Chapter 7

EVOLUTION

1mark each

1. Sickle cell anemia is a fatal disease. Why have its genes not been eliminated by natural selection as yet?
2. Which were the first mammals to inhabit the earth? Name a mammal that lives wholly in water.
3. Define convergent evolution.
4. Name the animal thought to ancestors of amphibians. When did the dinosaurs disappear?
5. Name the plant that De Vries worked with, on which he based his mutation theory.

2 marks each

1. Name any 2 organs from the plant kingdom that shows analogy.
2. How can reproductive isolation bring about the formation of a new species?
3. Write a short note on the evolution of man.
4. The following figure shows a diagrammatic representation of one the effects of natural selection. How would you explain the phenomenon?
5. How do homologous and analogous organs support the theory of evolution?
6. A chimp can hold objects with his hands but an elephant with his trunk. Are these structures homologous or analogous? Justify.
7. Explain the concept of Neo-Darwinism

3 marks each

1. Name any 3 organs homologous to the human hand.
2. Mutations cause evolutionary jumps. Justify the statement with the help of an example.
3. Explain the concept of adaptive radiation with the help of an example.
4. Explain Hardy Weinberg Law. State 3 factors that are known to affect the Hardy Weinberg equation
5. How did industrial melanism in *Biston betularia* (Moth) prove the genetic basis of adaptation?

6. Taking examples from anatomy and embryology, prove that evolution does take place.

5 marks each

1) Stanley and Miller performed an experiment by recreating in the lab the probable conditions of the atmosphere of the primitive earth.

(a) What was the purpose of the experiment?

(b) In what form was the energy supplied for the chemical reactions to occur?

(c) What were the energy forms available on primitive earth?

(d) For how long was the experiment run?

(e) What was the result of the experiment?