NAME…….. INDEX NO…….....

231/3 **CANDIDATE'S SIGN……**
BIOLOGY
PAPER 3 **DATE…….……...**
(PRACTICAL)
JULY/AUGUST, 2016
TIME: 1¾ HOURS

KIRINYAGA CENTRAL SUB-COUNTY EFFECTIVE FORTY JOINT EXAMINATION – 2016

Kenya Certificate of Secondary Education
BIOLOGY
PAPER 3
(PRACTICAL)
TIME: 1¾ HOURS

INSTRUCTIONS TO CANDIDATES:

(a) Write your **name** and **index number** in the spaces provided above.
(b) **Sign** and write the **date** of examination in the spaces provided above.
(c) Answer all the questions in the spaces provided.
(d) Use the first 15 minutes to read through your paper and ensure you have all the chemicals and apparatus needed.
(e) Students should check the question paper to ascertain that all the papers are printed as indicated and that no questions are missing.

FOR EXAMINER'S USE ONLY:

Question	Maximum Score	Candidate's Score
1	13	
2	15	
3	12	
Total Score	40	

1. You are provided with iodine solution, visking tubing, a beaker and a solution labelled X. Tie one end of the tubing tightly using the thread provided. Measure 5ml of solution X and pour it into the visiking tubing. Tie the other end of the tubing tightly. Ensure there is no leakage. Rinse the outside of the tubing with distilled water and immerse it with its contents in a beaker containing iodine solution. Allow it to stand for 15 minutes.

(a) (i) Record your observation at the beginning and end of the experiment in the table below. (4 marks)

Experimental set up	Solution X inside the tubing	Iodine solution outside the tubing
Beginning of experiment		
End of experiment		

(ii) What was the identity of solution X? (1 mark)

……

(iii) Suggest the nature of visking tube. (1 mark)

……

(iv) Account for the results obtained in a (i) above. (4 marks)

……

……

……

……

……

(b) (i) Which physiological process was being investigated in this experiment? (1 mark)

……

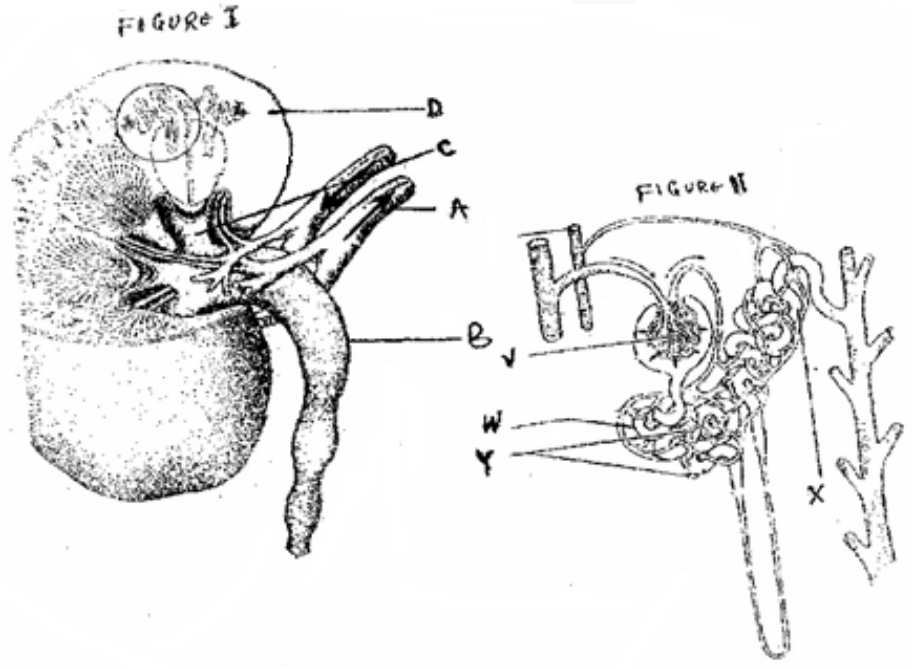
(ii) State **two** factors which affect the process being investigated. (2 marks)

……

……

……

2. Study the kidney diagrams below.



(a) (i) Name the parts labelled **A**, **B**, **C** and **D** in figure **1**. (4 marks)

A .....

B .....

C .....

D .....

(ii) Name the processes that take place in the parts labelled. (2 marks)

V .....

X .....

(b) State **two** adaptations of the part labelled **W**. (2 marks)

.....

.....

.....

.....

(c) On the diagram name the part where counter current flow occurs. (1 mark)

.....

(d) State **two** homeostatic functions of the diagram above. (2 marks)

……..

……..

(e) Explain what will happen to the process of urine formation in absence of vasopressin hormone. (4 marks)

……..

……

……

……

……

3. You are provided with the following plants: A twig of plant A and plant B.

(a) (i) Name the sub-division to which specimen A belong. (1 mark)

……

(ii) Using an observable characteristic only give a reason for your answer in (a)(i) above. (1 mark)

……

……

(b) Name the class to which the two specimens belong. (2 marks)

A ……

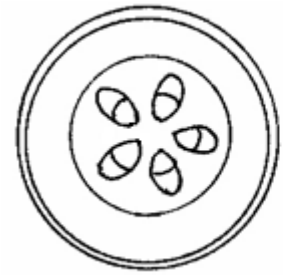
B ……

(c) State **two** observable differences between the leaves of specimen **A** and **B**. (2 marks)

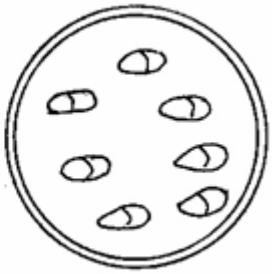
Leaves of A	Leaves of B

(d) The diagrams below shows the cross-section of stems obtained from specimens A and B.

P



Q



(i) Which diagram represents the stem of each of the specimen? (2 marks)

……

(ii) Outline two differences between the two transverse sections. (2 marks)

P	Q

(e) Suggest the agent of pollination of the flowers of specimen A. (1 mark)

……

Give a reason for your answer. (1 mark)

……

……

……