KENYA NATIONAL EXAMINATION COUNCIL
REVISION MOCK EXAMS 2016
TOP NATIONAL SCHOOLS

STRATHMORE SCHOOL

BIOLOGY THEORY

PAPER 1

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STRATHMORE SCHOOL KCSE TRIAL AND PRACTICE EXAM 2016

231/1
BIOLOGY
PAPER 1
(THEORY)
TIME: 2 HOURS

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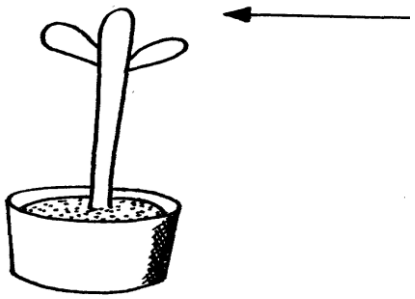
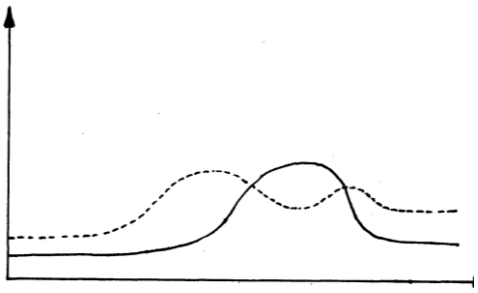
1. The scientific name for French bean is *Pharseolus vulgaris*
   (a) What taxon does the term Phaseolus represents? (1 mark)
   (b) State **two** rules that are followed when giving a scientific name to an organism. (2 marks)
2. a) What is the function of the mirror in the microscope? (1 mark)
   b) Which organelle would be abundant in: Skeletal muscle cell (1 mark)
   Palisade cell (1 mark)
3. A seedling shoot was exposed to unidirectional light as shown below. The set up was left in the dark room for three days.



   i) Make a drawing of the expected results at the end of the experiment. (2 marks)
   ii) Explain the expected results at the end of experiment. (2 marks)
4. State **two** advantages of breathing through the nose than through the mouth. (2 marks)
5. Name **two** mineral elements required in the synthesis of chlorophyll. (2 marks)
6. a) State **two** environmental condition that can cause seed dormancy. (2 marks)
   b) Name the part of the leaf that elongates to bring about epigeal germination. (1 mark)
7. a) State the function of amylase in human body. (1 mark)
   b) Name **two** parts of the alimentary canal where amylase is secreted. (2 marks)
8. a) Name **two** photochemical cells in human retina. (1 mark)
   b) Name **one** chemical substance and two mineral ions involved in impulse transmission in mammals. (2 marks)
9. Give the function of melanin pigment produced in the skin of man. (1 mark)
10. What is the importance of saprophytic bacteria in an ecosystem? (1 mark)
11. A student while carrying out an experiment observed 8 cells across the field of view of light microscope. If the diameter of the field of view is 5 mm, calculate the average length of each cell in micrometers. (2 marks)
12. State **one** feature present in the flowers that can be used to distinguish between a monocotyledonous flower and dicotyledonous flower. (1 mark)
13. The graph below shows levels of oestrogens and progesterone during the human menstrual cycle.

   a) Mark on the graph the curve that represents



i) Progesterone
ii) Oestrogen

b) Which is the most likely day of ovulation from the graph? (1 mark)

14. a) What are fossils? (1 mark)

b) State **two** limitations of the use of fossils as an evidence of evolution. (2 marks)

i) Grasshopper (1 mark)

ii) Sheep (1 mark)

16. Name the type of response shown by;

a) Leaves of *Mimosa pudica* when they fold after being touched. (1 mark)

b) Sperms when they swim towards ovum (1 mark)

c) Euglena when they swim towards the source of light. (1 mark)

17 a) Give an example of sex linked trait on x-chromosome. (1 mark)

b) Below is a nucleotide strand. (1 mark)

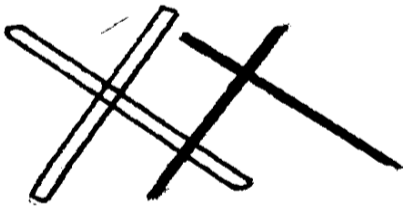
A	A	G	T	C

i) Identify the type of nucleoic acid strand. (1 mark)

ii) Give your reason for your answer in (b) (i) above. (1 mark)

iii) Write down the complimentary base sequence in the other strand. (1 mark)

18. The diagram below shows a stage in cell division



i) Name the stage of the cell division that exhibits the process above. (1 mark)

ii) What is the significance of the phenomenon shown to a species? (1 mark)

19. Differentiate between respiration and respiratory surface. (2 marks)

20. State **two** adaptations of skin of the frog to gaseous exchange. (2 marks)

a) A man's urine gave a positive reaction with Benedict's solution. Name the disease he was suffering from. (1 mark)

b) State **two** ways in which the symptoms of the condition in (a) can be controlled. (2 marks)

22. A student collected an organism in the school compound and noted it had a segmented body and two pairs of legs per body segment.

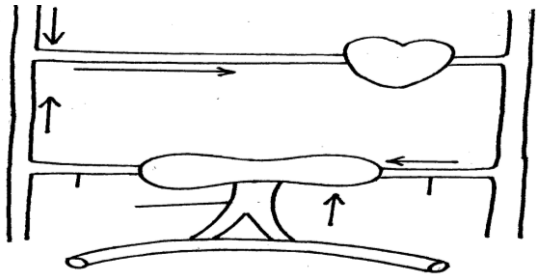
i) Name the class to which the organism belongs. (1 mark)

ii) State **two** other features the student may have observed. (2 marks)

23 a) Name **two** structures of gaseous exchange in aquatic plants. (2 marks)

b) What is the effect of contraction of the diaphragm muscles during breathing in mammals? (2 marks)

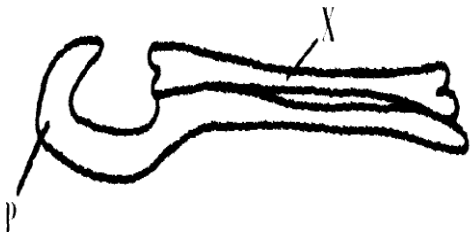
24. The diagram below represents part of the mammalian blood circulatory system and some associated glands.



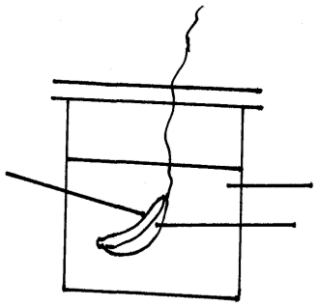
(a) Name the blood vessels **A** and **B** (2 marks)

(b) State **two** structural differences between the blood vessels labelled **A** and **C** (2 marks)

25. A student made equidistant marks on a radical of a dicotyledonous seedling. After three days the distance between the marks was measured.
    a) What was the aim of the experiment? (1 mark)
    b) Predict the results that were likely to be obtained by the student (2 marks)
26. a) Name the disease caused by H.I.V (1 mark)
    b) Give **two** reason why it is difficult to cure the disease named above. (2 marks)
    c) Give **one** preventive measure of the named disease. (1 mark)
27. Plants of a particular species grown in certain habitat flower at the same time. What is the importance of this adaptation (1 mark)
28. State **two** roles played by the bark in plants (2 marks)
29. The diagram below represents a bone obtained from a mammal.



    i) Name bone labelled **X.** (1 mark)
    ii) Name structure **P.** (1 mark)
30. A student mashed a piece of ripe banana and made it into paste by adding water, place the paste in a visking tubing and suspended it in a beaker containing iodine solution as shown below. The set up was left for 40 minutes.



    a) State the physiological process under investigation. (1 mark)
    b) Account for the result obtained in the table. (2 marks)
31. Industrial waste may contain metallic pollutants. Explain how the pollutants may indirectly reach and accumulate in the human body when the wastes are dumped into rivers (2 marks)
32. During oxidation of certain foods substances the respiratory quotient was found to be 0.718.
    i) Name the type of food substance being oxidized. (1 mark)
    ii) State **two** advantages of using the food substances named. (2 marks)