



# BIOLOGY

## BOOKS - MODERN PUBLISHERS

### BIOLOGY (HINGLISH)

#### EVOLUTION

#### Practice Problems Primitive Earth

1. Our earth belongs to which galaxy?



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2. What are satellites? Name the satellite of earth.



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3. Name the four zones of atmosphere



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4. What is big-bang theory?



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5. What is period of origin of earth?



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6. What was the nature of atmosphere on the primitive earth?



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7. Which gas was absent in the atmosphere of primitive earth?



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8. Give another name for origin of life.



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[Practice Problems Theories Of Origin Of Life](#)



1. What does theory of special creation state?



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2. Who proposed Abiogenesis?



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3. What do you mean by theory of spontaneous creation?



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4. Who was the first scientist to object to abiogenesis?



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5. What does biogenesis mean?



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6. Who performed swan-necked flask experiment in support of biogenesis?



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7. Who proposed cosmozoic theory of origin of life?



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8. What is panspermia?



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9. Who proposed chemosynthetic theory of origin of life?



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10. What is the period of origin of life?



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**11.** Name the possible sources of energy for chemogeny



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**12.** What do you mean by chemogeny?



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**13.** What is a coacervate ?



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**14. Define biogeny**



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**15. What were Eobionts?**



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**16. Who proved the formation of simple organic compounds in the laboratory in**

support of Oparin's theory of origin of life?



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**17.** Which gases were taken by Stanley Miller and Harold Urey?



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**18.** Who experimentally proved the formation of complex organic compounds in the laboratory?



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19. What is cognogeny?



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20. What were life-like properties of coacervates?



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21. What was the nature of first photoautotrophs-oxygenic or anoxygenic?



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22. Name the first oxygenic and aerobic photoautotrophs formed.



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23. What was period of origin of cyanobacteria?



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24. Birbal Sahni Institute of Palaeobotany is located in



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[Practice Problems Effect Of Evolution On Oxygen](#)

1. What is period of origin of first eukaryote?



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2. When did first mammal originated on earth?



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3. What was effect of oxygen on methane and ammonia found in the reducing atmosphere of primitive earth?





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4. What do you mean by oxygen revolution?



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5. Name two biological processes which maintain  $O_2$   $\frac{2}{C}$   $O_2$  balance in the nature



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6. What was site of origin of life?



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7. Why is there no life on moon?



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8. Name the earth-like planet on which the presence of life has been suggested



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9. Define exobiology.



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## Practice Problems Anatomical Evidences

1. What are homologous organs? Give one example in each of animals and plants



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2. Define analogous organs. Give one example in each of animals and plants



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3. Give the significance of homologous organs.



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4. Give the significance of analogous organs.



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5. Define connecting links. Give two examples of connecting links.



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6. What is significance of connecting links?



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7. What are vestigial organs? Give two examples of vestigial organs in man.



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8. What are splint bones? How do they support organic evolution?



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9. Define atavism. Give one example of atavism.



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10. Give the significance of atavistic structures.



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## Practice Problems Embryological Evidences

1. Define organic evolution in three words



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2. Who proposed the recapitulation theory?



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3. Give the reason for the presence of fish-like tadpole larva in the life history of frog.



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4. Who proposed the biogenetic law?



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5. What do you mean by "ontogeny repeats phylogeny?"



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6. Why does the heart of man become 2-chambered and 3-chambered before becoming 4-chambered?



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7. What are coenogenetic characters?



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## Practice Problems Palaeontological Evidences

1. Define palaeontology



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2. What are missing links?



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3. What is significance of Archaeopteryx in the study of evolution?



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4. Which technique is used to know the age of fossils?



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5. Which period was dominated by dinosaurs?



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6. Name different geological eras of geological time scale of earth.



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7. What are fossils ?



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8. Father of palaeontology is



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9. Which period is called period of fishes?



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10. Define phylogeny



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**11.** Who studied the phylogeny of horse?



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**12.** Give the scientific name of dawn horse and ruminating horse



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**13.** Which epoch is called "age of mammals and angiosperms"?



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**Practice Problems Biogeographical And Biochemical Evidences**

**1.** Define biogeography.



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2. Name the single land mass from which different continents have originated



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3. Name a living fossil.



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4. Who called birds are glorified reptiles



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5. Name six biogeographical realms



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6. Which organism is called living fossil?



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7. Define mass extinction



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**8. What is biochemical recapitulation?**



**Watch Video Solution**

**9. Define molecular homology.**



**Watch Video Solution**

**10. What are Darwin's finches ?**



**Watch Video Solution**

**11.** To which zoogeographic realm, India belongs?



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**12.** What does discontinuous distribution prove?



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**13.** What are pseudofossils?



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**14.** What do you mean by serological relationship?



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**15.** Define fossil parks. Give one example.



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1. Who is regarded as father of evolutionary concept



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2. Name the book written by Lamarck.



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3. What are acquired characters ?







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4. Who proposed the theory of continuity of germplasm ?



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5. What is the name for revised Lamarckism.



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6. Which is the most objectionable postulate of Lamarckism?



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7. Name two evidences in support of Lamarckism.



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**8.** Name the scientist who proved the mutagenic role of X-rays.



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**9.** Give the contribution of C. Auerbeck towards organic evolution



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**10.** Who proposed the theory of Pangenesis ?



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## Practice Problems Darwinism And Mutation Theory

1. Name two scientists who put forward Darwinism.



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2. Give the term for sudden and inheritable changes.



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3. Who wrote the book 'The Origin of Species' ?



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4. Name the scientist who proposed mutation theory. On which plant, he worked upon?



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5. List two evidences of mutation theory of evolution.



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6. Darwin was most influenced by



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7. Name the ship on which Darwin went on a voyage to study the nature.



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**8.** What do you mean by geometric increase in population?



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**9.** Define struggle for existence.



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**10.** What was the name given to discontinuous variations by Darwin?



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**11.** What do you mean by survival of the fittest postulate of darwinism?



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**12.** What are elementary species?





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**13.** List one evidence in support of and one evidence against Darwinism.



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## Practice Problems Darwinism And Speciation

**1.** Define gene pool.



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2. What is artificial selection? Give one example.



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3. What do you mean by differential reproduction?



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4. Name the phenomenon which prevents individuals of two different species from interbreeding to produce fertile offsprings.



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5. Name three types of gene mutations.



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6. Which theory of evolution does Lederberg's replica plating experiment support?



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7. What is significance of the Lederberg's experiment?



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**8.** List the three key factors of modern concept of evolution



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**9.** Name the type of reproductive isolation on the basis of difference in breeding seasons.



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**10.** How do euploidy and aneuploidy differ from each other?



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**11.** Define translocation.



**Watch Video Solution**

**12.** Give the significance of reproductive isolation,



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13. What is meant by industrial melanism ?



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## Practice Problems Types Of Variations

1. Define variations.



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2. What is role of variations in evolution?



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3. Define somatogenic variations. Give one example.



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4. What are blastogenic variations? Give one example.







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5. Who formed the continuous variations as the basis of his theory of evolution?



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6. Why are continuous variations called fluctuations?



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7. Give another name for discontinuous variations.



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8. How do meristic variations differ from substantive variations?



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**Practice Problems Sources Of Variations**

1. What are mutations?



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2. Give one example of preadaptive mutation.



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3. Define gene migration.



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4. Sickle cell anaemia is due to which type of gene mutation?



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5. Name four types of chromosomal aberrations.



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6. What is site of crossing over called?



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7. Define translocation.



**Watch Video Solution**

8. What is aneuploidy? Name two types of aneuploids.



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**9.** Who wrote the book 'Genetics and Origin of Species' ?



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**10.** What are mutagens?



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**11.** Crossing over



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12. What is the significance of recombination?



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## Practice Problems Natural Selection

1. Define natural selection.



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2. What is mode of operation of natural selection?



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3. Define differential reproduction.



**Watch Video Solution**

4. Name three types of natural selection.



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5. Differentiate directional and disruptive selection.



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6. What is significance of natural selection?



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7. Who wrote the book 'The Origin of Species' ?



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## Practice Problems Mechanism Of Speciation

1. Define a species



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2. What is speciation ?-



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3. Differentiate gradual speciation and abrupt speciation.



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4. Differentiate allopatric and sympatric speciation.



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5. Name the methods of abrupt speciation





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**6. What are mutations?**



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**7. Define sibling species. Give one example.**



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**8.** What is polyploidy ? Give one example of a polyploid species.



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**9.** Define hybridisation.



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**10.** Name two intergeneric hybrids



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## Practice Problems Reproductive Isolation

### 1. Reproductive isolation



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### 2. Name two types of isolating mechanisms



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3. What is geographical isolation?



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4. How does ecological isolation differ from temporal isolation?



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5. What is ethological isolation?



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6. Name different types of post-mating isolating mechanisms.



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7. How does hybrid sterility differ from hybrid breakdown?



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8. What is evolutionary importance of reproductive isolation?



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9. While in hybrid breakdown, hybrids are fertile but their offsprings are sterile.



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[Practice Problems Human Evolution](#)

1. Who wrote the book "Man's place in nature"?



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2. Which type of locomotion is found in modern man?



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3. Which type of face is found in man and apes?





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4. Why is man called to have microsomatic brain?



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5. Name pre-human ancestors



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6. Which human type is called early true man?



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7. Name the human types of mid-Pleistocene period.



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[Ncert File Solved Ncert Exercise Questions](#)

1. Explain antibiotic resistance observed in bacteria in light of Darwinian selection theory.



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2. Find out from newspapers and popular science articles any new fossil discoveries or controversies about evolution.



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3. Attempt giving a clear definition of the term species.



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4. Try to trace the various components of human evolution (hint : brain size and function, skeletal structure, dietary preference, etc.)



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5. Find out through internet and popular science articles whether animals other than man have self-consciousness.



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6. List 10 modern-day animals and using the internet resources link it to a corresponding ancient fossil. Name both.



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7. Practise drawing various animals and plants.



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8. Describe one example of adaptive radiation.



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9. Can we call human evolution as an adaptive radiation? Explain.



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10. Using various resources such as your school library or the internet and discussions with your teacher, trace the evolutionary stages of any one animal say horse.



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## Ncert Exemplar Problems A Multiple Choice Questions

1. Which of the following is used as an atmospheric pollution indicator



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2. The theory of spontaneous generation stated that



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3. Animal husbandry and plant breeding programmes are the examples of



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4. Palaentological evidences for evolution refer to the



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5. The bones of forelimbs of whale, bat, cheetah and man are similar in structure, because



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6. Analogous organs arise due to



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7.  $(p + q)^2 = p^2 + 2pq + q^2 = 1$  represents  
an equation used in



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8. Appearance of antibiotic-resistant bacteria  
is an example of



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9. Evolution of life shows that life forms had a trend of moving from



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10. Viviparity is considered to be more evolved because



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**11.** Fossils are generally found in



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**12.** For the MN-blood group system. The frequencies of M and N alleles are 0.7 and 0.3, respectively. The expected frequency of MN-blood group bearing organisms is likely to be



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**13.** Which type of selection is industrial melanism observed in moth, *Biston betularia*?



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**14.** The most accepted line of descent in human evolution is



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**15.** Which of the following is an example for link species



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**16.** Match the scientists listed under column 'A' with ideas listed column B



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**17.** In 1953 S.L. Miller created primitive earth conditions in the laboratory and gave experimental evidence for origin of first form of life from pre-existing non-living. Organic molecules. The primitive earth conditions created include.



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**18.** Variations during mutations of meiotic recombinations are





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## Ncert Exemplar Problems B Very Short Answer Type Questions

1. What were the characteristic of life forms that had been fossilised ?



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2. Did aquatic life get fossilised ? If, yes where do we come across such fossils. ?

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3. What are we referring to when we referring to when we say 'simple organism ' or ' complex organism' ?

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4. How do we compute the age of a living tree ?

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5. Give an example for convergent evolution and identify the features towards which they are converging.



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6. How do we compute the age of a fossils ?



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7. What is the most important pre-condition for adaptive radiation ?



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8. How do we compute the age of a rock ?



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9. When we talk functional macromolecules ( e.g., proteins as enzymes, hormones,

receptors, antibodies etc. ), towards what are they evolving ?



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**10.** In a certain population, the frequency of three genotypes is as follows

Genotypes	$BB$	$Bb$	$bb$
Frequency	22 %	62 %	16 %

What is the likely frequency of B and b alleles ?



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**11.** Among the five factors that are known to affect Hardy- Weinberg equilibrium, three factors are gene flow, genetic drift and genetic recombination. What are the other two factors. ?



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**12.** What is founder effect ?



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**13.** Who among the Dryopithecus and Ramapithecus was more man like ?



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**14.** By what Latin name, the first Hominid was known?



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15. Among Ramapithecus, Australopithecines and Homo habilis who probably did not eat meat ?



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## Ncert Exemplar Problems C Very Short Answer Type Questions

1. Louis Pasteur's experiments, if you recall, proved that life can arise from only pre-existing life. Can we correct this as life evolves

from pre-existent life or otherwise we will never answer the question as to how the first forms of life arose ? Comment.



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2. The scientist believe that evolution is gradual. But extinction, part of evolutionary story, are ' sudden ' and 'abrupt' and also group-specific. Comment whether a natural disaster can be the cause for extinction of species.



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3. Why is nascent oxygen supposed to be toxic to aerobic life forms?



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4. While creation and presence of variation is directionless, natural selection is directional as it is in the context of adaptation. Comment.



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5. The evolutionary story of moths in England during industrialisation reveals, that ' evolution is apparently reversible '. Clarify this statement.



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6. Comment on the statement that ' evolution and natural selection are end result or consequence of some other processes, but themselves are not processes'.





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7. State and explain any three factors affecting allele frequency in population.



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8. Gene flow occurs through generations. Gene flow can occur across language barriers in humans. If we have a technique of measuring specific allele frequencies in different population of the world, can we not predict

human migratory patterns in pre-history and history ? Do you agree or disagree ? Provide explanation to your answer.



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9. How do you express the meaning of words like race, breed, cultivars or variety ?



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**10.** When we say ' survival of the fittest ' , does it mean that

(a) those which are fit only survive

(b) those that survive are called fit? Comment.



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**11.** Enumerate three most characteristic criteria for designating a Mendelian population.



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**12.** Migration may enhance or blurr the effects of selection' comment.



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## **Ncert Exemplar Problems D Long Answers Type Question**

**1.** Name the law that states that the sum of allelic frequencies in a population remains



constant. What are the five factors that influence these values ?



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2. Explain divergent evolution in detail. What is the driving force behind it ?



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3. You have studied the story of peppered moths in England. Had the industries been

removed, what impact could it have on the moth population ? Discuss.



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4. What are the key concepts in the evolution theory of Darwin?



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5. Two organisms occupying a particular geographical area ( say desert ) show similar

adaptive strategies. Taking examples, describe the phenomenon.



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**6.** We are told that evolution is a continuing phenomenon for all living things. Are humans also evolving ? Justify your answer.



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7. Had Darwin been aware of Mendel's work would he have been able to explain the origin of variations. Discuss.



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**Hots Higher Order Thinking Skills Brain Twisting  
Very Short Answer Questions One Mark Each**

1. What is a coacervate ?



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2. What do you mean by recapitulation theory ? Who proposed it ?



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3. Define living fossils. Give one example



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4. What is significance of Lederberg's experiment.



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5. Which phenomenon explains the action of Natural Selection ?



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6. Define mutations. Give one example of speciation by abrupt mutation.



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7. "Differential reproduction" is just another way of saying :



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8. Enlist four peculiar features of human evolution.



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9. Give one example of stabilizing selection.





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**10.** Reproductive isolation is essential for speciation. Why?



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**11.** How connecting links play important role in understanding the concept of organic evolution,



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12. Man is considered to be most closely related to chimpanzee among the apes. Why?



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**Hots Higher Order Thinking Skills Brain Twisting  
Short Answer Questions Two Mark Each**

1. Why there is no accumulation of organic compounds and origin of life presently?



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2. Name the first oxygenic photoautotrophic organism. What was the effect of evolved oxygen on atmospheric gases of reducing atmosphere of that period ?



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3. What is the significance of Archaeopteryx in the study of organic evolution ?



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4. What do you mean by molecular homology?

What is its significance ?



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5. Define artificial selection. Name one example from plants and animals produced by this process.



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6. How did DDT become ineffective against mosquitoes ?



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7. Define reproductive isolation. Why it is must for speciation ?



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8. What are Dryopithecines ? Why are these considered to be common ancestors of both apes and humans?



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**Hots Higher Order Thinking Skills Brain Twisting  
Short Answer Questions Three Mark Each**

1. Summarize Miller simulation experiment for organic synthesis. Comment on its efficacy



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2. Explain the following terms :

- (a) Palaeontology , (b) Phylogeny , (c ) Fossil ,  
(d) Geological time scale , (e) Mass extinction



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3. Write short notes on :

- (i) Ontogeny repeats phylogeny  
(ii) Darwin's finches.



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4. Write short notes on:

(i) Reproductive isolation (ii)

Differential reproduction.



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5. Define natural selection. Explain its mode of operation in evolution.



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6. Why is Cro-magnon man called the extinct representative of modern man? Explain.



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**Hots Higher Order Thinking Skills Brain Twisting  
Long Answer Questions Five Marks Each**

1. Describe postulates of Darwinism.



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2. A group of pesticide sprayers were worried about their profession when all the mosquitoes got exterminated . How can you explain that such an anxiety was based on ignorance.



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3. Write short notes on : (i) Balancing selection.

(ii) Natural selection and polymorphism.





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**4. Write short notes on :**

(i) Role of mutations in speciation.

(ii) Role of differential reproduction in evolution



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**5. Explain the chronology of human evolution.**



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## Quick Memory Test A Say True Of False

1. The evidence for the origin of life came by the discovery of fossils of cyanobacteria.



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2. There was plenty of oxygen present in atmosphere of primitive earth.



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3. The book "Origin of life" was written by Oparin and Haldane.



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4. Tendril of Passiflora and tendril of Pisum are analogous organs.



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5. Peripatus is a connecting link between annelids and molluscs



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6. Archaeopteryx is a connecting link between reptiles and birds.



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7. Biogenetic law is also called "Ontogeny repeats phylogeny".



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**8.** Potato and carrot are analogous organs.



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**9.** Wing of a bat and wing of a bird are homologous organs



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**10.** According to the concept of biological evolution, all organisms are related through

ancestry.



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**11.** Origin of Ancon sheep supports Neo-Darwinism.



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**12.** Reproductive isolation on the basis of different habitats is called ecological isolation.



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**13.** Evolution is a discontinuous process. Is it correct ?



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**14.** Charles Darwin's theory of Natural selection was objected by Weismann's theory of continuity of germplasm.



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**15.** Three postulates of Darwinism are: genetic variation, natural selection and reproductive isolations.



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**16.** Genetic basis of adaptations was supported by Lederberg's replica plating experiment



**Watch Video Solution**

**17.** Natural selection of Neo-Darwinism operates through differential reproduction.



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**18.** Instantaneous speciation is done by hybridization followed by polyploidy



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**19.** Sickle cell anaemia represents the stabilizing selection.



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**20.** Common ancestry of man and chimpanzee is proved by chromosomal banding pattern.



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**21.** Gibbon is the smallest ape while chimpanzee is the largest ape.



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**22.** Human evolution probably took place in Central Africa during Pleistocene.



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**23.** Australopithecus was discovered from the rocks of Australia.



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**24.** Peking man was discovered by W.C. Pei while Java man was discovered by Eugene Dubois.



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**25.** Neanderthal man had the largest sized cranial cavity.



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**26.** Analogous organs suggest divergent evolution.



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**27.** Lamarck's theory of evolution was based on inheritance of acquired characters.



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**28.** ..... Was a cold cloudy mass of cosmic dust and gases which gave rise to our system.



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**29.** Biogenesis was first proposed by .....



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**30.** The first oxygenic photosynthetic organisms were.....



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31. The most accepted theory of origin of life was proposed by .....and .....



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32. In the primaeval Earth, the organic molecules accumulated in \_\_\_ because their \_\_\_ was extremely slow in the absence of any life or enzymatic catalysis.







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**33.** The first living organisms were presumably..... and heterotrophs, some of which might have evolved into ..... and autotrophs,



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**34.** Thorn of Bougainvillea is ..... to tendrils of Passiflora.



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**35.** Connecting link between reptiles and mammals is .....



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**36.** Table showing sequence and duration of six biogeographic realms is called .....



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37. .... is the study of fossils.



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## Quick Memory Test B Complete The Missing Links

1. The changes developed in an organism during its own life span due to environmental factors or use and disuse of organs are called

.....



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2. "Theory of Continuity of Germplasm" was propounded by :



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3. .... and ..... .. jointly proposed the "Theory of Natural Selection".



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4. Instant (rapid) speciation occurs by.....  
and .....



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5. The genetic basis of adaptations in bacteria  
was experimentally proved by .....



**Watch Video Solution**

6. Species found within the original population and in the same geographical area, are called

.....



**Watch Video Solution**

7. The idea of "survival of the fittest" was given by



**Watch Video Solution**

8. Origin of short-legged Ancon sheep variety occurs by .....



**Watch Video Solution**

9. The process which prevents interbreeding between related groups of living organisms is called .....



**Watch Video Solution**

10. Darwin's finches are examples of .....Speciation.



**Watch Video Solution**

11. Branch dealing with study of human evolution is called .....



**Watch Video Solution**



**12.** Tarsiers, lemurs and lorises are commonly called .....



**Watch Video Solution**

**13.** Gibbon ape is found in ..... While orangutan is found in .....



**Watch Video Solution**

14. .... is supposed to be the most recent ancestor of modern man.



[Watch Video Solution](#)

15. A group of animals of a species that live in a well-defined geographical area, share or compete for similar resources, potentially interbreed and thus constitute a

A. Group of individuals in a well defined geographical area, share or compete for

similar resources, potentially interbreed,

B. Group of individuals in a well defined

geographical area, share or compete for

similar resources, potentially interbreed,

C. Group of individuals in a well defined

geographical area, share or compete for

similar resources, potentially interbreed,

D. Group of individuals in a well defined

geographical area, share or compete for

similar resources, potentially interbreed,

**Answer:**



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**16.** Archaeopteryx is a connecting link between

A. constitute

B. constitute

C. constitute

D. constitute

**Answer:**



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## Quick Memory Test Choose The Correct Alternative

1. Primitive atmosphere was reducing/oxidising.



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2. Theory of Biogenesis was supported by Cuvier/Louis Pasteur,



**Watch Video Solution**

3. Teeth of man and mandibles of cockroach are homologous/analogous organs.



**Watch Video Solution**

4. Dinosaurs originated in Thassid/Cretaceous period.



[Watch Video Solution](#)

5. Presence of functional ear muscles in human is an example of vestigial/atavistic character.



[Watch Video Solution](#)

6. Natural selection of Neo-Darwinism operates through survival of the fittest/differential reproduction.



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7. First civilized man is supposed to be neanderthal man/cromagnon man.



[Watch Video Solution](#)



8. Reproductive isolation on the basis of breeding behaviour is called ecological/ethological isolation



[Watch Video Solution](#)

9. Industrial melanism is an example of stabilizing selection/directional selection



[Watch Video Solution](#)

**10.** Genetic drift is the most effective in small population/large population.



**Watch Video Solution**

**Revision Exercises | Multiple Choice Questions  
Mcqs One Mark Each**

**1.** Which one of the following describes correctly the homologous organs ?

- A. Organs which have no function now but had an important function in ancestors
- B. Organs appear only in embryonic stage and disappearing later in adult
- C. Organs with anatomical dissimilarities, but performing the same function
- D. Organs with anatomical similarities, but performing different functions

**Answer: D**



**Watch Video Solution**

2. Industrial melanism is an example of

A. Drug resistance

B. Protective resemblance with the surrounding

C. Darkening of skin due to smoke from industries

D. Defensive adaptation of skin against UV-rays

**Answer: B**



**Watch Video Solution**

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

- A. Survival of the fittest
- B. Struggle for existence
- C. Discontinuous variations

D. Parasites and predators as natural enemies

**Answer: C**



**Watch Video Solution**

**4. Convergent evolution is illustrated by**

A. Rat and dog

B. Dog fish and whale

C. Starfish and cuttle fish

## D. Bacterium and Protozoan

**Answer: B**



**Watch Video Solution**

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

A. Selection

B. Migration

C. Mutations

D. Random drift

**Answer: C**



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



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

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

C. Over production, variations, constancy of population size, natural selection

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

**Answer: A**



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

A. Mutation theory

B. Germplasm theory

C. Pangenesis theory

D. Inheritance of acquired characters

**Answer: C**



**Watch Video Solution**

**8. Concept of genetic drift was introduced by**

A. Swell Wright

B. G.G. Simpson

C. Julian Huxley

D. Hardy-Weinberg

**Answer: A**



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9. Who introduced the idea of spontaneous generation?

A. Axanimander

B. Empedocles

C. Anaximus

D. Aristotle

**Answer: A**



10. Which one is a vestigial organ in humans ?

A. Iris

B. Nasal epithelium

C. Malleus

D. Pinna muscles

**Answer: D**



11. Which of these presumably possessed a cranial capacity almost equal to or even a bit larger than that of today's man?

A. Neanderthal man

B. Peking man

C. Australopithecus

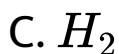
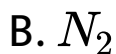
D. Java ape man

**Answer: A**



**Watch Video Solution**

12. Which one is present today but was absent about 3 to 5 million years ago ?



**Answer: A**



**Watch Video Solution**

**13.** Natural selection really means :

- A. Struggle for existence
- B. Differential reproduction
- C. Survival of the fittest
- D. Elimination of the unfit

**Answer: C**



**Watch Video Solution**



**14.** According to modern synthetic theory of evolution, organic evolution depends upon :

A. Mutation and Natural selection

B. Genetic recombination and Natural selection

C. Mutation, reproductive isolation and Natural selection

D. All of above factors

**Answer: D**



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15. Which is the common ancestor of old world monkeys , apes and humans ?

A. Oligopithecus

B. Shivapithecus

C. Ramapithecus

D. Parapithecus

**Answer: D**



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**16.** Animal population within which interbreeding occurs is called :

A. Genus

B. Family

C. Species

D. Class

**Answer: C**



**Watch Video Solution**

**17.** The first experiment on chemical evolution and origin of life was carried out by :

A. Watson & Crick

B. Urey & Miller

C. Beadle & Tatum

D. Darwin & Wallace

**Answer: B**



**Watch Video Solution**

**18.** Dinosaurs became extinct in

A. Jurassic

B. Triassic

C. Permian

D. Cretaceous

**Answer: D**



**Watch Video Solution**

**19.** The corner stone of Darwin's theory is :

A. Inheritance of acquired character

B. Higher productivity

C. Natural selection

D. None of these

**Answer: C**



**Watch Video Solution**

20. Man originated in the:

A. Palaeocene

B. Miocene

C. Pliocene

D. Pleistocene

**Answer: D**



**Watch Video Solution**

21. The concept of evolution was given by :

A. Darwin

B. Aristotle

C. Lamarck

D. Empedocles

**Answer: D**



**Watch Video Solution**



22. Darwin finches are related to which of the following evidences ?

A. Fossils

B. Embryological

C. Anatomical

D. Biogeographical

**Answer: D**



**Watch Video Solution**

23. Mutation theory explaining organic evolution was proposed by :

A. Hugo de Vries

B. Louis Pasteur

C. E.Darwin

D. William Harvey

**Answer: A**



**Watch Video Solution**

24. Java man presumably lived only in:

A. Java

B. China

C. Africa

D. Java and China

**Answer: D**



**Watch Video Solution**

**25.** Role of isolation in evolution is

A. Preserve the identity of a species

B. Formation of new species

C. Causes natural selection

D. Open the gene pool

**Answer: B**



**Watch Video Solution**

**26.** The ancestor of man whose fossils were found in Shivalik hills:

A. Ramapithecus

B. Pithecanthropus

C. Australopithecus

D. Sinanthropus

**Answer: A**



**Watch Video Solution**

27. Cro-Magnon man differs from Neanderthal man in having:

- A. Small jaws
- B. Large jaws
- C. Brachiasm
- D. Cannibalism

**Answer: A**



**Watch Video Solution**

28. Which one is not vestigial ?

A. Wings of kiwi

B. Flipper of seal

C. Coccyx in man

D. Splint bone of horse

**Answer: B**



**Watch Video Solution**

**29.** Coacervates are

- A. Colloidal droplets
- B. Contain nucleoproteins
- C. Both (a) & (b)
- D. Protobiant

**Answer: C**



**Watch Video Solution**



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

A. Evidence from fossil remains and the fossil mitochondrial DNA alone

B. Evidence from DNA extracted from sex chromosomes, autosomes and mitochondria

C. Evidence from DNA from sex chromosomes only

## D. Comparison of chromosomal DNA

**Answer: B**



**Watch Video Solution**

**Revision Exercises II Very Short Answer Type Questions One Mark Each A Questions From State Board Examinations**

**1. What was the nature of atmosphere on the primitive earth?**



**Watch Video Solution**

2. Which gas was absent in the atmosphere of primitive earth?



[Watch Video Solution](#)

3. To which galaxy, our earth belongs?



[Watch Video Solution](#)

4. Homo erectus had a large brain around

A. 1400 cc

B. 900 cc

C. 1500 cc

D. 500 cc

**Answer:**



**Watch Video Solution**

5. Which of the two are more man-like :

Dryopithecus / Ramapithecus.



 [Watch Video Solution](#)

6. What is the cranial capacity of man ?

 [Watch Video Solution](#)

7. Can we call human evolution as adaptive radiation? (Say, Yes or No).

 [Watch Video Solution](#)

8. What is a coacervate ?



**Watch Video Solution**

**9. Define organic evolution in three words.**



**Watch Video Solution**

**10. Which technique is used for measuring age of rocks, fossils etc.**



**Watch Video Solution**

**11.** Life originated on earth nearly .....  
years ago.



**Watch Video Solution**

**12.** Define adaptive radiation.



**Watch Video Solution**

**13.** Name the scientist who had also come to  
similar conclusion as Darwin.



[Watch Video Solution](#)

**14.** Cranial cavity of Java man was 700 cc. (True of False).



[Watch Video Solution](#)

**15.** Cranial cavity of Homo sapiens man is 1700 cc. (True of False).



[Watch Video Solution](#)



**16.** Write two similarities between male monkeys named as Dryopithecus and Ramapithecus.



**Watch Video Solution**

**17.** The scientist who by careful experimentation demonstrated that life comes only from preexisting life.



**Watch Video Solution**

**18.** Age of invertebrates was



**Watch Video Solution**

**19.** Cranial cavity of Neanderthal man was 1400 cc. (True or False)



**Watch Video Solution**

**20.** Name the evolutionary species of man with brain capacity around 900 cc



**Watch Video Solution**

21. Name the island on which Darwin worked.



**Watch Video Solution**

22. The movement of alleles from one population to another is called.....



**Watch Video Solution**

**23.** What were the raw materials used in Miller's experiment?



**Watch Video Solution**

**24.** Which theory talks about the huge explosion that leads to origin of universe?



**Watch Video Solution**

**25.** What is Archaeopteryx ? What is its significance in evolution ?



**Watch Video Solution**

**26.** Potato is a stem and sweet potato is a root. Justify the statement.



**Watch Video Solution**

**27.** What causes speciation according to Hugo-de-Vries ?



**Watch Video Solution**

**28.** Give two example of adaptive radiation.



**Watch Video Solution**

**29.** Which human type was first to use stone weapons?



[Watch Video Solution](#)

30. The age of fossils is determined by



[Watch Video Solution](#)

Revision Exercises Ii Very Short Answer Type  
Questions One Mark Each B Questions From  
Cbse Examinations

1. Name the common ancestor of the great apes and man.



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2. Write the similarity between the wing of a butterfly and the wing of a bat. What do you infer from the above with reference to evolution?



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3. State the significance of the study of fossils in evolution.







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4. State the significance of biochemical similarities amongst diverse organism in evolution.



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5. Comment of the similarity between the wing of a cockroach and the wing oi a bird. What do you infer from the above, with reference to evolution?



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6. Identify the examples of convergent evolution from the following :

(i) Flippers of penguins and dolphins

(ii) Eyes of octopus and mammals

(iii) Vertebrate brains

A. Flippers of penguins and dolphins.

B. Eyes of Octopus and mammals.

C. Vertebrate brains.

D.

**Answer:**



**Watch Video Solution**

7. 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. Vertebrate hearts.

B. Thorns of Bougainvillea and tendril of Cucurbita.

C. Food storage organ-in sweet potato and potato.

D.

**Answer:**



**Watch Video Solution**

8. "Sweet potato tubers and potato tubers are the result of convergent evolution." Justify the statement.



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9. State a reason for the increased population of dark coloured moths coinciding with the loss of lichens (on tree barks) during industrialization period in England.





[Watch Video Solution](#)

10. According to de - Vrices what is saltation ?



[Watch Video Solution](#)

11. Write the probable differences in eating habits of Homo habilis and Homo erectus.



[Watch Video Solution](#)

**12.** What role does an individual organisms play as per Darwin's theory of natural selection?



**Watch Video Solution**

**13.** What is "fitness of an individual" according to Darwin?



**Watch Video Solution**

**14.** Rearrange the human activities mentioned below as per the order in which they developed after the modern Homo sapiens came into existence during ice age :

- (i) Human settlement
- (ii) Prehistoric cave art
- (iii) Agriculture



**Watch Video Solution**

**15.** State two postulates of Oparin and Haldane with reference to origin of life







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**16.** Write the names of the following :

(i) A 15 mya primate that was ape-like

(ii) A 2mya primate that lived in East African grasslands.



[Watch Video Solution](#)

**17.** Mention one example each from plants and animals exhibiting divergent evolution.



[Watch Video Solution](#)

18. what is 'saltation' according to de Vries ?



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Revision Exercises Iii Short Answer Type I  
Questions Two Mark Each A Questions From  
State Board Examinations

1. Write short note on vestigial organs.



[Watch Video Solution](#)

2. Quote two examples from the plant kingdom to explain that embryological evidences which support the theory of evolution.



[Watch Video Solution](#)

3. Write down the examples of evolution by anthropogenic actions.



[Watch Video Solution](#)

4. Write about Neanderthal man.



[Watch Video Solution](#)

5. What did Darwin mean by Fitness ?



[Watch Video Solution](#)

6. Write the features of Homo habilis and H. erectus.



[Watch Video Solution](#)

7. What is adaptive radiation ? Give one example.



**Watch Video Solution**

8. What is Industrial melanism ?



**Watch Video Solution**

9. 

The above shown picture are beaks of a particular type of bird seen in an island during Darwin's journey.

(i) Identify the bird and name the island.

(ii) Write down significance of this process in evolution



[View Text Solution](#)

**10.** What is meant by geological time scale?

Why is it necessary to determine the age of fossils ?



**Watch Video Solution**

**11.** Homologous and Analogous Organs



**Watch Video Solution**

**12.** What do you understand by the terms allopatric speciation and sympatric speciation.



**Watch Video Solution**

**13.** What is adaptive radiation ? Describes it by giving example of Darwin finches



**Watch Video Solution**

**14.** What is Miller and Urey experiment?





[Watch Video Solution](#)

**15.** What is meant by industrial melanism ?



[Watch Video Solution](#)

**16.** Differentiate between divergent and convergent evolution. Give one example of each.



[Watch Video Solution](#)

**17.** What do you mean by connecting links?

Give one example.



**Watch Video Solution**

**18.** Explain the meaning of 'ontogeny repeats phylogeny'



**Watch Video Solution**

**19.** Define divergent and convergent evolution.





[Watch Video Solution](#)

20. Write any two factors affecting Hardy Weinberg principle.



[Watch Video Solution](#)

21. What are homologous organs? State the kind of evolution they present.



[Watch Video Solution](#)

**22.** What are analogous organs? State the kind of evolution they represent.



**Watch Video Solution**

**23.** Are the thorns of Bougainvillea and tendril of Cucurbita homologous or analogous ?  
What type of evolution has brought such a similarity in them ?



**Watch Video Solution**

24. What is significance of Hardy Weinberg's law?



**Watch Video Solution**

25. Write a short note on Cro-magnon man



**Watch Video Solution**

26. What are vestigial organs ?



**Watch Video Solution**

**27.** Cro-Magnon man was



**Watch Video Solution**

**28.** Why coacervates were called primitive cells?



**Watch Video Solution**

**29.** Homologous organs and Analogous organs.



**Watch Video Solution**

**30.** ATAVISM



**Watch Video Solution**

**31.** What are connecting links ? Cite two examples



**Watch Video Solution**

## **32. MISSING LINKS**



**Watch Video Solution**

**33. Mention any two examples of evolution by anthropogenic action.**



**Watch Video Solution**



**34.** Complete the boxes with the suitable words given below:



**View Text Solution**

**35.** Enumerate any three factors affecting Hardy-Weinberg equilibrium.



**Watch Video Solution**

**36.** What are homologous organs ? Cite one example



**Watch Video Solution**

**37. MISSING LINKS**



**Watch Video Solution**

**38. RECAPITULATION THEORY**



**Watch Video Solution**

**39. WHAT IS ADAPTIVE RADIATION?**



**Watch Video Solution**

**40. Differentiate between divergent and convergent evolution. Give one example of each.**



**Watch Video Solution**

**41.** How the vestigial organs help in the course of evolution? Explain with one example.



**Watch Video Solution**

**42.** How do the homologous and analogous organs differ. Cite one example of each



**Watch Video Solution**

**43. MISSING LINKS**



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**44.** What is Hardy-Weinberg principle ? List the factors which affect it



[Watch Video Solution](#)

**45.** Enlist any four vestigial organs in human beings.



[Watch Video Solution](#)

**46.** What are homologous organs ? Cite one example



**Watch Video Solution**

**47.** ATAVISM



**Watch Video Solution**

**48.** "Birds have evolved from reptiles " How does palaeontology provide evidence in

support of this statement ?



**Watch Video Solution**

**49.** What is adaptive radiation ? Describes it by giving example of Darwin finches



**Watch Video Solution**

**50.** Prepare a flow chart showing the evolution of modern man in the hierarchial order of their evolution using the details given below:

Homo erectus, Homo habilis, Dryopithecus,  
Australopithecines, Homo sapiens,  
Ramapithecus, Neanderthal man.



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**51.** How many of the following are examples of homologous structures in plant :

- (a) Eyes of octopus and mammal
- (b) Potato and sweet potato
- (c) Forelimbs of whale, bat cheetah and human
- (d) Vertebrate heart



(e) Thorn of bougainvillea and tendril of cucurbita

(f) Potato and carrot

(g) Potato and radish



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**Revision Exercises Iii Short Answer Type I  
Questions Two Mark Each B Questions From  
Cbse Examinations**

1. What is divergent evolution? Explain taking an example of plants.



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2. How do Darwin's finches illustrate adaptive radiation?



**Watch Video Solution**

3. List the two main propositions of Oparin and Haldane.



**Watch Video Solution**

4. Mention the contribution of S.L. Miller's experiments on Origin of Life.



**Watch Video Solution**

5. Identify the following pairs as Homologous or Analogous organs:

A. Sweet potato and potato

B. Eye of octopus and eye of mammals

C. Thorn of Bougainvillea and tendrils of

Curcurbits

D. Forelimbs of Bat and whale

**Answer:**



**Watch Video Solution**

**6.** Explain adaptive radiation with the help of a suitable example



**Watch Video Solution**

7. What is adaptive radiation? When can adaptive radiation be referred to as convergent evolution? Give one example.



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8. Explain the interpretation of Charles Darwin when he observed a variety of small black birds on Galapagos Islands.



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9. Select the homologous structures from the combinations given below:

A. Fore limbs of whale and bats

B. Tuber of potato and sweet potato

C. Eyes of Octopus and mammals

D. Thorn of Bougainvillea and Tendril of Cucurbits

**Answer:**



**Watch Video Solution**

**10.** Mention the evolutionary significance of the following organisms :

(i) Shrews      (ii) Lobefins      (iii) Homo habilis

(iv) Homo erectus



**Watch Video Solution**

**11.** With the help of an algebraic equation, how did Hardy-Weinberg explain that in a given population the frequency of occurrence of

alleles of a gene is supposed to remain the same through generations ?



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## Revision Exercises Iv Short Answer Type Ii Questions Three Mark Each A Questions From State Board Examinations

1. What are homologous organs ? Cite one example



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2. Describe the theory of special creation



[Watch Video Solution](#)

3. Is evolution a process or the result of a process?



[Watch Video Solution](#)

4. Describe the theory of chemical evolution.



[Watch Video Solution](#)

5. Describe the postulates of Darwin's theory of evolution.



[Watch Video Solution](#)

6. Adaptive radiation.



[Watch Video Solution](#)

7. Write about the principle of "Hardy-Weinberg". Give an equation of this principle with an example



**Watch Video Solution**

8. Discuss about chemical evolution of life.



**Watch Video Solution**

**9.** What are similarities found between man and apes on the basis of molecular studies?



**Watch Video Solution**

**10.** What is a fossil ? Discuss the importance of fossils in the study of evolution.



**Watch Video Solution**

**11.** Explain Darwin's theory of evolution by natural Selection.



**Watch Video Solution**

**12.** Adaptive radiation is



**Watch Video Solution**

**13.** What is Hardy-Weinberg principle ? List the factors which affect it



[Watch Video Solution](#)

**14.** What do you mean by mutation, natural selection and reproductive isolation?



[Watch Video Solution](#)

**15.** Explain the significance of mutations in evolution.



[Watch Video Solution](#)

**16.** Discuss the modern synthetic theory of evolution.



**Watch Video Solution**

**17.** How do palaeontological evidences support organic evolution? Explain with example.



**Watch Video Solution**

**18.** "Natural selection can lead to stabilization, directional change and disruptive changes."

Explain the terms stabilization, directional change and disruptive change mentioned above.



**Watch Video Solution**

**19.** How do embryological or palaeontological evidences support the idea of organic evolution? Give two examples.







[Watch Video Solution](#)

20. (a) What are missing links? Give one example.

(b) What is atavism? Give example,



[Watch Video Solution](#)

21. What is organic evolution? Name some of the evidences given in support of organic evolution



[Watch Video Solution](#)

22. How does the population change in peppered moth, *Biston betularia*, explain natural selection?



[Watch Video Solution](#)

23. List out possible steps by which simple inorganic substances give rise to complex organic molecules which eventually give rise to first cell.



[Watch Video Solution](#)

**24.** Discuss about genetic variation in a population that leads to evolution.



[Watch Video Solution](#)

**25.** Describe the significance of Hardy-Weinberg principle.



[Watch Video Solution](#)

**26.** Define analogous organs. Give one example



**Watch Video Solution**

**27.** What are coacervates ? How were they formed ? What is their importance in origin of life ?



**Watch Video Solution**

**28.** Differentiate between missing links and connecting links, giving examples.



[Watch Video Solution](#)

**29.** What are main postulates of Lamarck's theory of acquired characters.



[Watch Video Solution](#)

**30.** Homologous organs and Analogous organs.



[Watch Video Solution](#)

**31.** Mention any three conclusions of Miller and Urey's experiment.



**Watch Video Solution**

**32.** What is mutation ? List the differences between somatic mutation and germinal mutation.



**Watch Video Solution**

### 33. Natural Selection and Artificial Selection



[Watch Video Solution](#)

### 34. Define speciation. Discuss its types.



[Watch Video Solution](#)

### 35. Distinguish between ape and man .



[Watch Video Solution](#)

**36.** What are advantages of erect posture and large brain to humans over other primates?



**Watch Video Solution**

**37.** State Hardy-Weinberg principle of genetic equilibrium. Write any four factors affecting the equilibrium



**Watch Video Solution**



**38.** Mention any three types of molecular evidences of evolution with example.



**Watch Video Solution**

**39.** By the statement 'Survival of the Fittest'. Darwin meant that



**Watch Video Solution**

**40.** Write briefly the chemical origin of life on the earth.



**Watch Video Solution**

**41.** Draw graph for three types of natural selection.



**Watch Video Solution**

**42.** Explain three salient features of mutation theory



**Watch Video Solution**

**43.** Write three connotations of the theory of special creation.



**Watch Video Solution**

**44.** Describe the natural selection giving the example of peppered moth



**Watch Video Solution**

**45. MECHANISM OF EVOLUTION**



**Watch Video Solution**

**46.** Describe Miller's experiment.



**Watch Video Solution**

**47.** Explain convergent and divergent evolution with the help of one example of each.



**Watch Video Solution**

**48.** What are connecting links ? Cite two examples



**Watch Video Solution**

**49.** Describe the basic principle of Hardy-Weinberg. What do you mean by Gene pool?



**Watch Video Solution**

**Revision Exercises Iv Short Answer Type Ii  
Questions Three Mark Each B Questions From  
Cbse Examinations**

**1.** State the theory of Biogenesis. How does Miller's experiment support this theory?



**Watch Video Solution**

2. How does industrial melanism support Darwin's theory of Natural Selection? Explain.



[Watch Video Solution](#)

3. With the help of any two suitable examples explain the effect of anthropogenic actions on organic evolution



[Watch Video Solution](#)

4. Explain the increases in the numbers of melanic(dark winged) moths in the urban areas of post-industrialisation period in England.



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5. (a) Explain adaptive radiation with the help of a suitable example.

(b) Give an example where more than one adaptive radiations have occurred in an isolated geographical area. Name the type



evolution your example depicts and state why it is so named.



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**6.** Since the origin of life on Earth, there were five episodes of mass extinction of species .

(i) How is the 'Sixth Extinction', presently in progress, different from the previous episodes ?

(ii) Who is mainly responsible for the 'Sixth Extinction' ?

(iii) List any four points that can help to overcome this disaster.



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7. What does the following equation represent ? Explain.

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



**Watch Video Solution**

8. Describe the experiment that helped Louis Pasteur dismiss the theory of spontaneous generation of life



[Watch Video Solution](#)

9. (a) Differentiate between analogy and homology giving one example each of plant and animal respectively.

(b) How are they considered as an evidence in support of evolution?





[Watch Video Solution](#)

**10.** Differentiate between homology and analogy. Give one example of each.



[Watch Video Solution](#)

**11.** How do homologous organs represent divergent evolution? Explain with the help of a suitable example.



[Watch Video Solution](#)

**12.** If  $p^2 + 2pq + q^2 = 1$ . Explain this algebraic equation on the basis of Hardy Weinberg's principle.



**Watch Video Solution**

**13.** Write the characteristics of Ramapithecus , Dryopithecus and Neanderthal man.



**Watch Video Solution**

**14.** What is disturbance in Hardy- Weinberg genetic equilibrium indicative of Explain how it is caused.



**Watch Video Solution**

**15.** Rearrange Ramapithecus, Australopithecus and Homo habilis in the order of their evolution on the Earth. Comment on their evolutionary characteristics



**Watch Video Solution**

**16.** (a) Differentiate between analogous and homologous organs.

(b) Select and write analogous structures from the list given below:

(i) Wings of butterfly and birds.

(ii) Vertebrate hearts.

(iii) Tendrils of Bougainvillea and Cucurbita.

(iv) Tubers of sweet potato and potato.



**Watch Video Solution**

**17.** Darwin on his voyage to Galapagos Islands had observed finches having different varieties of beaks. Write the explanation he gave for his observations and conclusions he arrived at



**Watch Video Solution**

**18.** What is Hardy-Weinberg principle? List the factors which affect it



**Watch Video Solution**



19. "Appearance of melanised moths post-industrialisation in England is a classic example of evolution by natural selection." Explain.



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Revision Exercises VI Long Answer Type  
Questions Five Mark Each A Questions From  
State Board Examinations

1. Give an account of primate evolution upto the appearance of Dryopithecus.



[Watch Video Solution](#)

2. Describe the Darwin's theory of natural selection



[Watch Video Solution](#)

3. Describe Modern Synthetic theory of organic evolution.



[Watch Video Solution](#)

4. Describe palaeontological evidences in support of biological evolution.



[Watch Video Solution](#)

5. Explain how are the mammals evolved?



[Watch Video Solution](#)

6. What is chemical evolution? Explain.



[Watch Video Solution](#)

7. Explain Miller and Urey experiment with the help of a neat and labelled diagram. Also write its results and conclusions



[Watch Video Solution](#)

**8.** Explain evidences of embryology and homologous and analogous organs in evolution



**Watch Video Solution**

**9.** Adaptive radiation.



**Watch Video Solution**

**10. ORIGIN AND EVOLUTION OF MAN**





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**11.** What are variations? Describe the role of variations in evolution.



[Watch Video Solution](#)

**12.** Describe the significance of Hardy-Weinberg principle.



[Watch Video Solution](#)

**13.** Describe the Darwin's theory of natural selection



**Watch Video Solution**

**14.** Explain modern synthetic theory of evolution.



**Watch Video Solution**

**15.** What are the main postulates of Lamarck's theory of organic evolution?



**Watch Video Solution**

**16.** What is meant by industrial melanism ?



**Watch Video Solution**

**17.** Describe in brief the embryological evidences in support of organic evolution



**Watch Video Solution**



**18.** What are the main points of theory of mutations proposed by Hugo de Vries or Darwin's theory of natural selection.



**Watch Video Solution**

**19.** What are the main points of Oparin - Haldane's theory of origin of life?



**Watch Video Solution**

**20.** How did Miller-Urey prove Oparin - Haldane's theory of origin of life?



**Watch Video Solution**

**21.** Describe the facts on which Darwinian theory is based upon.



**Watch Video Solution**

**22.** Describe the factors involved in the process of organic evolution.



**Watch Video Solution**

**23.** Describe the charles Darwin's theory of natural selection .



**Watch Video Solution**

**24.** Discuss modern or Oparin-Haldane theory of origin of life.



**Watch Video Solution**

**25.** What are convergent and divergent evolution? Explain with the help of examples.



**Watch Video Solution**

**26.** Describe the postulates of Darwin's theory of evolution.



**Watch Video Solution**

**27.** Explain modern or chemosynthetic theory of origin of life.



**Watch Video Solution**

**28.** Define variations. Write significance of variations.



**Watch Video Solution**

**29.** Explain modern synthetic theory of evolution.



**Watch Video Solution**

**30.** Give the salient features of the theory of Natural selection proposed by Charles Darwin.



**Watch Video Solution**

**31.** What are connecting links? Is Archaeopteryx a connecting link? Give reasons in support of your answer.



**Watch Video Solution**

## 32. A BRIEF ACCOUNT OF EVOLUTION



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33. Discuss modern or Oparin-Haldane theory of origin of life.



[Watch Video Solution](#)

34. (a) Give an example of connecting link.

(b) What is divergent evolution? Give an



example.

(c) State and explain Hardy-Weiberg's principle.



[Watch Video Solution](#)

**35.** Describe the salient features of Lamarck's theory of inheritance of acquired characters.



[Watch Video Solution](#)

**36.** Point out the differences between Darwinism and NeoDarwinism



**Watch Video Solution**

**37. (a)** "Ontogeny repeats phylogeny". Justify.

**(b)** Describe Charles Darwin's theory of natural selection.



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Revision Exercises VI Long Answer Type  
Questions Five Mark Each B Questions From  
Cbse Examinations

1. How does the process of natural selection affect Hardy-Weinberg equilibrium? Explain  
List the other four factors that disturb the equilibrium.



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2. a) Explain Darwinian theory of evolution with the help of one suitable example. State the two key concepts of the theory.

b) Mention any three characteristics of Neanderthal man that lived in near east and central Asia.



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3. (a) How did Darwin explain adaptive radiation? Give another example exhibiting

adaptive radiation.

(b) Name the scientist who influenced Darwin and how?



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4. a) How do the observations made during moth collection in pre- and postindustrialized era in England support evolution by Natural Selection?

b) Explain the phenomenon that is well

represented by Darwin's finches other than natural selection.



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5. Describe S.L. Miller's experiment. Comment on the observations he made with his contribution towards the origin of life on Earth



**Watch Video Solution**

**6. 8.** Answer the following questions based on experiment conducted by S.L. Miller in 1953:

(a) Name the gases present in the closed flask.

(b) Why was the flask fitted with electrodes?

(c) Write the observations he made.

(d) State the significance of the observations made by him.



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**Competition File Objective Type Questions A  
Multiple Choice Questions Mcqs**

1. One of the important consequences of geographical isolation is

A. Random creation of new species

B. No change in the isolated fauna

C. Preventing speciation

D. Speciation through reproductive isolation

**Answer: D**



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2. Industrial melanism as observed in peppered moth proves that

A. Melanism is a pollution-generated feature

B. The true black melanic forms arise by a recurring random mutation

C. The melanic form of the moth has no selective advantage over lighter form in industrial area

D. The lighter form moth has no selective advantage either in polluted industrial area or non-polluted area

**Answer: B**



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**3.** The concept of chemical evolution is based on

- A. Possible origin of life by combination of chemicals under suitable environmental conditions
- B. Crystallization of chemicals
- C. Interaction of water, air and clay under intense heat
- D. Effect of solar radiations on chemicals

**Answer: A**



**Watch Video Solution**

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

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

**Answer: B**



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5. Select the correct statement from the following:

A. Mutations are random and directional

B. Darwinian variations are small and directionless

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

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

**Answer: C**



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6. Which one of the following statements is correct?

A. Ontogeny repeats phylogeny

B. Stem cells are specialized cells

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

D. All plant and animal cells are totipotent

**Answer: A**



**Watch Video Solution**

7. Darwin's finches provide an excellent evidence in favour of organic evolution. These are related to which of the following evidences ?

A. Embryology

B. Palaeontology (or fossils)

C. Anatomy

D. Biogeography (or Geographic distribution)

**Answer: D**



**Watch Video Solution**

**8. Which of the following is not a vestigial organ in humans**

A. Coccyx

B. Third molar of each side in each jaw



C. Finger nails

D. Segmental muscles of abdomen

**Answer: C**



**Watch Video Solution**

9. As per geological time scale, hominids evolved during:

A. Miocene

B. Pliocene

C. Pleistocene

D. Oligocene

**Answer: B**



**Watch Video Solution**

**10. Cranial capacity of Australopithecus is:**

A.  $350 - 450\text{cm}^2$

B.  $650 - 700\text{cm}^2$

C.  $1050 - 1150\text{cm}^2$

D.  $1400 - 1450\text{cm}^2$

**Answer: B**



**Watch Video Solution**

**11. Coacervates are**

- A. Protobionts having polysaccharides + proteins + water
- B. Protein aggregates
- C. Protein and lipid aggregates

D. None of these

**Answer: A**



**Watch Video Solution**

**12.** Tendril of Cucurbita & thorns of Bougainvillea are

A. Homologous organs

B. Analogous organs

C. Vestigial organs

D. None of the above

**Answer: A**



**Watch Video Solution**

**13.** Branch of biology dealing with study of organisms in outer space is :

A. Exobiology

B. Ethology

C. Euphenics

D. Ethnology

**Answer: A**



**Watch Video Solution**

**14.** Archaeopteryx is a missing link between :

A. Pisces and Amphibia

B. Reptiles and Aves

C. Amphibia and Aves

D. Reptiles and Mammals

**Answer: B**



**Watch Video Solution**

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

A. Evidence from DNA from sex chromosomes only

B. Comparison of chromosome morphology only

C. Evidence from fossil remains and fossil mitochondrial DNA only

D. Evidence from DNA extracted from sex chromosomes, autosomes and mitochondria

**Answer: D**



**Watch Video Solution**

**16. Diversification in plant life appeared**



A. Due to long periods of evolutionary change

B. Due to abrupt mutation

C. Suddenly on earth

D. By seed dispersal

**Answer: A**



**Watch Video Solution**

**17. Which one of the following is a living fossil**

A. Moss

B. Cycas

C. Spirogyra

D. Saccharomyces

**Answer: B**



**Watch Video Solution**

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

A. Methane

B. Hydrogen

C. Oxygen

D. Water vapour

**Answer: C**



**Watch Video Solution**

**19. Who wrote the book "Genetics and Origin of Species?"**

A. A.I. Oparin

B. Th. Dobzhansky

C. Joseph Hooker

D. Charles Darwin

**Answer: B**



**Watch Video Solution**

**20.** The idea that life originates from pre-existing life is referred as :

- A. Biogenesis theory
- B. Special creation theory
- C. Abiogenesis theory
- D. Extraterrestrial theory

**Answer: A**



**Watch Video Solution**

**21. Wings of birds and butterflies are:**

- A. Homologous organs

B. Analogous organs

C. Vestigial organs

D. Grafted organs

**Answer: B**



**Watch Video Solution**

**22.** The modern man differs from the apes in

A. Protruding eyes

B. Sparse body hair

C. Wearing of clothes

D. Arms shorter than legs

**Answer: D**



**Watch Video Solution**

**23.** There are two opposing views about origin of modern man. According to one view Homo erectus in Asia were the ancestors of modern man. A study of variation of DNA however suggested African origin of modern man.

What kind of observation on DNA variation could suggest this ?

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

**Answer: C**



**Watch Video Solution**



24. 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" sheep by cloning
- C. Prevalence of pesticide-resistant insects
- D. Development of organs from "stem cells" for transplantation

**Answer: C**



**Watch Video Solution**

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

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

**Answer: D**



**Watch Video Solution**

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

A. Microbes did not appear in stored meat

B. Larvae could appear in decaying organic matter

C. Microbes appeared from unsterilised organic matter

D. Meat was not spoiled, when heated and kept sealed in a vessel

**Answer: D**



**Watch Video Solution**

27. Which of the following was formed in Stanley Miller's experiment?

A. Amino acids

B. Nucleic acids

C. UV-radiations

D. Microspheres

**Answer: A**



**Watch Video Solution**

**28.** Trilobites were evolved during which of the following period

A. Silurian

B. Cambrian

C. Ordovician

D. Precambrian

**Answer: D**



**Watch Video Solution**

**29.** Which of the following variations are temporary and have nothing to do with the last or next generation

A. Hereditary variations

B. Discontinuous variations

C. Environmental variations

D. None of the above

**Answer: C**



**Watch Video Solution**

**30.** The highest cranial capacity is/was present  
in

A. Java man

B. Peking man

C. Handy man

D. Modern man

**Answer: D**



**Watch Video Solution**

**31. Which of the following is not a vestigial organ?**

A. Tail vertebrae



B. Nails

C. Nictitating membrane

D. Appendix

**Answer: B**



**Watch Video Solution**

**32.** The idea of Natural Selection as the fundamental process of evolutionary changes was reached

A. By A. R. Wallace (1901)

B. Independently by Charles Darwin and A.

R. Wallace in 1859

C. By Charles Darwin (1866)

D. Independently by Charles Darwin and A.

R Wallace in 1909

**Answer: B**



**Watch Video Solution**

**33.** Which one of the following groups are not analogous organs

A. Wings of birds and wings of butterflies

B. Eye of octopus and eye of mammals

C. Flippers of penguin and flippers of  
dolphin

D. Thoms of Bougainvillea and tendril of  
Cucurbita /Tuberous roots of sweet  
potato and stem tuber of potato

**Answer: D**



**Watch Video Solution**

**34. First mammals appeared in the period**

A. Permian - Palaeozoic

B. Triassic – Mesozoic

C. Tertiary - Cenozoic

D. None of these

**Answer: B**



Watch Video Solution

**35.** Struggle for existence and survival of the fittest theories were given by :

A. Wallace

B. Darwin

C. Lamarck

D. None of these

**Answer: B**



**36.** Which one is linked to evolution ?

- A. Extinction
- B. Competition
- C. Variations
- D. Reproduction

**Answer: C**



37. Archaeopteryx is a connecting link between

- A. Reptiles and birds
- B. Birds and mammals
- C. Amphibians and reptiles
- D. None of these

**Answer: A**



**Watch Video Solution**

**38.** Which of the following is not a concept of Lamarck ?

A. Environmental pressure causes variations

B. Rate of survival of organism is different due to variations

C. If an organ is used continuously it will increase in size

D. Inheritance of acquired characters



**Answer: B**



**Watch Video Solution**

**39.** Presence of tail in a child is an example of :

A. Atavism

B. Divergent evolution

C. Mutation

D. Convergent evolution

**Answer: A**



[Watch Video Solution](#)

40. Hot dilute soup was given by

A. Oparin

B. Haldane

C. Urey

D. None of these

**Answer: B**



[Watch Video Solution](#)

**41.** Fossil found in Mandla district of MP is

A. 200 million years old

B. 100 million years old

C. 50 million years old

D. 20 million years old

**Answer: B**



**Watch Video Solution**

42. Mesozoic era is known as golden age of

A. Reptiles

B. Molluscs

C. Fishes

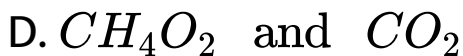
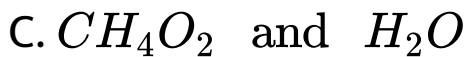
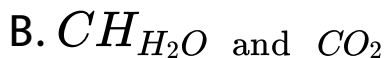
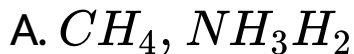
D. Amphibians

**Answer: A**



**Watch Video Solution**

43. Gases found in primitive atmosphere are



**Answer: A**



**Watch Video Solution**

44. Duck billed platypus is a connecting link between

- A. Reptiles and birds
- B. Livings and non-livings
- C. Reptiles and mammals
- D. Echinoderms and chordates

**Answer: C**



**Watch Video Solution**

**45.** Darwin finches are found in :

A. Galapagos islands

B. Tahiti

C. Tundra

D. None of these

**Answer: A**



**Watch Video Solution**

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

A. Study of carbohydrates/proteins in fossils

B. Study of the conditions of fossilization



C. Electron Spin Resonance (ESR) and fossil

DNA

D. Study of carbohydrates/proteins in rocks

**Answer: C**



**Watch Video Solution**

**47.** 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. Biogenetic law
- B. Hardy-Weinberg law
- C. Lamarck's principle
- D. Mendelian principles

**Answer: A**



**Watch Video Solution**

**48.** Darwin's Finches are an excellent example of

- A. Brood parasitism
- B. Connecting links
- C. Adaptive radiations
- D. Seasonal migration

**Answer: C**



**Watch Video Solution**

**49.** 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

**Answer: C**



**Watch Video Solution**

**50.** Which one of the following in birds, indicated their reptilian ancestry

A. Presence of crop and gizzard in their gut

B. Four-chambered heart

C. Eggs with a calcareous shell

D. Scales on their hind limbs

**Answer: D**



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

A. De vries - Natural selection

B. Weismann – Theory of continuity of  
germplasm

C. Mendel - Theory of Pangenesis

D. Pasteur - Inheritance of acquired  
characters

**Answer: B**



**Watch Video Solution**

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

A. Methane

B. Oxygen

C. Hydrogen

D. Water vapour

**Answer: B**



**Watch Video Solution**



53. Which one of the following amino-acids was not found to be synthesized in Miller's experiment

A. Glycine

B. Aspartic acid

C. Glutamic acid

D. Alanine

**Answer: D**



**Watch Video Solution**

54. The evolutionary history of an organism is known as

A. Phylogeny

B. Ancestry

C. Palaeontology

D. Ontogeny

**Answer: A**



**Watch Video Solution**

55. Human ancestors who left cave paintings were

A. Neanderthal man

B. Cro-Magnon man

C. Java ape man

D. Peking man

**Answer: B**



**Watch Video Solution**

56. The biogenetic law of Haeckel is

A. Omnis vivum-e-vivum

B. Omnis cellula-e-cellula

C. Ontogeny repeats phylogeny

D. Phylogeny repeats ontogeny

**Answer: C**



**Watch Video Solution**

57. Which of the following provides most evident proof of evolution?

A. Fossils

B. Morphology

C. Embryo

D. Vestigial organs

**Answer: A**



**Watch Video Solution**

**58.** Variations appear during meiosis due to

1. Independent assortment
2. Crossing over
3. Linkage
4. Glycolysis

Select the correct code

- A. 1, 2 and 3 are correct
- B. 1 and 2 are correct
- C. 2 and 4 are correct
- D. 1 and 3 are correct

**Answer: B**



**Watch Video Solution**

**59.** A baby has been born with a small tail. It is a case exhibiting

A. Retrogressive evolution

B. Mutation

C. Atavism

D. Metamorphosis

**Answer: C**



**Watch Video Solution**

**60.** Appearance of ancestral characters in the new borns, such as tail, monstral face, gill slits, multiple mammae etc. are known as

Or

Presence of tail in a child is an example of

A. Atavism

B. evolution



C. Convergent evolution

D. Mutation

**Answer: A**



**Watch Video Solution**

**61.** Hot dilute soup was given by

A. Oparin

B. Haldane

C. Urey

D. None of these

**Answer: B**



**Watch Video Solution**

**62.** Mesozoic era is known as golden age of

A. Reptiles

B. Molluscs

C. Fish

D. Amphibians

**Answer: A**



**Watch Video Solution**

**63.** 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 years old

**Answer: C**



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

- A. Evolution
- B. Limiting factors
- C. Saltation
- D. Natural selection

**Answer: D**



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65. Industrial melanism was highlighted by

- A. *Mimosa pudica*
- B. *Triticum aestivum*
- C. *Biston betularia*
- D. Rock python

**Answer: C**



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66. The plant in which Hugo de Vries introduced the concept of mutation

A. *Oenothera lamarckiana*

B. *Pisum sativum*

C. *Allium cepa*

D. *Mirabilis jalapa*

**Answer: A**



**Watch Video Solution**

67. Which one of the following is a living fossil

A. Abies

B. Ginkgo biloba

C. Ephedra

D. Taxus

**Answer: B**



**Watch Video Solution**

**68.** H.M.S. Beagle is associated with which scientist?

A. Darwin

B. Lamarck

C. Wallace

D. Columbus

**Answer: A**



**Watch Video Solution**



69. Which of the following is the earliest era

A. Cenozoic

B. Mesozoic

C. Palaeozoic

D. Pre-Cambrian

**Answer: D**



**Watch Video Solution**

70. Wings of birds and forelimbs of horse are \_\_\_\_\_ organs

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

**Answer: B**



**Watch Video Solution**

71. Sickle cell anemia is most resistant to which disease

A. Malaria

B. Filaria

C. Dengue

D. Chicken pox

**Answer: A**



**Watch Video Solution**

72. Closely related varying different in trait expresses

A. Convergent evolution

B. Divergent evolution

C. Parallel evolution

D. None of these

**Answer: C**



**Watch Video Solution**

**73.** New unit of evolution is called:

A. Population

B. Genus

C. Order

D. Species

**Answer: A**



**Watch Video Solution**

**74.** S.L Miller's closed flask contained

A.  $CH_4$

B.  $H_2$

C.  $NH_2$  and water vapour

D. All of these

**Answer: D**



**Watch Video Solution**

**75.** Change of frequency of alleles in a population results in evolution is proposed in

:

A. Darwin's theory

B. Lamarck's theory

C. Hardy-Weinberg principle

D. De Vries theory

**Answer: C**



**Watch Video Solution**

**76.** Which one of the following is the vestigial organ in human beings

A. Nictitating membrane

B. Spleen

C. Femur

D. Tibia

**Answer: A**



**Watch Video Solution**

**77. Golden age of reptile was :**

A. Cenozoic era



B. Palaeozoic era

C. Mesozoic era

D. Silurian period

**Answer: C**



**Watch Video Solution**

**78.** "Ontogeny repeats phylogeny"—is

commonly called as:

A. Biogenetic law

B. Law of embryology

C. Law of acquired characters

D. Law of Bridges

**Answer: A**



**Watch Video Solution**

**79.** The cranial capacity of Homo erectus was

A. 800-1300 c.c

B. 1650 C.C.

C. 650 cc.

D. 1400 cc.

**Answer: A**



**Watch Video Solution**

**80.** One of the following theories was proposed by Weismann :

A. Law of inheritance

B. Theory of inheritance of acquired characters

C. Theory of continuity of germplasm

D. Theory of natural selection

**Answer: C**



**Watch Video Solution**

**81.** Thorn of Bougainvillea and tendrils of Cucurbita are examples of :

A. Vestigial organs

B. Retrogressive organs

C. Analogous organs

D. Homologous organs

**Answer: D**



**Watch Video Solution**

**82.** 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. Natural selection whereby the darker forms were selected

B. Appearance of darker-coloured individuals due to very poor sunlight

C. Protective mimicry

D. Inheritance of darker-coloured character acquired due to darker environment

**Answer: A**



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**83.** Pythons possess tiny leg bones that serve no purpose in locomotion. Such organs are:

A. Homologous organs

B. Analogous organs

C. Vestigial organs

D. Both

**Answer: C**



84. Two critical steps in the evolution of humans were the :

A. Evolution of bipedism and enlargement of brain

B. Making and using of tools

C. Exhibiting culture and having sophisticated tools

D. Using fire and making shelters



**Answer: A**



**Watch Video Solution**

**85.** Which one of the following was not given by Darwin's theory of evolution

A. Struggle for existence

B. Overproduction

C. Natural selection

D. Genetic drift

**Answer: D**



**Watch Video Solution**

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

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

**Answer: C**



**Watch Video Solution**

**87.** Which of the following is a connecting link between mammals and reptiles

A. Peripatus

B. Balanoglossus

C. Ornithorhynchus

D. Archaeopteryx

**Answer: C**



**Watch Video Solution**

**88.** Miller and Urey performed an experiment to prove the origin of life. They took gases :

A. Methane, ethane, ammonia, water vapours

B. Methane, ammonia, hydrogen, water vapours

C. Methane, ethane, hydrogen, ammonia

D. Ammonia, water vapour, butane,  
hydrogen

**Answer: B**



**Watch Video Solution**

**89.** Haeckel's biogenetic law is

A. Ontogeny repeats phylogeny

B. Phylogeny repeats ontogeny

C. Every organism is produced by its parents

D. Reproductive isolation

**Answer: A**



**Watch Video Solution**

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

A. Cretaceous

B. Triassic

C. Jurassic

D. Permian

**Answer: C**



**Watch Video Solution**

**91.** Ultimate source of organic variation is the process which provide raw materials for evolution is

Or

The concept of sudden genetic change which breeds true in a species is represented as

- A. Sexual reproduction
- B. Meiosis
- C. Mutation
- D. Independent assortment

**Answer: C**



**Watch Video Solution**



92. On the basis of hereditary material, the most closest relative of man is :

A. Chimpanzee

B. Gorilla

C. (c) Orangutan

D. Gibbon

**Answer: A**



**Watch Video Solution**

93. The prehistoric man which lived on earth during late pleistocene period

A. Neanderthal man

B. Australopithecus

C. Cro-magnon man

D. Atlantic man

**Answer: A**



**Watch Video Solution**

**94.** According to the theory of mutation by Hugo de Vries

A. Only small mutations take part in evolution

B. Only large mutations take part in evolution

C. Both small and large mutations cause variations in species

D. None of these

**Answer: C**



**Watch Video Solution**

**95.** A living connective link which provides evidence for organic evolution

- A. Sphenodon between reptile and bird
- B. Lung fishes between fishes and reptiles
- C. Archaeopteryx between reptile and bird

D. Duck billed platypus between reptiles & mammals

**Answer: D**



**Watch Video Solution**

**96.** Which of the following are not analogous organs ?

A. Fins of fishes and flippers of whale

B. Stings of honey bee and scorpion

C. Thom of Bougainvillea and tendril of

Cucurbita

D. Wings of insects and pterodactyl

**Answer: C**



**Watch Video Solution**

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

A. Jurassic

B. Triassic

C. Cretaceous

D. Permian

**Answer: C**



**Watch Video Solution**

**98.** According to abiogenesis, life originated from

A. Non-living

B. Pre-existing life

C. Chemicals

D. Extra-terrestrial matter

**Answer: A**



**Watch Video Solution**

**99.** Darwin judged the fitness of an individual  
by



A. Ability to defend itself

B. Strategy to obtain food

C. Number of offsprings

D. Dominance over other individuals

**Answer: C**



**Watch Video Solution**

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

A. Continental drift

B. Collision of earth with large meteorites

C. Massive glaciation

D. Change in earth's orbit

**Answer: B**



**Watch Video Solution**

**101.** Reproductive isolation between segments of a single populations is termed

A. Sympatry

B. Allopatry

C. Population divergence

D. Disruptive divergence

**Answer: A**



**Watch Video Solution**

**102.** Industrial melanism is an example of

- A. Defensive adaptation of skin against UV-radiations
- B. Drug resistance
- C. Protective resemblance with the surrounding
- D. Darkening of skin due to industries

**Answer: C**



**Watch Video Solution**

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

A. Ramapithecus → Australopithecus

→ Homo habilis → Homo erectus

B. Australopithecus → Ramapithecus

→ Homo habilis → Homo erectus

C. Pithecanthropus → Pekinensis →

Homo habilis → Homo erectus

D. Australopithecus → Ramapithecus

→ Pithecanthropus → Homo erectus

**Answer: A**



**Watch Video Solution**

**104.** Which one of the following was not explained by Darwinism?

A. Natural selection

B. Struggle for existence

C. Arrival of the fittest

D. Origin of species

**Answer: C**



**Watch Video Solution**

**105.** Ontogeny recapitulates phylogeny is narrated in which of the evidences for organic evolution ?

A. Palaeontological evidences

B. Physiological evidences

C. Embryological evidences

D. Anatomical evidences

**Answer: C**



**Watch Video Solution**

**106.** Miller -Urey's experiment mixture had the following except:

A. Methane



B.  $CO_2$

C. Hydrogen

D. Water vapours

**Answer: B**



**Watch Video Solution**

**107.** Which one does not confirm to the theory of "Biogenesis"?

A. Francisco Redi's experiment

B. Spallanzani's experiment:

C. Louis Pasteur's experiment

D. Von Helmont's experiment

**Answer: D**



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**108.** 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 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 vapours , (ii) amino acids

(C) - (i) Rudimentary, (ii) anatomical

D. (c)- (i) vestigial, (ii) anatomical (D) - (i)

Mutations , (ii) multiplication

**Answer: A**



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**109.** 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 brain size

**Answer: D**



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110. Darwin's finches are a good example of

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

**Answer: C**



**Watch Video Solution**

**111.** Connecting link between annelida and mollusca is

A. Peripatus

B. Neopilina

C. Proterospongia

D. Archaeopteryx

**Answer: B**



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**112.** 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 the same function

C. Organs appearing in embryonic stage and disappearing later in the adult

D. Organs that have no function now but had important functions in ancestors



**Answer: A**



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**113.** According to Darwin, evolution is .....

- A. A sudden but discontinuous process
- B. A slow, gradual and continuous process
- C. A slow, sudden and discontinuous process
- D. A slow and discontinuous process

**Answer: B**



**Watch Video Solution**

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

A. Oxygen

B. Water

C. Methane

D. Ammonia

**Answer: A**



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**115.** Which of the following statements is incorrect?

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

B. de Vries - Mutation theory

C. Louis Pasteur - Germ theory of diseases  
and immunology

D. Lemaitre — Big Bang theory

**Answer: A**



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**116.** Dinosaurs were present during the

A. Palaeozoic era

B. Mesozoic era

C. Cenozoic era

D. Proterozoic era

**Answer: B**



**Watch Video Solution**

**117.** Choose the correct series of human evolution :

A. Dryopithecus → Homo erectus →

Australopithecus → Cromagnon man

B. Australopithecus → Homo erectus →

Neanderthal → Homo sapiens

C. Australopithecus → Ramapithecus

→ Dryopithecus → Homo sapiens

D. Homo erectus → Australopithecus →

Cromagnon → Neanderthal

**Answer: B**



**View Text Solution**

**118.** Biogenetic law was proposed by

A. Hugo de Vries

B. Darwin

C. Haeckel

D. Lamarck

**Answer: C**



**Watch Video Solution**

**119.** The first fossil evidence of fossil dates back from :

- A. 4 billion years ago
- B. 3.5 billion years ago
- C. 4.5 billion years ago
- D. 2.5 billion years ago

**Answer: B**



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**120.** The first seed plants appeared during

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

**Answer: C**



**Watch Video Solution**

**121.** In which era, did life originate?

A. Precambrian

B. Proterozoic

C. Mesozoic

D. Cenozoic

**Answer: A**



**Watch Video Solution**

**122.** The theory of "germplasm" for organic evolution was put forward by :

A. Darwin

B. Lamarck

C. Weismann

D. Muller

**Answer: C**



**Watch Video Solution**

**123.** Another term for adaptive evolution is

A. Clinal change

B. Micro-evolution

C. Macro-evolution

D. Speciation

**Answer: C**



**Watch Video Solution**

**124.** The primate which existed 15 mya was

A. Homo habilis

B. Australopithecines

C. Ramapithecus

D. Homo erectus

**Answer: C**



**Watch Video Solution**

**125.** Single step large mutation leading to speciation is also called

A. Founder effect

B. Saltation

C. Branching descent

D. Natural selection

**Answer: B**



**Watch Video Solution**

**126.** Retrogressive metamorphosis occurs in

A. Hemichordata

B. Cephalochordata

C. Urochordata

D. Vertebrata

**Answer: C**



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**127.** The scientific name of Java man is:

A. Homo habilis

B. Homo sapiens neanderthalensis

C. Homo erectus erectus

D. Australopithecus bisei

**Answer: C**



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**128.** The vestiges of girdles are found in

A. Cobra

B. Krait

C. Rattle snake

D. Python

**Answer: D**





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

- A. Upright posture
- B. Shortening of jaws
- C. Binocular vision
- D. Increase in brain capacity

**Answer: D**



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**130.** Presence of recombinants is due to :

A. Crossing over

B. Linkage

C. Lack of independent assortment

D. All of the above

**Answer: A**



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

A. Cenozoic, mesozoic, palaeozoic,  
precambrian

B. Cenozoic, palaeozoic, mesozoic,  
precambrian

C. Precambrian, Cenozoic, palaeozoic,  
mesozoic

D. Precambrian, palaeozoic, mesozoic,  
cenozoic

**Answer: D**



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**132.** Example of homologous structures is/are

- A. Optic lobes of brain
- B. Cerebrum of brain
- C. Heart of vertebrates

D. All of the above

**Answer: D**



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**133.** According to Darwin, diversity in Australian marsupials is an example of :

A. Convergent evolution

B. Adaptive radiations

C. Parallel evolution

D. Parallel radiation

**Answer: B**



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**134.** Which one among the following is an example for homology

A. Eyes of octopus and mammals

B. Tuber of sweet potato and potato

C. Wings of butterfly and birds

D. Thom and tedrill of Bouginvillea and cucurbita

**Answer: D**



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**135.** The brain capacity of Homo erectus was

A. 650 c.c.

B. 900 C.C.

C. 1200 c.c.

D. 1400 c.c.

**Answer: B**



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**136.** Who proposed that the first form of life could have come from pre-existing non-living organic molecules ?

A. S.K. Miller

B. Oparin and Haldane



C. Charles Darwin

D. Alfred Wallace

**Answer: B**



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**137.** Fossilised faecal materials are known as

A. Coprolites

B. Compressions

C. Moulds

D. Casts

**Answer: A**



**Watch Video Solution**

**138.** Age of fishes is

A. Permian era

B. Silurian era

C. Devonian era

D. Ordovician era

**Answer: C**



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**139.** The theory of random genetic drift was proposed by :

- A. Swell Wright
- B. Hardy-Weinberg
- C. R.A. Fischer
- D. Meyer

**Answer: A**



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**140.** The concept of inheritance of acquired characters in support of evolution was proposed by:

A. Darwin

B. Cuvier

C. Lamarck

D. De Vries

**Answer: C**



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**141.** Wings of birds and wings of flies perform similar functions so they are examples of

- A. Homologous organs
- B. Analogous organs
- C. Evolutionary organs
- D. Paralogous organs.

**Answer: B**



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**142.** Analogous organs are :

A. Anatomically different but performing similar functions

B. Anatomically similar but performing different functions

C. Anatomically similar and functionally similar

D. Anatomically different and functionally different

**Answer: A**



**Watch Video Solution**

**143.** Tendrils in plants are an example of

A. Convergent evolution

B. Radiations

C. Divergent evolution

D. Co-evolution

**Answer: C**



**Watch Video Solution**

**144.** What is meant by the term Darwin fitness?

A. Ability to survive and reproduce



B. High aggressiveness

C. Healthy appearance

D. Physical strength

**Answer: A**



**Watch Video Solution**

**145.** Cranial capacity of modern man is

A. 450-650  $\text{cm}^3$

B. 600-900  $\text{cm}^3$

C. 900-1000 ^ 3

D. 1200-1600 ^ 3

**Answer: D**



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**146.** Lamarckism cannot explain

A. Webbed toes in aquatic birds

B. Weak muscles in son of a wrestler

C. Long, narrow and limbless body of snakes

D. Heterophyly

**Answer: B**



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**147.** Coacervates belongs to the category of :

A. Cyanobacteria

B. Protozoans

C. Molecular aggregates

D. Molecular aggregates surrounded by  
lipid membrane

**Answer: D**



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**148.** Organic compounds first evolved on earth  
and required for origin of life were

A. Urea and amino acids

B. Proteins and nucleic acids

C. Proteins and amino acids

D. Urea and nucleic acids

**Answer: B**



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**149.** Homologous organs indicate

A. Convergent evolution

B. Parallel evolution

C. Common descendant

D. Natural selection

**Answer: C**



**Watch Video Solution**

**150.** Related species which are reproductively isolated but morphologically similar are called

A. Sibling

B. Sympatric

C. Allopatric

D. Morphospecies

**Answer: A**



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

A. Homo habilis

B. Australopithecus

C. *Ramapithecus punjabicus*

D. *Homo neanderthalensis*

**Answer: C**



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

A. Adaptive radiation



B. Natural selection

C. Migration

D. Divergent evolution

**Answer: A**



**Watch Video Solution**

**153.** 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

**Answer: C**



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**154.** The prehistoric ancestor of man which existed during late pleistocene, is

Or

The extinct human who lived 1,00,000 to 40,000 years ago, in Europe, Asia and parts of africa, with short stature, heavy eyebrows, 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

**Answer: B**



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**155.** A potential danger to a population that has been greatly reduced in number is the

- A. Hardy-Weinberg disequilibrium
- B. Tendency towards assortative mating
- C. Reduced gene flow
- D. Loss of genetic variability

**Answer: D**



**156.** An isolated population of humans with approximately equal numbers of blue-eyed and brown-eyed individuals was decimated by an earthquake. Only a few brown-eyed people remained to form the next generation. This kind of change in the gene pool is called a

- A. Hardy-Weinberg equilibrium
- B. Blocked gene flow
- C. Bottle neck effect

D. Founder effect

**Answer: C**



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**157.** Biogenetic law as given by Haeckel states that

A. Ontogeny recapitulates phylogeny

B. Phylogeny recapitulates ontogeny

C. Ontogeny and phylogeny go together

D. There is no relationship between ontogeny and phylogeny

**Answer: A**



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

A. Convergent evolution

B. Continuous evolution

C. Adaptive radiation

D. Parallel evolution

**Answer: C**



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**159.** The origin of mammal like reptiles occurred in

A. Triassic period



B. Permian period

C. Jurassic period

D. Tertiary period

**Answer: B**



**Watch Video Solution**

**160.** In his classic experiment on the formation of amino acids. Stanley Miller passed an electric discharge in a mixture of

Or

Stanley Miller has put the Oparin-Haldane theory to test in 1953 by creating in the laboratory, the probable condition of the primitive earth. In the experiment, simple amino acids were synthesized from which of the following mixture as observed after 18 days

A.  $H_2$ ,  $O_2$ ,  $N_2$  and  $H_2O$

B.  $CH_4$ ,  $CN$ ,  $H_2$  and  $O_2$

C.  $H_2$ ,  $NH_3$ ,  $CH_4$  and water vapours

D.  $NH_3$ ,  $CH_4$  and  $O_2$

**Answer: C**



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**161.** An aquatic living fossil, with ancient origin and many primitive characters which respire through book gills is

A. Limulus

B. Cancer

C. Lucifer

D. Daphnia

**Answer: A**



**Watch Video Solution**

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

A. Ramapithecus

B. Australopithecus

C. Dryopithecus

D. Homo erectus

**Answer: B**



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**163.** Gorilla, chimpanzee, man and monkey belong to the same:

A. Order

B. Family

C. Genus

D. Species

**Answer: A**



**Watch Video Solution**

**164.** Peripatus is a connecting link between

A. Arthropoda and Mollusca

B. Aves and Reptilia

C. Annelida and Arthropoda

D. Aves and Mammalia

**Answer: C**



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**165.** Presence of tail in a human baby is an example of :

- A. Vestigial organ
- B. Adaptive radiation
- C. Natural selection
- D. Atavism

**Answer: D**



**166.** Recapitulation theory was given by

A. Dollo

B. Haeckel

C. Darwin

D. Mac Dougall

**Answer: B**



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**167.** Species inhabiting the same geographical areas are known as:

- A. Allopatric species
- B. Synchronic species
- C. Allochronic species
- D. Sympatric species

**Answer: D**



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**168.** Cenozoic era is the :

- A. Age of mammals
- B. Age of reptiles
- C. Age of amphibians
- D. Age of fishes

**Answer: A**



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**169.** Read the following statements and choose the correct option

A. Increase in melanized moths after industrialization in Great Britain is a proof for natural selection

B. When more individuals of a population acquire a mean character value, it is called disruption

C. Changes in allelic frequency in a population will lead to Hardy Weinberg equilibrium

D. Genetic drift changes the existing gene or allelic frequency in future generations

- A. B-alone is correct
- B. D-alone is correct
- C. A and D alone are correct
- D. B and D alone are correct

**Answer: C**



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**170.** Which one of these was a flying dinosaur

- A. Triceratops

B. Tyrannosaurus

C. Stegosaurus

D. Pteranodon

**Answer: D**



**Watch Video Solution**

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

- A. (a) Natural selection
- B. (b) Convergent evolution
- C. (c) Non-random evolution
- D. (d) Adaptive radiation

**Answer: B**



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

A. Random mating

B. Lack of migration

C. Lack of mutations

D. Lack of random mating

**Answer: D**



**Watch Video Solution**

**173.** According of Darwin, the organic evolution is due to

A. Intraspecific competition

B. Interspecific competition

C. Competition between closely related species

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

**Answer: A**



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

A. Homologous organs evolved due to convergent evolution

B. Homologous organs evolved due to divergent evolution

C. Analogous organs evolved due to convergent evolution

D. Analogous organs evolved due to divergent evolution.

**Answer: C**



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

A. Genetic flow

B. Genetic drift

C. Random mating

D. Genetic load

**Answer: B**



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**176.** Flowering plants seem to have originated from

A. Chlorophyte ancestors

B. Tracheophyte ancestors

C. Rhymia type ancestors

D. Psilophytes

**Answer: D**



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**177.** Charles Darwin returned to England in 1836 from his five year expedition and published his observations and conclusions in a book in November:

A. 1838

B. 1839

C. 1859

D. 1861

**Answer: C**



**View Text Solution**

**178.** In his laboratory apparatus, Stanley Miller synthesized:

A. Proteins

B. DNA

C. Amino acids

D. Protobionts

**Answer: C**



**View Text Solution**

**179.** Which gas was probably least abundant in the early atmosphere?

A.  $H_2O$

B.  $O_2$

C.  $NH_3$

D.  $CO_2$

**Answer: B**



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

A. Rudimentary ear muscles and third molars

B. Coccygeal tail vertebrae and scalp muscles

C. Vermiform appendix and nictitating membrane

D. Ear pinna, patella, olecranon process

**Answer: D**



**Watch Video Solution**



**181.** Wing of pigeon is homologous to the :

- A. Ear of bat
- B. Wing of butterfly
- C. Foreleg of horse
- D. Tail of rabbit

**Answer: C**



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**182.** Reptiles evolved into:

A. Birds

B. Amphibians

C. Fishes

D. None of these

**Answer: A**



**View Text Solution**

**183.** The brain capacity of Neanderthal man was:

A. 650 c.c.

B. 800 c.c.

C. 900 c.c.

D. 1400 c.c.

**Answer: D**



**Watch Video Solution**

**184.** First amphibian evolved from:

A. Lobe finned fishes

B. Turtle

C. Tortoise

D. None of these

**Answer: A**



**View Text Solution**

**185.** The brain capacity of Homo erectus was

A. 650 CC

B. 850 CC

C. 900 CC

D. 1400 CC

**Answer: C**



**Watch Video Solution**

**186.** Homologous organs support .....  
evolution.

A. Divergent

B. Convergent

C. Both a and b

D. Darwin's theory

**Answer: A**



**Watch Video Solution**

**187.** The first human-like hominid was called:

A. Homo erectus

B. Australopithecus

C. Homo habilis

D. Ramapithecus

**Answer: D**



**Watch Video Solution**

**188.** 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

**Answer: C**



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**189.** 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. Thorn of Bougainvillea and tendril of Cucurbita
- D. Flippers of dolphin and legs of horse

**Answer: B**



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**190.** 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. 0.6

B. 0.7

C. 0.4

D. 0.5

**Answer: A**



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**191.** The first human- like being - the hominid - was called

- A. Homo erectus
- B. Homo habilis
- C. Homo sapiens
- D. None of the above

**Answer: B**



**Watch Video Solution**

**192.** Homo erectus had a brain about:

A. 650 cc

B. 750 cc

C. 800 cc

D. 900 cc

**Answer: D**



**Watch Video Solution**

**193.** Which of the following was man-like:

A. Ramapithecus

B. Australopithecus

C. Dryopithecus

D. None of these

**Answer: A**



**View Text Solution**

**194.** Which of the following had the smallest brain capacity

A. Homo erectus

B. Homo sapiens

C. Homo neanderthalensis

D. Homo habilis

**Answer: D**



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

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

**Answer: A**



**Watch Video Solution**

**196.** 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**



**Watch Video Solution**

**197.** Industrial melanism is an example of

A. Neo-Darwinism

B. Natural selection

C. Mutation

D. Neo-Lamarckism

**Answer: B**



**Watch Video Solution**

**198.** The first human-like hominid was called:

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

**Answer: D**



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**199.** Oparin and Haldane proposed:

A. Theory of Natural selection

B. That migration affects genetic equilibrium

C. First form of life could have come from pre-existing non-living organic molecules

## D. Mutation-caused speciation

**Answer: C**



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**200.** Which of the following gas was not used by Miller in his experiment ?

A.  $CH_4$

B.  $NH_3$

C.  $H_2$

D.  $O_2$

**Answer: D**



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**201.** How many million years ago, the jaw-less fishes probably evolved ?

A. 250

B. 320

C. 350

D. 500

**Answer: C**



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**202. Mammals evolved from:**

A. Birds

B. Reptiles

C. Amphibians

D. None of these

**Answer: B**



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**203.** Eyes of mammals and octopus are an example of:

- A. Convergent evolution
- B. Divergent evolution
- C. Adaptive radiation
- D. None of these

**Answer: A**



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**204.** Palaeontology is the study of

A. Insects

B. Birds

C. Fossils

D. All of the above

**Answer: C**





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205. Stanley Miller and Urey proved abiotic origin of life by using one of the following sets of chemicals in the lab:

A.  $CH_4, H_2$  and  $NH_3$

B.  $CH_4, H_2, NH_3, O_2$

C.  $CH_4$  and  $NH_3$

D.  $CH_4, H_2, O_2$

**Answer: A**



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**206.** 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 the past.

B. They are the remains of decayed and decomposed body parts

C. Fossils present in the lower strata of the earth are older than those present in the upper strata

D. Study of fossils in different sedimentary layers indicates the geological period in which they existed.

**Answer: B**



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**207.** Development hybrid varieties of plants and better milk yielding varieties of cows is an example of:

- A. Natural selection
- B. Artificial selection
- C. Mutation
- D. Divergent evolution

**Answer: B**



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**208.** According to the theory of spontaneous generation :

A. Life originated from outer space

B. Life came from pre-occurring life

C. Life originated from decaying and rotting matter like straw, mud, etc.

D. Life came from both living and non-living matter

**Answer: C**



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**209.** The first fossil of *Australopithecus* was discovered in

- A. Olduvai, Tanzania
- B. Fayum deposits of Egypt
- C. Siwalik hills in India
- D. Taung in South Africa

**Answer: D**



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210. The reptiles , like dinosaurs were dominant in .....period.

A. Cretaceous

B. Jurassic

C. Tertiary

D. Triassic

**Answer: B**



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**211.** Darwin's theory of evolution cannot explain :

- A. Arrival of the fittest
- B. Natural selection
- C. Prodigality of production
- D. Struggle for existence

**Answer: A**



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212. Select the correct match :

A. Gibbon-Cercopithecoidea

B. Lemur-Prosimii

C. New World Monkey - Hominoidea

D. Tarsier - Anthropoidea

**Answer: B**



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**213.** Select the correct pair :

A. Adaptive radiation - Darwin's finches

B. Connecting link - Swall-Wright effect

C. Genetic drift - Peppered moth

D. Industrial melanism - Archaeopteryx

**Answer: A**



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**214.** Genetic drift operates in

A. Slow reproductive population

B. Small isolated population

C. Large isolated population

D. Non-reproductive population

**Answer: B**



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

A.  $q^2$

B.  $p^2$

C.  $2pq$

D.  $pq$

**Answer: C**



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

A. Australopithecus → Homo habilis →

Ramapithecus → Homo erectus

B. Australopithecus → Ramapithecus →

Homo habilis → Homo erectus

C. Ramapithecus → Australopithecus

Homo habilis → Homo erectus

D. Ramapithecus → Homo habilis →

Australopithecus → Homo erectus

**Answer: C**



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**217.** 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. ii, iii, iv, i

B. i, ii, iii, iv

C. i, iii, ii, iv

D. ii, iii, i, iv

**Answer: D**



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**218.** Interspecific hybridization is the mating of

A. More closely related individuals within  
the same breed for 4-6 generations

B. Animals within the same breed without  
having common ancestor

C. Two different related species

D. Superior males and females of different  
breeds

**Answer: C**

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

- A. Flipper of whale
- B. Dorsal fin of a shark
- C. Wing of a moth
- D. Hind limb of rabbit

**Answer: A**



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**220.** Analogous structures are a result of

- A. Stabilizing selection
- B. Divergent evolution
- C. Convergent evolution
- D. Shared ancestry

**Answer: C**



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**221.** Following are the 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 (i) and (ii) are false

B. (i) is correct but (ii) is false

C. (i) is correct but (ii) is false

D. Both (i) and (ii) are correct

**Answer: D**



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**222.** Lamarckism was based on:

A. Natural selection

B. Survival of the fittest

C. Inheritance of acquired characters

## D. Mutations

**Answer: C**



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**223.** The missing link between reptiles and birds was:

A. Dimetrodon

B. Dodo

C. Archaeopteryx

D. Sphenodon

**Answer: C**



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**224.** First life on the Earth were:

A. Autotrophs

B. Cyanobacteria

C. Photoautotrophs

D. Chemoheterotroph

**Answer: D**



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**225.** The book "Philosophie Zoologique" was written by :

A. Darwin

B. Hugo - de - Vries

C. Lamarck

D. Weissmann

**Answer: C**



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**226. Missing link in evolution is :**

A. Peripatus

B. Limulus

C. Archaeopteryx

D. Pheretima

**Answer: C**





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**227.** Artificial selection to obtain cows yielding higher milk output represents

A. Stabilising selection as it stabilizes this character in the population

B. Directional selection as it pushes the mean of character in one direction

C. Disruptive selection as it splits population into two: one higher yielding

output and other lower output

D. Stabilising selection followed by

disruptive selection as it stabilizes the

population to produce higher yielding

COWS

**Answer: B**



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**228.** Humans belong to the order

A. Mammalia

B. Primata

C. Hominidae

D. Pongidae

**Answer: B**



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**229.** The first probable fossil man was:

A. Australopithecus

B. Ramapithecus

C. Homo habilis

D. Pithecanthropus

**Answer: A**



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**230.** Which of the following is not a vestigial organ in man ?

A. Nail

B. Tail vertebrae

C. Wisdom tooth

D. Vermiform appendix

**Answer: A**



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**231.** In the solar system, earth was supposed to have been formed about

A. 200 bya

B. 4.5 mya

C. 4.5 bya

D. 400 mya

**Answer: C**



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**232.** The scientist who by careful experimentation demonstrated that life comes only from preexisting life.

A. Oparin

B. Haldane

C. Louis Pasteur

D. Darwin

**Answer: C**



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**233.** Which naturalist had said that evolution of life occurred by use and disuse of organs?

A. Louis Pasteur

B. de Vries

C. Lamarck

D. Darwin

**Answer: C**



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**234.** Which scientist stated that it is the mutation which causes evolution and not the minor variations?



A. Oparin

B. Lamarck

C. de Vries

D. Darwin

**Answer: C**



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**235.** Which of the following sets of gases were used in Miller's experiment?

A.  $CH_4$ ,  $NO_2H_2O$ ,  $CO_2$

B.  $NH_3$ ,  $CH_3$ ,  $H_2O$ ,  $H_2$

C.  $H_2$ ,  $CH_4$ ,  $NH_3$ ,  $H_2O$

D.  $H_2O$ ,  $N_2CH_4$ ,  $H_2$

**Answer: C**



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**236.** The study of fossils is

A. Gerontology

B. Phycology

C. Palynology

D. Palaeontology

**Answer: D**



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**237. Who was famous Indian Palaeontologist?**

A. T.H. Morgan

B. Prof-Birbal Sahni

C. Sutton

D. G.J. Mendel

**Answer: B**



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**238.** The technique by which age of the fossil can be calculated?

A. Carbon dating

B. Ornithology

C. Mycology

D. None of these

**Answer: A**



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

A. Fore limbs of man, bat and cheetah

B. Brain of bat, man and cheetah

C. Heart of bat, man and cheetah

D. Eye of octopus, bat and man

**Answer: D**



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

Or

The similarity of bone structure in the

forelimbs of many vertebrates is an example  
on

A. Homology

B. Convergent evolution

C. Analogy

D. Adaptive radiation

**Answer: A**



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**241.** According to Hugo de Vries, the mechanism of evolution is

A. Multiple step mutations

B. Phenotypic variations

C. Saltation

D. Minor mutations

**Answer: C**



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242. Match the hominids with their correct brain size



Select the correct option.

A. 1 - (iii), 2 - (i), 3 - (iv), 4 - (ii)

B. 1 - (iii), 2 - (ii), 3 - (i), 4 - (iv)

C. 1 - (iii), 2 - (iv), 3 - (i), 4 - (ii)

D. 1 - (iv), 2 - (iii), 3 - (i), 4 - (ii)

**Answer: C**



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**243.** Variations caused by mutation, as proposed by Hugo de Vries, are:

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

**Answer: B**



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**244.** Coelacanth was a :

A. Invertebrate

B. Fish

C. Amphibians

D. Reptile

**Answer: B**



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245. Which fish-like reptiles evolved probably 200 mya ?

A. Tyrannosaurus

B. Ichthyosaurs

C. Pelecosaurs

D. None of these

**Answer: B**



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**246.** In 1938, Coelacanth was caught from:

A. North America

B. South America

C. India

D. South Africa

**Answer: D**



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247. How many mya, the jawless fish probably evolved?

A. 320

B. 350

C. 400

D. 500

**Answer: C**



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# Competition File Objective Type Questions B

## Matching Type Questions

1. Match the terms in Column A with suitable terms in Column B,



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2. Match the terms in Column A with suitable terms in Column B,





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**3.** Match the terms in Column A with suitable terms in Column B,



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**4.** Match the terms in Column A with suitable terms in Column B,





## Competition File Objective Type Questions C Assertion Reason Type Questions

1. Assertion : Continued use of eyes leads to an improvement of eyesight.

Reason : Isolating mechanisms prevent reproduction even between the members of same species.

A. If both Assertion and Reason are true and Reason is a correct explanation of

Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of Assertion.

C. If Assertion is true but Reason is false

D. If both Assertion and Reason are false

**Answer: D**



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2. Assertion : Mutations are basically different from fluctuations.

Reason: Mutations are sudden discontinuous and large variations, while fluctuations are small and continuous variations

A. If both Assertion and Reason are true and Reason is a correct explanation of Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation

of Assertion.

C. If Assertion is true but Reason is false

D. If both Assertion and Reason are false

**Answer: A**



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**3. Assertion :** Best adapted and less adapted individuals reproduce at the same rate.

**Reason:** Natural selection favour them equally.

A. If both Assertion and Reason are true and Reason is a correct explanation of Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of Assertion.

C. If Assertion is true but Reason is false

D. If both Assertion and Reason are false

**Answer: D**



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4. Assertion : Lederberg's experiment explains the genetic basis of adaptations in bacteria.

Reason: Certain bacterial cells become penicillin-resistant in response to penicillin.

A. If both Assertion and Reason are true and Reason is a correct explanation of Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation

of Assertion.

C. If Assertion is true but Reason is false

D. If both Assertion and Reason are false

**Answer: C**

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5. Assertion : Polyploidy helps in rapid speciation.

Reason : Interspecific sterile hybrids become fertile due to doubling of chromosome

number leading to normal pairing of chromosomes and normal meiosis.

A. If both Assertion and Reason are true and Reason is a correct explanation of Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of Assertion.

C. If Assertion is true but Reason is false

D. If both Assertion and Reason are false



**Answer: A**



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**6. Assertion (A) :** Amphibians have evolved from fishes .

**Reason (R ) :** Archaeopteryx is a fossil linking fishes and amphibians :

A. If both Assertion and Reason are true and Reason is a correct explanation of Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of Assertion.

C. If Assertion is true but Reason is false

D. If both Assertion and Reason are false

**Answer: C**



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7. Assertion: Coacervates are believed to be the precursors of life. Reason : Coacervates were self-duplicating aggregates of proteins surrounded by lipid molecules.

A. If both Assertion and Reason are true and Reason is a correct explanation of Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of Assertion.

C. If Assertion is true but Reason is false

D. If both Assertion and Reason are false

**Answer: A**



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

**Reason :** The banding pattern in the autosome

numbers 3 and 6 of man and chimpanzee is remarkably similar.

A. If both Assertion and Reason are true and Reason is a correct explanation of Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of Assertion.

C. If Assertion is true but Reason is false

D. If both Assertion and Reason are false

**Answer: A**



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**9. Assertion :** From evolutionary point of view, human gestation period is believed to be shortening.

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

A. If both Assertion and Reason are true and Reason is a correct explanation of Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of Assertion.

C. If Assertion is true but Reason is false

D. If both Assertion and Reason are false

**Answer: B**



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**10.** Natural selection is the outcome of difference in survival and reproduction among individuals that show variation in one or more traits.

Reason : Adaptive forms of a given trait tend to become more common, less adaptive ones become less common or disappear.

A. If both Assertion and Reason are true  
and Reason is a correct explanation of  
Assertion



B. If both Assertion and Reason are true but Reason is not a correct explanation of Assertion.

C. If Assertion is true but Reason is false

D. If both Assertion and Reason are false

**Answer: A**



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**11. Assertion (A) :** The earliest organisms that appeared on the Earth were non-green and presumably anaerobis.

**Reason (R ) :** The first autotrophic organisms were the chemoautotrophs that never released oxygen.

A. If both Assertion and Reason are true and Reason is a correct explanation of Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of Assertion.

C. If Assertion is true but Reason is false

D. If both Assertion and Reason are false

**Answer: B**



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**12. Assertion :** Human ancestors never used their tails and so the tails expressing gene has disappeared in them.

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

A. If both Assertion and Reason are true and Reason is a correct explanation of Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of Assertion.

C. If Assertion is true but Reason is false

D. If both Assertion and Reason are false

**Answer: D**



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**13. Assertion:** Coacervates are believed to be the precursors of life. **Reason :** Coacervates were self-duplicating aggregates of proteins surrounded by lipid molecules.

A. If both Assertion and Reason are true and Reason is a correct explanation of Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of Assertion.

C. If Assertion is true but Reason is false

D. If both Assertion and Reason are false

**Answer: C**



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**14.** Assertion : Chimpanzee is the closest relative of present day humans.

Reason : The banding pattern in the autosome number 3 and 6 are remarkably similar.

A. If both Assertion and Reason are true and Reason is a correct explanation of Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of Assertion.

C. If Assertion is true but Reason is false

D. If both Assertion and Reason are false

**Answer: A**



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**15. Assertion :** king cobra is adaptive to oriental realm.

**Reason :** Wallace line prevents interaction of king cobra and kangaroo.

A. If both Assertion and Reason are true and Reason is a correct explanation of Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation

of Assertion.

C. If Assertion is true but Reason is false

D. If both Assertion and Reason are false

**Answer: C**



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**Chapter Practice Test Section A Multiple Choice  
Questions One Mark Each**

1. Atmosphere of the primitive earth was characterised by:

A. Abundance of  $NH_3$  and  $CO_2$

B. Absence of oxygen

C. Absence of radiation belt

D. All of these

**Answer: D**



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2. Which of the following human type was discovered on the banks of Solo river?

A. African ape man

B. Java ape man

C. Peking man

D. Neanderthal man

**Answer: B**



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3. Select the example of analogous organs out of the following:

A. Thorn of Bougainvillea and tendril of Cucurbita

B. Sweet potato and potato tuber

C. Both of these

D. None of these

**Answer: B**



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4. Which one of the following is not vestigial?

A. Flipper of seal

B. Coccyx in man

C. Splint bone of horse

D. Wings of kiwi

**Answer: A**



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5. Which type of selection is industrial melanism observed in moth, *Biston betularia*?

A. Stabilising

B. Directional

C. Disruptive

D. Artificial

**Answer: B**



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6. Who was the famous Indian palaeontologist?

A. T.H. Morgan

B. Sutton Boveri

C. Birbal Sahni

D. ) Salim Ali

**Answer: C**



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# Chapter Practice Test Section B Short Answer

## Type I Questions Two Mark Each

1. Define adaptive radiation. Give one example.



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2. Why is Protopterus called a connecting link?



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3. Why there is no accumulation of organic compounds and origin of life presently?.



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4. How does the phylogeny of horse prove the process of evolution?



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5. Differentiate between allopatric speciation and sympatric speciation.



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## Chapter Practice Test Section C Short Answer Type II Questions Three Mark Each

1. What is Hardy-Weinberg principle? Which factors affect the principle? Give its significance.



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2. Describe the theory of chemical evolution



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3. Draw graph for three types of natural selection.



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4. What do you mean by "Ontogeny repeats phylogeny" ? Is it true or false? Support your answer with two evidences



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## Chapter Practice Test Section D Case Based Short Answer Three Mark Each

1. Organic evolution is supported by a number of evidences. One of these are morphological and anatomical evidences - based on

comparative studies of external and internal structural features. Observe the following diagram and answer the questions listed below the diagram:



- (i) Whether the structures are homologous or analogous organs? Justify your
- (ii) Which type of evolution is indicated by these diagrams?
- (iii) Give one more example of such type of evolution.



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2. (a) Discuss postulates of Darwin's theory of natural selection.

(b) List two differences between Darwinism and Neo-Darwinism.



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