (B) America (C) Central Asia (D) Africa

Questionbank Biology

154. Peking man is known as _____.
(A) Australopithecus (B) Sinanthropus (C) Pithecanthropus (D) Homo sapiens
155. Which of the following is correct match regarding cranial capacity and location of respective fossil
(A) Australopithecus – Africa (450 600 CC) (B) Java man – Germany (800 CC)
(C) Neanderthal – Africa (500–600 CC) (D) Homo sapiens – South east Asia
156. Which one of the following ancestors of man first time showed bipedal movement ?
(A) Australopithecus (B) Cro-magnon (C) Java apeman (D) Peking man
157. One of the oldest, best preserved and most complete hominid fossil commonly known as ‘Lucy’ belongs to the genus.
(A) Oreopithecus (B) Dryopithecus (C) Pithecanthropus (D) Australopithecus

Questionbank Biology

ANSWER KEY

1 D	2 B	3 A	4 B	5 D	6 A
7 D	8 A	9 B	10 A	11 C	12 C
13 A	14 B	15 D	16 C	17 D	18 A
19 B	20 C	21 B	22 D	23 D	24 A
25 A	26 D	27 B	28 D	29 D	30 C
31 D	32 A	33 D	34 D	35 A	36 D
37 D	38 C	39 A	40 C	41 B	42 B
43 B	44 B	45 A	46 B	47 B	48 D
49 D	50 C	51 C	52 D	53 C	54 C
55 A	56 D	57 C	58 A	59 D	60 C
61 B	62 A	63 C	64 A	65 A	66 A
67 A	68 A	69 C	70 A	71 A	72 A
73 D	74 D	75 A	76 C	77 D	78 D
79 D	80 D	81 C	82 B	83 C	84 C
85 A	86 C	87 A	88 B	89 A	90 B
91 D	92 C	93 B	94 D	95 B	96 C
97 C	98 A	99 C	100 B	101 A	102 C
103 C	104 D	105 D	106 B	107 B	108 D
109 B	110 A	111 B	112 B	113 C	114 B
115 A	116 C	117 C	118 C	119 A	120 B
121 C	122 B	123 A	124 A	125 A	126 A
127 C	128 D	129 D	130 A	131 D	132 A
133 C	134 C	135 D	136 A	137 A	138 A
139 A	140 D	141 D	142 A	143 B	144 A
145 A	146 C	147 B	148 A	149 D	150 C
151 B	152 D	153 D	154 B	155 A	156 A
157 D					

