

Evolution

7.1 Origin of Life

1. From his experiments, S.L. Miller produced amino acids by mixing the following in a closed flask.

 - (a) CH_4 , H_2 , NH_3 and water vapor at 800°C
 - (b) CH_3 , H_2 , NH_4 and water vapor at 800°C
 - (c) CH_4 , H_2 , NH_3 and water vapor at 600°C

(NEET 2020)

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

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

(a) I, II, III, IV (b) I, III, II, IV
(c) II, III, I, IV (d) II, III, IV, I

(NEET-II 2016)

(NEET-II 2016)

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

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

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

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

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

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

(c) (A) is correct but (B) is false.

(d) (B) is correct but (A) is false. (NEET-I 2016)

(NEET-I 2016)

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

 - (a) They were partially isolated from the surroundings.
 - (b) They could maintain an internal environment.
 - (c) They were able to reproduce.
 - (d) They could separate combinations of molecules from the surroundings. (2008)

- 5.** The concept of chemical evolution is based on
(a) interaction of water, air and clay under intense heat
(b) effect of solar radiation on chemicals
(c) possible origin of life by combination of chemicals under suitable environmental conditions
(d) crystallisation of chemicals. (2007)

6. Which of the following amino acids was not found to be synthesised in Miller's experiment?
(a) Alanine (b) Glycine
(c) Aspartic acid (d) Glutamic acid (2006)

7. Which one of the following experiments suggests that simplest living organisms could not have originated spontaneously from non-living matter?
(a) Larvae could appear in decaying organic matter.
(b) Microbes did not appear in stored meat.
(c) Microbes appeared from unsterilised organic matter.
(d) Meat was not spoiled, when heated and kept sealed in a vessel. (2005)

8. According to Oparin, which one of the following was not present in the primitive atmosphere of the earth?
(a) Methane (b) Oxygen
(c) Hydrogen (d) Water vapour (2004)

9. There is no life on moon due to the absence of
(a) O₂ (b) water
(c) light (d) temperature. (2002)

10. Most abundant organic compound on earth is
(a) protein (b) cellulose
(c) lipids (d) steroids. (2001)

11. 1st life on earth was
(a) cyanobacteria (b) chemoheterotrophs
(c) autotrophs (d) photoautotrophs. (2001)

12. The correct sequence for the manufacture of molecules/organic compounds on the primitive earth is
(a) NH₃, nucleic acid, protein and carbohydrate
(b) protein, carbohydrate, water and nucleic acid
(c) NH₃, protein, carbohydrate and nucleic acid
(d) NH₃, water, nucleic acid and protein.
(1996)

13. The first organisms were
(a) chemoautotrophs (b) chemoheterotrophs
(c) autotrophs (d) eukaryotes. (1992)

14. Which was absent in the atmosphere at the time of origin of life?
(a) NH₃ (b) H₂
(c) O₂ (d) CH₄ (1991)

7.2 Evolution of Life Forms - A Theory

15. Which one of the following sequences was proposed by Darwin and Wallace for organic evolution?
(a) Overproduction, variations, constancy of population size, natural selection
(b) Variations, constancy of population size, overproduction, natural selection
(c) Overproduction, constancy of population size, variations, natural selection
(d) Variations, natural selection, overproduction, constancy of population size (2003)

16. Darwin's theory of pangenesis shows similarity with theory of inheritance of acquired characters then what shall be correct according to it?
(a) Useful organs becomes strong and developed while useless organs become extinct.
(b) Size of organs increase with aging.
(c) Development of organs is due to will power.
(d) There should be some physical basis of inheritance. (2001)

7.3 What are Evidences for Evolution?

17. Which of the following refer to correct example(s) of organisms which have evolved due to changes in environment brought about by anthropogenic action?
(1) Darwin's Finches of Galapagos islands.
(2) Herbicide resistant weeds.
(3) Drug resistant eukaryotes.
(4) Man-created breeds of domesticated animals like dogs.
(a) only (1) (b) (1) and (3)
(c) (2), (3) and (4) (d) only (4) (NEET 2020)

18. Embryological support for evolution was disapproved by
(a) Karl Ernst von Baer (b) Alfred Wallace
(c) Charles Darwin (d) Oparin. (NEET 2020)

19. Flippers of penguins and dolphins are examples of
(a) adaptive radiation (b) convergent evolution
(c) industrial melanism (d) natural selection.
(NEET 2020)

20. The similarity of bone structure in the forelimbs of many vertebrates is an example of
(a) homology (b) analogy
(c) convergent evolution (d) adaptive radiation.
(NEET 2018)

21. Among the following sets of examples for divergent evolution, select the incorrect option.
(a) Forelimbs of man, bat and cheetah
(b) Heart of bat, man and cheetah
(c) Brain of bat, man and cheetah
(d) Eye of octopus, bat and man (NEET 2018)

22. Which of the following structures is homologous to the wing of a bird?
(a) Hindlimb of rabbit (b) Flipper of whale
(c) Dorsal fin of a shark
(d) Wing of a moth (NEET-I 2016)

23. Analogous structures are a result of
(a) shared ancestry (b) stabilising selection
(c) divergent evolution (d) convergent evolution.
(NEET-I 2016)

24. The wings of a bird and the wings of an insect are
(a) phylogenetic structures and represent divergent evolution
(b) homologous structures and represent convergent evolution
(c) homologous structures and represent divergent evolution
(d) analogous structures and represent convergent evolution. (2015)

25. Industrial melanism is an example of
(a) mutation (b) Neo-Lamarckism
(c) Neo-Darwinism (d) natural selection.
(2015)

26. 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) analogous organs
(b) adaptive radiation
(c) homologous organs
(d) convergent evolution. (2014)

27. Which one of the following are analogous structures?
(a) Wings of bat and wings of pigeon
(b) Gills of prawn and lungs of man
(c) Thorns of *Bougainvillea* and tendrils of *Cucurbita*
(d) Flippers of dolphin and legs of horse (2014)

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

- (a) non-random evolution
- (b) adaptive radiation
- (c) natural selection
- (d) convergent evolution.

(NEET 2013)

- 29.** The eye of octopus and eye of cat show different patterns of structure, yet they perform similar function. This is an example of
- (a) analogous organs that have evolved due to convergent evolution
 - (b) analogous organs that have evolved due to divergent evolution
 - (c) homologous organs that have evolved due to convergent evolution
 - (d) homologous organs that have evolved due to divergent evolution.
- (NEET 2013)

- 30.** Which one of the following options gives one correct example each of convergent evolution and divergent evolution?

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

(2012)

- 31.** 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.

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) of the fittest.
- (a) (D) – (i) small variations, (ii) survival,
 - (A) – (i) convergent
 - (b) (A) – (i) convergent,
 - (B) – (i) oxygen, (ii) nucleosides
 - (c) (B) – (i) water vapour, (ii) amino acids
 - (C) – (i) rudimentary, (ii) anatomical
 - (d) (C) – (i) vestigial, (ii) anatomical
 - (D) – (i) mutations, (ii) multiplication

(Mains 2010)

- 32.** *Peripatus* is a connecting link between

- (a) mollusca and echinodermata
- (b) annelida and arthropoda
- (c) coelenterata and porifera
- (d) ctenophora and platyhelminthes.

(2009)

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

- (a) appearance of the darker coloured individuals due to very poor sunlight
- (b) protective mimicry
- (c) inheritance of darker colour character acquired due to the darker environment
- (d) natural selection whereby the darker forms were selected.

(2009)

- 34.** Thorn of *Bougainvillea* and tendril of *Cucurbita* are examples of

- (a) vestigial organs
- (b) retrogressive evolution
- (c) analogous organs
- (d) homologous organs.

(2008)

- 35.** Which one of the following pairs of items correctly belongs to the category of organs mentioned against it?

- (a) Nephridia of earthworm and Malpighian tubules of cockroach - excretory organs
- (b) Wings of honeybee and wings of crow - homologous organs
- (c) Thorn of *Bougainvillea* and tendrils of *Cucurbita* - analogous organs
- (d) Nictitating membrane and blind spot in human eye - vestigial organs

(2008)

- 36.** Which one of the following statements is correct?

- (a) There is no evidence of the existence of gills during embryogenesis of mammals.
- (b) All plant and animal cells are totipotent.
- (c) Ontogeny repeats phylogeny.
- (d) Stem cells are specialised cells.

(2007)

- 37.** When two species of different genealogy come to resemble each other as a result of adaptation, the phenomenon is termed

- (a) microevolution (b) co-evolution
- (c) convergent evolution (d) divergent evolution.

(2007)

- 38.** 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.

(2006)

- 39.** Which one of the following is not a living fossil?
 (a) *Peripatus* (b) King crab
 (c) *Sphenodon* (d) *Archaeopteryx* (2006)
- 40.** Which of the following is the relatively most accurate method for dating of fossils?
 (a) Radio-carbon method
 (b) Potassium-argon method
 (c) Electron-spin resonance method
 (d) Uranium-lead method (2005)
- 41.** Age of fossils in the past was generally determined by radio-carbon method and other methods involve radioactive elements found in the rocks. More precise methods, which were used recently and led to the revision of the evolutionary periods for different groups of organisms, includes
 (a) study of carbohydrates/proteins in fossils
 (b) study of the conditions of fossilisation
 (c) electron spin resonance (ESR) and fossil DNA
 (d) study of carbohydrates / proteins in rocks. (2004)
- 42.** Convergent evolution is illustrated by
 (a) rat and dog
 (b) bacterium and protozoan
 (c) starfish and cuttle fish
 (d) dogfish and whale. (2003)
- 43.** Industrial melanism is an example of
 (a) drug resistance
 (b) darkening of skin due to smoke from industries
 (c) protective resemblance with the surroundings
 (d) defensive adaptation of skin against ultraviolet radiations. (2003)
- 44.** Which one of the following describes correctly the homologous structures ?
 (a) Organs with anatomical similarities, but performing different functions
 (b) Organs with anatomical dissimilarities, but performing same function
 (c) Organs that have no function now, but had an important function in ancestor
 (d) Organs appearing only in embryonic stage and disappearing later in the adult (2003)
- 45.** Which of the following are homologous organs?
 (a) Wings of birds and locust
 (b) Wings of birds and pectoral fins of fish
 (c) Wings of bat and butterfly
 (d) Legs of frog and cockroach (2002)
- 46.** Sequence of which of the following is used to know the phylogeny?
 (a) mRNA (b) rRNA
 (c) tRNA (d) DNA (2002)
- 47.** Half life period of ^{14}C is
 (a) 500 years (b) 5000 years
 (c) 50 years (d) 5×10^4 years. (2001)
- 48.** In Lederberg's replica plating experiment what shall be used to obtain streptomycin resistant strain?
 (a) Minimal medium and streptomycin
 (b) Complete medium and streptomycin
 (c) Only minimal medium
 (d) Only complete medium (2001)
- 49.** Similarities in organism with different genotype indicates
 (a) microevolution
 (b) macroevolution
 (c) convergent evolution
 (d) divergent evolution. (2001)
- 50.** Which is not a vestigial organ in man?
 (a) Third molar (b) Nails
 (c) Segmental muscles of abdomen
 (d) Coccyx (2000)
- 51.** Phenomenon of 'Industrial melanism' demonstrates
 (a) geographical isolation
 (b) reproductive isolation
 (c) natural selection
 (d) induced mutation. (1999)
- 52.** Which of the following are homologous organs?
 (a) Wings of bird and hands of human
 (b) Nails of human being and claws in animals
 (c) Wings of bird and wings of insect
 (d) Wings of bat and wings of cockroach (1999)
- 53.** Evolutionary convergence is characterised by
 (a) development of dissimilar characteristics in closely related groups
 (b) development of a common set of characteristics in groups of different ancestry
 (c) development of characteristics by random mating
 (d) replacement of common characteristics in different groups. (1997)
- 54.** Which of the following is the correct group of vestigial organs in man?
 (a) Nictitating membrane, ear muscles, eyelids and coccyx
 (b) Appendix, coccyx, ear muscles and elbow joint
 (c) Wisdom tooth, coccyx, body hair and ear muscles
 (d) Wisdom tooth, body hairs, nictitating membrane and vermiform appendix (1996)
- 55.** Which of the following isotopes is most dangerous to *Homo sapiens*?
 (a) Phosphorus-32 (b) Strontium-90
 (c) Caesium-137 (d) Iodine-131 (1995)

- 56.** The change of the lighter-coloured variety of peppered moth (*Biston betularia*) to its darker variety (*Biston carbonaria*) is due to
(a) mutation (b) regeneration
(c) genetic isolation (d) temporal isolation.
 (1995)

- 57.** The homologous organs are those that show similarity in
(a) appearance (b) function
(c) origin (d) size. (1995)

- 58.** The presence of gill slits, in the embryos of all vertebrates, supports the theory of
(a) metamorphosis (b) biogenesis
(c) organic evolution (d) recapitulation. (1995)

- 59.** The earliest fossil form, in the phylogeny of horse, is
(a) *Equus* (b) *Mesohippus*
(c) *Eohippus* (d) *Merychippus*. (1994)

- 60.** Which of the following is a pair of homologous organs?
(a) Pectoral fin of rohu and forelimb of horse
(b) Wings of grasshopper and wings of crow
(c) Lungs of rabbit and gills of rohu
(d) Wings of bat and wings of butterfly (1994)

- 61.** Evolutionary convergence is development of
(a) common set of characters in group of different ancestry
(b) dissimilar characters in closely related groups
(c) common set of characters in closely related groups
(d) random mating. (1993)

- 62.** Study of fossils is
(a) palaeontology (b) herpetology
(c) saurology (d) organic evolution.
 (1991)

- 63.** 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. (1990)

- 64.** Basic principles of embryonic development were pronounced by
(a) von Baer (b) Weismann
(c) Haeckel (d) Morgan. (1990)

7.4 What is Adaptive Radiation?

- 65.** The finch species of Galapagos islands are grouped according to their food sources. Which of the following is not a finch food?
(a) Carrion (b) Insects
(c) Tree buds (d) Seeds
 (Karnataka NEET 2013)

- 66.** Evolution of different species in a given area starting from a point and spreading to other geographical areas is known as
(a) adaptive radiation (b) natural selection
(c) migration (d) divergent evolution. (2012)

- 67.** Darwin's finches are a good example of
(a) industrial melanism (b) connecting link
(c) adaptive radiation (d) convergent evolution. (2010, 2008)

- 68.** The Finches of Galapagos islands provide an evidence in favour of
(a) evolution due to mutation
(b) retrogressive evolution
(c) biogeographical evolution
(d) special creation. (2007)

- 69.** Adaptive radiation refers to
(a) evolution of different species from a common ancestor
(b) migration of members of a species to different geographical areas
(c) power of adaptation in an individual to a variety of environments
(d) adaptations due to geographical isolation. (2007)

- 70.** Which evidence of evolution is related to Darwin's finches?
(a) Evidences from biogeographical distribution
(b) Evidences from comparative anatomy
(c) Evidences from embryology
(d) Evidences from paleontology (2000)

- 71.** The diversity in the type of beaks of finches adapted to different feeding habits on the Galapagos Islands, as observed by Darwin, provides evidence for
(a) intraspecific competition
(b) interspecific competition
(c) origin of species by natural selection
(d) intraspecific variations. (1998)

- 72.** Theory of Natural Selection dwells on
(a) role of environment in evolution
(b) natural selection acting on favourable variations
(c) changes in gene complex resulting in heritable variations
(d) none of these. (1993)

- 73.** Humming birds and Hawk illustrate
(a) convergent evolution (b) homology
(c) adaptive radiation (d) parallel evolution. (1988)

7.5 Biological Evolution

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

- (a) De Vries - Natural selection
 (b) Mendel - Theory of Pangenesis
 (c) Weismann - Theory of continuity of germplasm
 (d) Pasteur - Inheritance of acquired characters (2008)
- 75.** 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 (2005)
- 76.** Darwin in his "Natural Selection Theory" did not believe in any role of which one of the following in organic evolution?
 (a) Parasites and predators as natural enemies
 (b) Survival of the fittest
 (c) Struggle for existence
 (d) Discontinuous variations (2003)
- 77.** *Nicotiana sylvestris* flowers only during long days and *N.tabacum* flowers only during short days. If raised in the laboratory under different photoperiods, they can be induced to flower at the same time and can be cross-fertilised to produce self-fertile offspring. What is the best reason for considering *N.sylvestris* and *N.tabacum* to be separate species?
 (a) They cannot interbreed in nature.
 (b) They are reproductively distinct.
 (c) They are physiologically distinct.
 (d) They are morphologically distinct. (2003)
- 78.** Which of the following is most important for speciation?
 (a) Seasonal isolation
 (b) Reproductive isolation
 (c) Behavioural isolation
 (d) Tropical isolation (2002)
- 79.** Some bacteria are able to grow in streptomycin containing medium due to
 (a) natural selection
 (b) induced mutation
 (c) reproductive isolation
 (d) genetic drift. (2002)
- 80.** Reason of diversity in living being is
 (a) mutation
 (b) long term evolutionary change
 (c) gradual change
 (d) short term evolutionary change. (2001)
- 81.** Which is the most important factor for continuity of a species from evolutionary point of view?
 (a) Replication of genetic material
- (b) Formation of gametes
 (c) Synthesis of proteins
 (d) None of these (2000)
- 82.** Species occurring in different geographical area are called as
 (a) sympatric (b) allopatric
 (c) sibling (d) neopatric. (1998)
- 83.** Which of the following evidences does not favour the Lamarckian concept of inheritance of acquired characters?
 (a) Lack of pigment in cave-dwelling animals
 (b) Melanisation in peppered moth
 (c) Absence of limbs in snakes
 (d) Presence of webbed toes in aquatic birds (1994)
- 84.** Weismann cut off tails of mice generation after generation but tails neither disappeared nor shortened showing that
 (a) Darwin was correct
 (b) tail is an essential organ
 (c) mutation theory is wrong
 (d) Lamarckism was wrong in inheritance of acquired characters. (1993)
- 85.** Evolution is
 (a) progressive development of a race
 (b) history and development of race along with variations
 (c) history of race
 (d) development of race. (1989)
- 86.** "Continuity of germplasm" theory was given by
 (a) De Vries (b) Weismann
 (c) Darwin (d) Lamarck. (1989)
- 87.** Theory of inheritance of acquired characters was given by
 (a) Wallace (b) Lamarck
 (c) Darwin (d) De Vries. (1989)
- 88.** 'Origin of Species' was written by
 (a) Oparin (b) Weismann
 (c) Lamarck (d) Darwin. (1989)

7.6 Mechanism of Evolution

- 89.** Variations caused by mutation, as proposed by Hugo de Vries, are
 (a) small and directionless
 (b) random and directional
 (c) random and directionless
 (d) small and directional. (NEET 2019)
- 90.** According to Hugo de Vries, the mechanism of evolution is
 (a) multiple step mutations
 (b) saltation
 (c) phenotypic variations
 (d) minor mutations. (NEET 2018)

91. The idea of mutations was brought forth by
 (a) Hugo de Vries who worked on evening primrose
 (b) Gregor Mendel who worked on *Pisum sativum*
 (c) Hardy-Weinberg who worked on allele frequencies in a population
 (d) Charles Darwin who observed a wide variety of organisms during sea voyage. (Mains 2012)

92. De Vries gave his mutation theory on organic evolution while working on
 (a) *Pisum sativum*
 (b) *Drosophila melanogaster*
 (c) *Oenothera lamarckiana*
 (d) *Althea rosea*. (2005)

7.7 Hardy-Weinberg Principle

93. A gene locus has two alleles A, a. If the frequency of dominant allele A is 0.4, then what will be the frequency of homozygous dominant, heterozygous and homozygous recessive individuals in the population?
 (a) 0.16 (AA); 0.36 (Aa); 0.48 (aa)
 (b) 0.36 (AA); 0.48 (Aa); 0.16 (aa)
 (c) 0.16 (AA); 0.24 (Aa); 0.36 (aa)
 (d) 0.16 (AA); 0.48 (Aa); 0.36 (aa) (NEET 2019)

94. In a species, the weight of newborn ranges from 2 to 5 kg. 97% of the newborn with an average weight between 3 to 3.3 kg survive whereas 99% of the infants born with weights from 2 to 2.5 or 4.5 to 5 kg die. Which type of selection process is taking place?
 (a) Cyclical selection
 (b) Directional selection
 (c) Stabilising selection
 (d) Disruptive selection (NEET 2019)

95. Artificial selection to obtain cows yielding higher milk output represents
 (a) directional as it pushes the mean of the character in one direction
 (b) disruptive as it splits the population into two, one yielding higher output and the other lower output
 (c) stabilising followed by disruptive as it stabilises the population to produce higher yielding cows
 (d) stabilising selection as it stabilises this character in the population. (NEET 2017)

96. Genetic drift operates in
 (a) small isolated population
 (b) large isolated population
 (c) non-reproductive population
 (d) slow reproductive population. (NEET-II 2016, 2002)

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

- (a) p^2 (b) $2pq$
 (c) pq (d) q^2 . (NEET-II 2016)

98. In a population of 1000 individuals 360 belong to genotype AA, 480 to Aa and the remaining 160 to aa. Based on this data, the frequency of allele A in the population is
 (a) 0.4 (b) 0.5 (c) 0.6 (d) 0.7. (2014)

99. The tendency of population to remain in genetic equilibrium may be disturbed by
 (a) lack of mutations
 (b) lack of random mating
 (c) random mating
 (d) lack of migration. (NEET 2013)

100. Variation in gene frequencies within populations can occur by chance rather than by natural selection. This is referred to as
 (a) random mating (b) genetic load
 (c) genetic flow (d) genetic drift. (NEET 2013)

101. Random unidirectional change in allele frequencies that occurs by chance in all populations and especially in small populations is known as
 (a) migration (b) natural selection
 (c) genetic drift (d) mutation. (Karnataka NEET 2013)

102. Genetic variation in a population arises due to
 (a) recombination only
 (b) mutation as well as recombination
 (c) reproductive isolation and selection
 (d) mutations only. (Karnataka NEET 2013)

103. At a particular locus, frequency of A allele is 0.6 and that of a is 0.4. What would be the frequency of heterozygotes in a random mating population at equilibrium?
 (a) 0.36 (b) 0.16 (c) 0.24 (d) 0.48 (2005)

104. Which of the following is not true for a species?
 (a) Members of a species can interbreed.
 (b) Gene flow does not occur between the populations of a species.
 (c) Each species is reproductively isolated from every other species.
 (d) Variations occur among members of a species. (2005)

105. Random genetic drift in a population probably results from
 (a) highly genetically variable individuals
 (b) interbreeding within this population
 (c) constant low mutation rate
 (d) large population size. (2003)

106. In which condition, the gene ratio remains constant for any species population?

- (a) Sexual selection (b) Random mating
(c) Mutation (d) Gene flow (2002)

107. Forthcoming generation are less adaptive than the parental generation due to

- (a) natural selection (b) mutation
(c) genetic drift (d) adaptation. (2001)

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

- (a) Lamarck's principle
(b) Mendelian principles
(c) Biogenetic law
(d) Hardy-Weinberg law (1998)

109. Genetic drift operates only in

- (a) larger populations
(b) Mendelian populations
(c) island populations
(d) smaller populations. (1998)

110. Genetic drift is change of

- (a) gene frequency in same generation
(b) appearance of recessive genes
(c) gene frequency from one generation to next
(d) none of these. (1993)

7.8 A Brief Account of Evolution

111. Dinosaurs dominated the world in which of the following geological eras?

- (a) Cenozoic (b) Jurassic
(c) Mesozoic (d) Devonian
 (Karnataka NEET 2013)

112. Jurassic period of the Mesozoic era is characterised by

- (a) flowering plants and first dinosaurs appear
(b) gymnosperms are dominant plants and first birds appear
(c) radiation of reptiles and origin of mammal like reptiles
(d) dinosaurs become extinct and angiosperms appear. (2006)

113. Diversification in plant life appeared

- (a) due to long periods of evolutionary changes
(b) due to abrupt mutations
(c) suddenly on earth
(d) by seed dispersal. (2004)

114. In which era reptiles were dominant?

(a) Coenozoic era

(c) Palaeozoic era

(b) Mesozoic era

(d) Archaeozoic era

(2002)

115. Which statement is correct about centre of origin of plants?

- (a) More diversity in improved variety
(b) Frequency of dominant gene is more
(c) Climatic condition more favourable
(d) None of these (2001)

116. Which period is dubbed as the age of prokaryotic microbes?

- (a) Precambrian (b) Phanerozoic
(c) Archean (d) Proterozoic (1995)

117. Correct order is

- (a) Palaeozoic → Archaeozoic → Coenozoic
(b) Archaeozoic → Palaeozoic → Proterozoic
(c) Palaeozoic → Mesozoic → Coenozoic
(d) Mesozoic → Archaeozoic → Proterozoic. (1991)

7.9 Origin and Evolution of Man

118. Match the hominids with their correct brain size.

- | | |
|----------------------------------|-----------------|
| (A) <i>Homo habilis</i> | (i) 900cc |
| (B) <i>Homo neanderthalensis</i> | (ii) 1350 cc |
| (C) <i>Homo erectus</i> | (iii) 650-800cc |
| (D) <i>Homo sapiens</i> | (iv) 1400cc |

Select the correct option.

- (A) (B) (C) (D)
(a) (iv) (iii) (i) (ii)
(b) (iii) (i) (iv) (ii)
(c) (iii) (ii) (i) (iv)
(d) (iii) (iv) (i) (ii) (NEET 2019)

119. Which of the following statements is correct about the origin and evolution of men?

- (a) Agriculture came around 50,000 years back.
(b) The *Dryopithecus* and *Ramapithecus* primates existing 15 million years ago, walked like men.
(c) *Homo habilis* probably ate meat.
(d) Neanderthal men lived in Asia between 1,00,000 and 40,000 years back.

(Odisha NEET 2019)

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

- (a) *Australopithecus* → *Ramapithecus* → *Homo habilis* → *Homo erectus*
(b) *Ramapithecus* → *Australopithecus* → *Homo habilis* → *Homo erectus*
(c) *Ramapithecus* → *Homo habilis* → *Australopithecus* → *Homo erectus*
(d) *Australopithecus* → *Homo habilis* → *Ramapithecus* → *Homo erectus* (NEET-II 2016)

121. Which of the following had the smallest brain capacity?

- (a) *Homo neanderthalensis*
- (b) *Homo habilis*
- (c) *Homo erectus*
- (d) *Homo sapiens*

(2015 Cancelled)

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

- (a) Shortening of jaws
- (b) Binocular vision
- (c) Increasing cranial capacity
- (d) Upright posture

(2012, 2011)

123. The extinct human who lived 1,00,000 to 40,000 years ago, in Europe, Asia and parts of Africa, with short stature, heavy eye brows, retreating fore heads, large jaws with heavy teeth, stocky bodies, a lumbering gait and stooped posture was

- (a) *Homo habilis*
- (b) Neanderthal human
- (c) Cro-magnon human
- (d) *Ramapithecus*.

(2012)

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

- (a) loss of body hair
- (b) walking upright
- (c) shortening of the jaws
- (d) remarkable increase in the brain size

(Mains 2010)

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

- (a) Greater variation in Asia than in Africa
- (b) Greater variation in Africa than in Asia
- (c) Similar variation in Africa and Asia
- (d) Variation only in Asia and no variation in Africa

(2005)

126. What kind of evidence suggested that man is more closely related with chimpanzee than with other hominoid apes?

- (a) Evidence from DNA extracted from sex chromosomes only
- (b) Comparison of chromosomes morphology only
- (c) Evidence from fossil remains, and the fossil mitochondrial DNA alone
- (d) Evidence from DNA extracted from sex chromosomes, autosomes.

(2004)

127. In recent years, DNA sequences (nucleotide sequence) of mtDNA and Y chromosomes were

considered for the study of human evolution, because

- (a) they are small and therefore, easy to study
- (b) they are uniparental in origin and do not take part in recombination
- (c) their structure is known in greater detail
- (d) they can be studied from the samples of fossil remains.

(2003)

128. According to fossils discovered up to present time origin and evolution of man started from

- (a) France
- (b) Java
- (c) Africa
- (d) China.

(2002)

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

- (a) Chimpanzee
- (b) Gorilla
- (c) Orangutan
- (d) Gibbon

(2001)

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

- (a) Peking man, *Homo sapiens*, Neanderthal man, Cromagnon man
- (b) Peking man, Heidelberg man, Neanderthal man, Cromagnon man
- (c) Peking man, Neanderthal man, *Homo sapiens*, Cromagnon man
- (d) Peking man, Neanderthal man, *Homo sapiens*, Heidelberg man

(2001)

131. *Homo sapiens* have evolved in

- (a) Paleocene
- (b) Pleistocene
- (c) Oligocene
- (d) Holocene.

(2000)

132. Character which is closely related to human evolution is

- (a) disappearance of tail
- (b) reduction in size of jaws
- (c) binocular vision
- (d) flat nails.

(2000)

133. Who is directly related to man?

- (a) Gorilla
- (b) Rhesus
- (c) Gibbon
- (d) Orangutan

(2000)

134. Which one of the following statements is correct?

- (a) *Australopithecus* is the real ancestor of modern man.
- (b) Neanderthal man is the direct ancestor of *Homo sapiens*.
- (c) *Homo erectus* is the ancestor of man.
- (d) Cro-magnon man's fossil has been found in Ethiopia.

(1998)

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

- (a) 2.5×10^6 years back
- (b) 50×10^6 years back
- (c) 75×10^6 years back
- (d) 25×10^6 years back.

(1998)

- 136.** Which of the following statements is correct regarding evolution of mankind?

 - (a) *Homo erectus* is preceded by *Homo habilis*.
 - (b) Neanderthal man and cro-magnon man were living at the same time.
 - (c) *Australopithecus* was living in Australia.
 - (d) None of these

(1997)

- 138.** Which of the following changes for man in the course of evolution is probably useless?

 - (a) Development of being erect
 - (b) Development of cranial capacity
 - (c) Loss of tail
 - (d) Development of opposable thumb

(1996)

- 139.** Which of the following is the direct ancestor of *Homo sapiens*?
(a) *Australopithecus*
(b) *H. sapiens neanderthalis*
(c) *Homo erectus*
(d) *Homo sapiens fossilis* (1996)

- 141.** Which one of the following changes involved is irrelevant, in the evolution of man?

 - (a) Perfection of hand for tool making
 - (b) Change of diet from hard nuts and hard roots to soft food
 - (c) Loss of tail
 - (d) Increase in the ability to communicate with others and develop community behaviour

(1994)

ANSWER KEY

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