

NAME _____ CLASS _____

DATE _____ SIGNATURE _____

BIOLOGY
FORM 1
2ND TERM 2015
2 HRS.

Kenya Certificate of Secondary Education
BIOLOGY
FORM ONE 2ND TERM EXAMINATION 2015

Instructions

- Answer all the questions in the spaces provided
- Write your name and your class in spaces provide

For Examiner's Use Only

	Questions	Maximum score	Candidates score
A	1 - 17	50	
B	18-22	50	
	Total	100	

This paper consists of 10 printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.

SECTION A (50 MARKS)
Answer all the questions in spaces provided

1. State two functions of centrioles in a cell. (2 marks)
- _____
- _____
- 2.a) In which part of the chloroplasts does each of the following take place?
- i) Light stage. (1 mark)
- _____
- ii) Dark stage. (1 mark)
- _____
- b) State one product of dark reaction in photosynthesis. (1 mark)
- _____
3. A student was using a microscope whose eye piece lens was marked x4. The lower and higher objectives were marked x10 and x40 respectively. The diameter of the field of view under the low power was 3.8mm. Determine the diameter of field of view under high power. (2 marks)
- _____
- _____
- 4.(i) Name the main product of the dark stage of photosynthesis. (1 mark)
- _____
- (ii) State the importance of chlorophyll in photosynthesis. (2marks)
- _____
- _____
5. State the function of the following
- a) Coarse adjustment Knob. (1mark)
- _____
- _____
- b) Diaphragm. (1mark)
- _____
- _____

6. State the type of solution that makes the plant cell:- (2marks)
i) Flaccid

ii) Turgid

7. State the functional difference between lysosomes and ribosomes. (2marks)

8. State three skills acquired through the study of biology. (3marks)

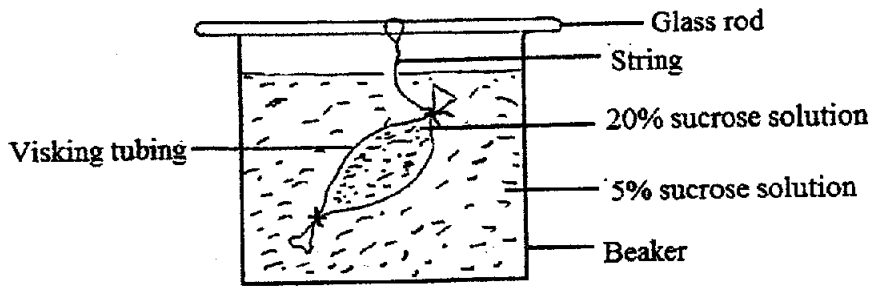
9. (a) Name any two physiological processes that take place across a cell membrane (2marks)

(b) The cell membrane is semi permeable. Explain. (1mark)

10. Explain the importance of each of the following in photosynthesis. (2marks)
a) Broad leaf lamina.

b) Thin leaf. (1mark)

11. An experiment was set up as shown in the diagram below.



- (a) Which process is being investigated by the above experiment? (1mark)
-
- (b) State the expected results. (1mark) 2mks
-
- (c) Explain your answer in (b) above. (3marks)
-
-
-
-

12.(a) Name three characteristics of living organisms (3marks) 6mks

(b) Apart from Plantae and Animalia, name three other kingdoms. (3marks)

13. Give two characteristics that distinguish scientific names from common names. (2marks)

14. State two limitations of using a microscope to estimate the size of cells (2marks)

15.(a) What is cell specialization (2mark)

(b) Name three types of tissues found in animals (3marks)

16. Distinguish between osmosis and active transport. (2marks)

17. Describe what happens during the dark stage of photosynthesis (3marks)

SECTION B (50 MARKS)

Answer all the questions in spaces provided

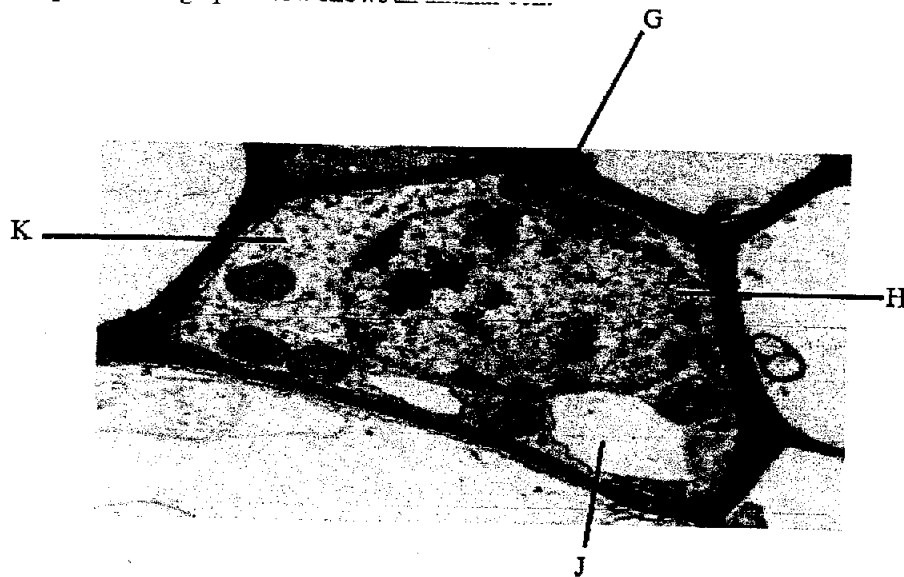
18a) State two advantages of using the electron microscope over the Light Microscope. (2 marks)

b) State the structural and functional differences between the rough endoplasmic reticulum and smooth endoplasmic reticulum. (1 mark)

i) Structural difference.

ii) Functional difference. (1 mark)

c) The photomicrograph below shows an animal cell.



i) Name the parts labelled G and H.

(2marks)

G:

H:

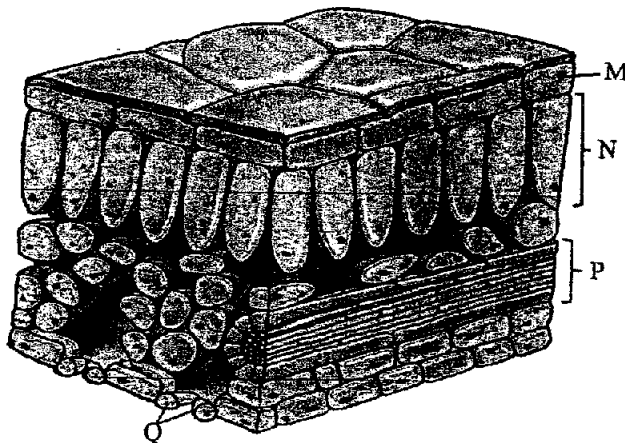
ii) If diffused into the cell, state the letter of the structure that is likely to be the destination, giving a reason to explain your answer.

(2marks)

iii) State two functions of the structure labeled H.

(2marks)

19. Study the diagram below showing the internal structure of a plant leaf.



For each the labelled parts M, N, P and Q, state the name and describe how it adapts the leaf to carry out photosynthesis.

a) Structure M. (2marks)

b) Structure N. (2marks)

c) Structure P. (3marks)

d) Structure Q. (2marks)

20. An experiment was carried out to investigate haemolysis in human red blood cells. The red blood cells were placed in different concentrations of sodium chloride solutions. The percentage of haemolysed cells was determined. The results were as shown in the table below.

Salt concentration g/100cm ³	0.75	0.78	0.80	0.82	0.84	0.86	0.9
Red blood cells haemolysed (%)	100	91	82	69	30	15	0

(a) Account for the results obtained at;

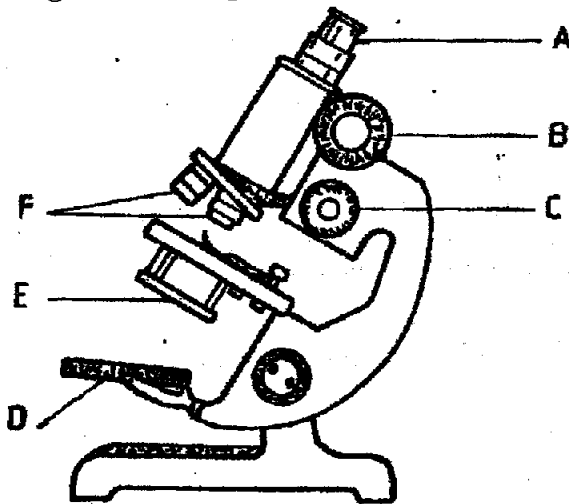
(i) 0.75% salt concentration (3marks)

(ii) 0.90% salt concentration (3marks)

(b) State what would happen to red blood cells if they were placed in 1.5% salt solution. (2 mark)

(c) Explain observation made when plant cells are placed in distilled water. (5marks)

21. The diagram below represents some components of a light microscope.



(a) Name the parts labelled A and B (2 marks)
i) A:

ii) B:

(b) State the functions of the parts labelled E and F (2 marks)
E:

F:

(c) Give the formula used to calculate magnification in a light microscope. **2 mark**

(d) Give a reason for each of the following procedures when preparing sections to be observed under a light microscope. **(1 mark)**

(i) Cutting thin sections

(ii) Staining the sections **(1 mark)**

(iii) Place the cut sections in water **(1 mark)**

e) Draw a labelled diagram of a typical animal cell as seen under the light microscope. **(4marks)**