

NAME: _____ ADM NO. _____

SCHOOL _____ DATE _____

CANDIDATE'S SIGNATURE _____

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BIOLOGY PAPER ONE (THEORY)

FORM FOUR

MARCH/APRIL 2013

TIME: 2 HOURS.

BARINGO NORTH TRIAL EXAMINATIONS- 2013

Kenya Certificate of Secondary Education (K.C.S.E.)

FORM FOUR BIOLOGY PAPER ONE.

INSTRUCTIONS TO CANDIDATES

- Write your details in the spaces provided
- Answer all the questions in the spaces provided.

FOR EXAMINERS USE ONLY

QUESTION	Maximum score	Candidates scores
1-30	80	
CANDIDATES TOTAL		

This paper consists of 8 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no question is missing.

1. What is biology? (1 mark)

2. Give two skills gained by a student learning Biology. (2 marks)

3 a) Name the unit of classification that has the least organisms. (1 mark)

b) State the application of Binomial nomenclature in naming organisms. (1 mark)

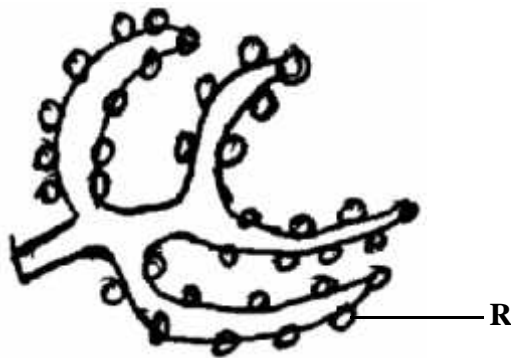
4. What is the importance of using a hand lens in classification of organisms (1 mark)

5. Give the function of each of the following parts of a light microscope

i) Revolving nose piece. (1 mark)

ii) Condenser. (1 mark)

6. The following is a drawing of a cell structure.



i) Identify the cell structure. (1 mark)

ii) Give the function of the part labelled R. (1 mark)

7. Which organelle would be abundant in a:

i) Sperm cell. (1 mark)

ii) Palisade cell. (1 mark)

8. Distinguish between diffusion and active transport. (2 marks)

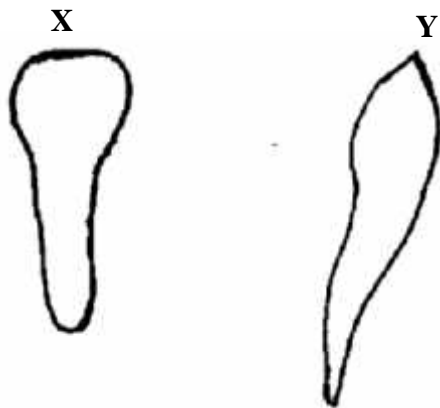
9. Give two importance of nutrition in living organisms. (2 marks)

10. Name the organism that exhibits the following mode of feeding;

i) Herbivorous (1 mark)

ii) Carnivorous (1 mark)

11. Below are diagrams of mammalian teeth



Giving a reason identify each type of tooth

X _____ (1 mark)

Reason: _____

Y _____ (1 mark)

Reason _____

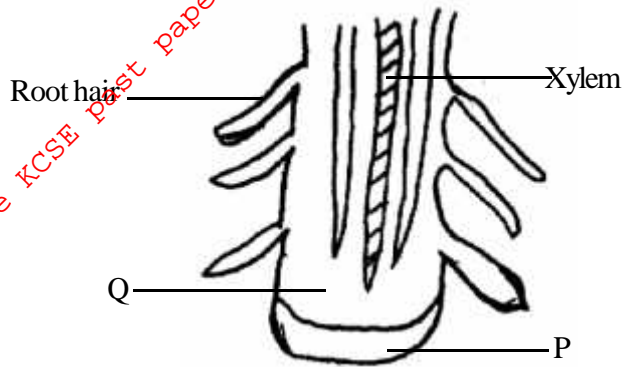
12 a) State the importance of each of the following steps when testing for non-reducing sugars:

i) Boiling food sample with dilute hydrochloric acid. (1 mark)

ii) Adding sodium hydrogen carbonate to a mixture of food sample with dilute Hcl. (1 mark)

b) What causes emulsification in human body (1 mark)

13. Below is a longitudinal section through a dicotyledonous root tip



i) Name the type of cells found in part Q (1 mark)

ii) Give the function of the part labelled P (1 mark)

14. What is the importance of cohesion and adhesion forces in transpiration. (2 marks)

15. How do the following structural adaptations minimize the rate of transpiration?

i) Leaf folding (1 mark)

ii) Thick waxy cuticle (1 mark)

16. State the role of the following in mammalian heart

i) Semilunar valves (1 mark)

ii) Cuspid valves (1 mark)

17. What makes the osmotic pressure of guard cells fall at night. (1 mark)

18. Where does gaseous exchange take place in plant stems (1 mark)

19. Explain the importance of respiratory surfaces being

i) Thin walled (1 mark)

ii) Moist (1 mark)

20. A land insect died when its abdomen was completely smeared and covered with Vaseline jelly. Explain (2 marks)

21. a) Suggest two reasons why animals require specialized excretory organs as compared to plants. (2 marks)

b) Name the part of the nephron where counter current flow occur. (1 mark)

22. Give the difference between respiration and gaseous exchange. (2 marks)

23. State the uses of the following plant excretory products:

i) Quinine (1 mark)

ii) Rubber (1 mark)

24. Name the type of asexual reproduction exhibited by members of monera kingdom (1 mark)

25. Give two conditions necessary for the growth of fungi (2 marks)

26. State three (3) classes of the sub division Gymnospermaphyta. (3marks)

b) Give one structural difference between a monocotyledonous and a dicotyledonous leaf. (1 mark)

c) While walking through the school play ground, a student came across an organism with the following descriptions:-

-A pair of antennae

-Two pairs of wings

-Segmented abdomen

-Three pair of legs

i) Give the phylum and the class that the organism belong.

-Phylum _____

-Class _____

(2 marks)

ii) Name the three body parts in the organism. (3 marks)

27 a) What instrument is used to measure humidity. (1 mark)

b) State three requirements for estimation of population size using the quadrat method. (3 marks)

Give two effects of radioactive emissions (2 marks)

28. a) Mention the causal organism of:-

i) Cholera (1 mark)

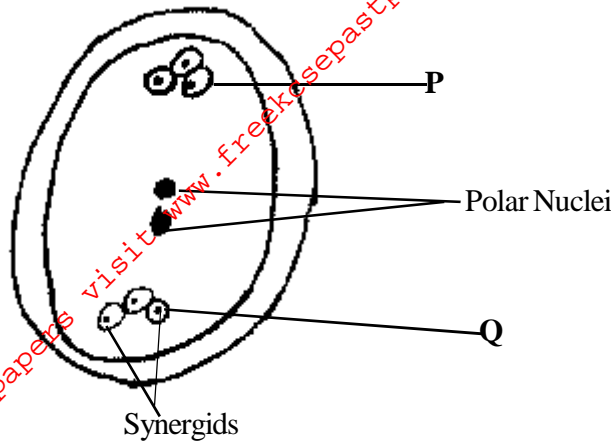
ii) Malaria (1 mark)

b) Give two symptoms of typhoid (2 marks)

c i) What is reproduction? (1 mark)

ii) How is reproduction important to living organisms? (2 marks)

29. Below is a diagram of a mature embryo sac



i) Name the type of cells labelled P (1 mark)

ii) What is the role of the part labelled Q (1 mark)

30 a) What is the role of each of the following hormones in a female human being

i) Luteinising hormone. (1 mark)

ii) Progesterone. (1 mark)

b) Give two internal factors in a seed that affect seed germination. (2 marks)

c) Define the first Mendel law of heredity. (1 mark)

d) Distinguish between homologous and analogous structures. (2 marks)
