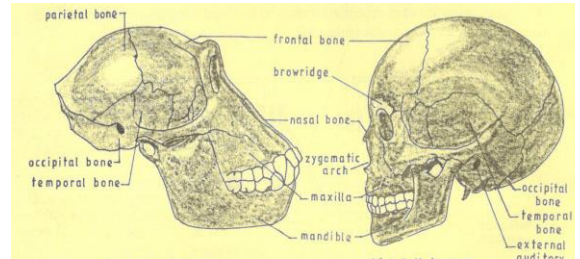


2. EVOLUTION-Revision questions.

1. State the difference between Lamarckian and Darwinian theories of evolution. (2mks)
2. a) What is meant by natural selection? (1mk)
b) State two advantages of natural selection. (2mks)
c) Using examples, explain how natural selection takes place/ brings about adaptation of a species to its environment. (10mks)
3. Two populations of the same species of birds were separated over a long period of time by an ocean. Both populations initially fed on insects only. Later it was observed that one population fed entirely on fruits and seeds, although insects were available. Name this type of evolutionary change. (1mk)
4. Give a reason why it is only mutation in genes of gametes that can influence evolution. (1mk)
5. Discuss the various evidences, which show that evolution has taken place. (20mks)
8. State two advantages of natural selection to organisms. (2mks)
9. Give reason why each of the following is important in the study of evolution:
 - a) Fossils records. (1mk)
 - b) Comparative anatomy. (1mk)
10. a) What is organic evolution? (1mk)
b) Explain the role of mutation in variation. (2mks)
11. State two ways in which *Home sapiens* differs from *Homo habilis*. (2mks)
12. With suitable examples explain the following terms:
 - a) Divergent evolution. (2mks)
 - b) Convergent evolution. (2mks)
13. Distinguish between:
 - a) Analogous and homologous structures. (2mks)
 - b) Struggle for existence and survival for the fittest. (2mks)
14. What is meant by the following terms:
 - a) Organic evolution. (1mk)
 - b) Continental drift. (1 mark)
15. Explain continental drift as an evidence of evolution. (3mks)
16. (a) What is adaptive radiation? (1mk)
(b) Give a reason why organisms become resistant to drugs. (2mks)
17. a) What is a fossil? (1mk)
 - c) How does convergent evolution occur? (2mks)
 - c) State two limitations of fossils as an evidence of evolution/ in retracing evolutionary history of living organisms. (2mks)
 - d) State the importance of fossils to the study of evolution. (2mks)
18. a) i) What is meant by vestigial structures? (1mk)
ii) Give an example of a vestigial structure in human. (1mk)
b) Explain why certain drugs become ineffective in curing a disease after many years of use. (2mks)
19. a) State **two** ideas proposed by Lamarck in his theory of evolution. (2mks).
b) Why is Lamarck's theory not acceptable? (1mk)
c) What is the role of Lamarck's theory of evolution? (2mks)
20. Explain how comparative embryology is an evidence for organic evolution. (2mks)
21. State the importance of divergent evolution to organisms. (2mks)
22. State the theories of evolution proposed by the following scientists.
 - a) Charles Darwin. (1mk)
 - b) Jean – Baptiste de Lamarck. (1mk)
23. State the evidence of evolution based on;
 - (i) Cell organelles. (1mk)
 - (ii) Fossils (1mk)
24. Explain the theory of evolution by natural selection. (2mks)
25. Explain the role of continental drift in evolution. (3mks)

26. During a lesson, students observed the structure of bat, cat and human forelimbs to determine their evolutionary relationship.
 - a) State the name given to the structure of the limbs observed. (1mk)
 - b) Name the type of evolution illustrated by the structure of the limbs observed. (1mk)
 - c) What evidence of evolution of evolution is illustrated by the limbs? (1mk)
 - d) State the significance of the type of evolution illustrated by the limbs. (1mk)
27. The diagram below illustrates the skulls of an adult human and chimpanzee.



- a) State one difference between the two skulls in the following structures. (3mks)

	Structure	Chimpanzee skull	Human skull
i)	Parietal bones		
ii)	Mandible		
iii)	Browridge		

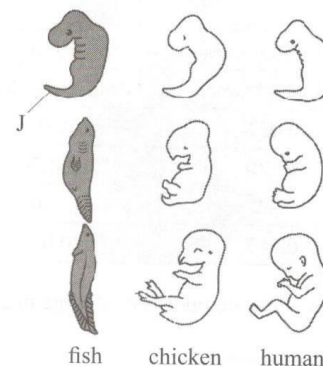
- b) State the significance of the evolution observed on the parietal bone in the chimpanzee and human skulls. (1mk)

28. Study the photographs below of some animals in a certain ecosystem and answer the questions that follow.



Explain the concept of "survival for the fittest" in relation to the organisms illustrated in the photograph. (3mks)

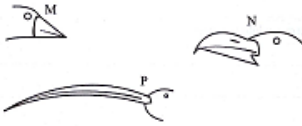
29. Below are diagrams representing developmental stages of different vertebrates.



- a) State the evidence of evolution illustrated by the vertebrates in the diagram. (1mk)
- b) Suggest why the structure labeled J has been retained throughout the evolution of fish. (2mks)
- c) State two major advantages evolution has given over most of the other animals. (2mks)

30. State three methods of fossil formation. (3mks)

31. The diagrams below illustrate some forms of beaks in birds.



- a) Which diagram represents the beak from which the others are likely to have evolved? (1mk)
- b) Explain your answer in a) above. (3mks)

32. a) Define the term analogous structures. (1mk)

- b) Give two illustrations of analogous structures in mammals. (2mks)

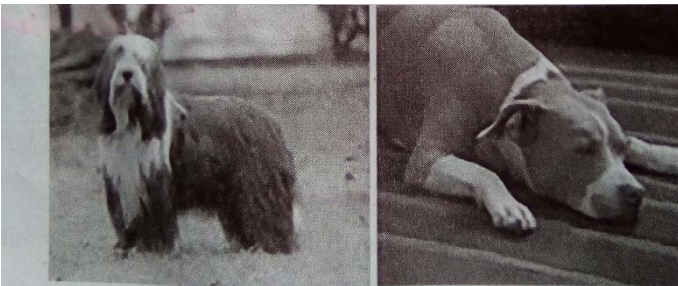
c) What does the term evolution mean? (1mk)

33. The spread of melanic form of peppered moth (*Biston betularia*) in the industrial town of Britain is an example of natural selection. Explain how it took place. (10mks)

34. a) Explain why fossil records as evidence of organic evolution are usually incomplete. (3mks)

- b) Name the evidence of organic evolution exhibited by occurrence of similar amino acid molecules in a range of organisms. (1mk)

35. Below are photographs of two dogs.



Explain the possible reason for the difference in the length of their fur. (2mks)

36. Explain the evolutionary basis for ever changing drugs for malaria treatment. (2mks)

37. Describe cell biology as an evidence of organic evolution. (3mks)

38. Explain the biological significance of completing a dose of antibiotics. (3mks)

39.