

2 MARKS EACH

1. State the reason for the increased population of dark coloured moth with the loss of lichens during industrialization period in England.
2. Sweet potato tubers and potato tubers are the result of convergent evolution .Justify the statement.
3. What is the significance of biochemical similarity amongst diverse organism in evolution.
4. What is Chance mutation? Explain the phenomenon using application of DDT as an example.
5. Give two examples of bio geographical evidences in favour of evolution.
6. A chimpanzee can hold objects by its hand & an elephant by trunk. Are these organs Analogous or they are homologous?
7. Differentiate between convergent & divergent evolution?
8. Bring out differences between De Vries mutations and Darwinian Variations?
9. What is the study of fossils called? Mention any three points how the fossils throw light on past life?
10. If you discovered a fossil bird with scales on the body & teeth in the beak. What would you conclude about its position in the animal kingdom?
11. What is speciation? List any two events that lead to speciation?
12. Would you consider wings of butterfly & wings of a bat as homologous or Analogous organs and why?
13. Define natural selection? Who else along with Charles Darwin proposed it as the mechanism of evolution?
14. Why has natural selection not eliminated sickle – cell anaemia?
15. Life originated from the earth's inorganic atmosphere in the past, but this can no longer happen today. Give two reasons?
16. Can we call human evolution as adaptive radiation? State the reason for your answer.

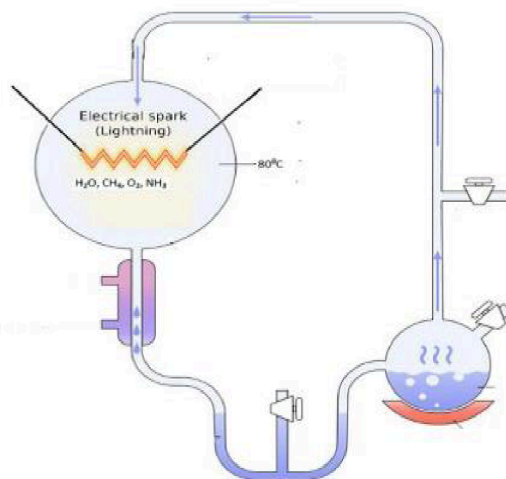
3 MARKS EACH

1. By taking industrial melanism as an example, explain the concept of natural selection by evolution?
2. Who were the two scientists that conducted an experiment to synthesize organic molecule abiotically? How did they provide the probable condition of the primitive earth in this experiment?
3. What is Biogenetic law? How does comparative embryology provide evidence for evolution?
4. Chemical Insecticides remain useful only for a limited time. Explain with reference to evolution with a suitable example.
5. How do Darwin's finches illustrate adaptive radiation? Explain. Q6. Explain the salient features of Hugo de Vries theory of mutation.
7. What are the facts that support Darwin's theory of Natural selection?
8. Explain the increase in the numbers of melanic moths in the urban areas of post industrialization period in England.
9. Trace the important events or stages of human development?

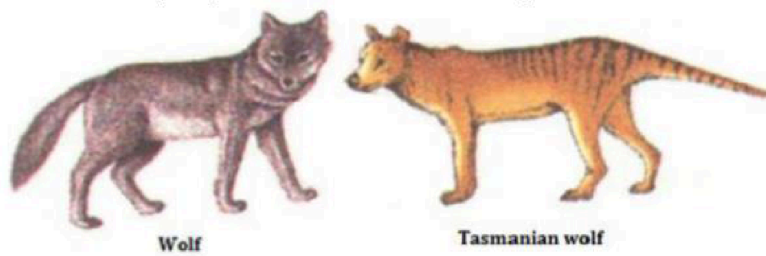
10. What are the three different ways in which selection may occur? 11. State in what ways Stanley miller simulated the condition of :-
- (a) The Primitive atmosphere on earth. (b) Energy source at the time of origin of life.
(c) Formation of organic molecule of life.
12. Explain antibiotic resistance observed in bacteria in light of Darwinian selection theory.
13. What is Biogeography? How Darwin's finches provide bio-geographical evidence in favour of evolution?
14. Birds have evolved from reptiles. How does paleontology provide evidence in support of the above statement?
15. How did Louis Pasteur successfully demolish the popular theory of spontaneous generation?
16. Discovery of lobefins is considered very significant by evolutionary biologists. Explain.

3 MARKS EACH

1. (i) Select the homologous and analogous structure from the combination given below:
- (a) The Forelimb of whale and bat
(b) The Tuber of potato and sweet potato
(c) Thorns of Bougainvillea and tendrils of Cucurbita
(d) Eyes of octopus and eyes of mammals
- (ii) State the kind of evolution they represent.
2. A student was simulating Urey and Miller's experiment to prove the origin of life. The set up used by the student is given –



- (a) Find out the reasons why he could not get the desired results.
(b) What conclusion was drawn by Urey and Miller through this experiment?
(c) Compare the conclusion drawn with the theory of spontaneous generation
3. Refer to the figure given below and answer the questions that follow:



- Explain the process by which the Tasmanian wolf evolved.
- Name the process that has resulted in evolution of wolf and the Tasmanian wolf.
- Compare and contrast the two animals shown above?

5 MARKS EACH

- What does Oparin – Haldane hypothesis about origin of life suggests?
- What does Hardy Weinberg's principle states? What are the factors which affects Hardy Weinberg's equilibrium?
- Fitness is the end result of the ability to adapt and get selected by nature. Explain with suitable example.
- Trace the origin and evolution of man.