

Name: Index No:

School: Candidate's Signature:.....

Date:

231/3

BIOLOGY

Paper 3

(PRACTICAL)

July/August 2014

Time: Hours

TRANS-MARA WEST ASSESSMENT TEST (TWAT)

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

BIOLOGY

Paper 3

PRACTICAL

July/August 2014

Time: 2 Hours

INSTRUCTIONS TO THE CANDIDATES

- Answer **all** the questions in Section **A** in the spaces provided.
- You are required to spend the first **15** minutes of **1 ¾** hours allowed for this paper reading the whole paper carefully before commencing your work
- Candidate's may be penalized for recording irrelevant and incorrect spelling especially of technical terms.

For Examiner's Use Only:-

| QUESTIONS | MAXIMUM SCORE | CANDIDATE'S SCORE |
|------------------|----------------------|--------------------------|
| 1 | 14 | |
| 2 | 13 | |
| 3 | 13 | |
| TOTAL | 40 | |

This paper consists of 8 printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.

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1. You are provided with liquid **X** and substance **Q**

- (a) Place three drops of liquid **X** onto a white tile. Add four drops of iodine solution and record your observation. (1mk)

.....
.....
.....
.....

- (b) Pour 2ml of liquid **X** into a test-tube. Add equal amounts of Benedict's solution boil the mixture. Record your observation. (1mk)

.....
.....
.....

- (c) Label three boiling tubes as set-ups **A**, **B**, and **C**. Place 3ml of liquid **X** into each of the set-ups.

Divide substance **Q** into three equal portions.

- To set-up **A**, add one portion of substance **Q** and shake.
Place the second portion of substance **Q** into a test tube **B**. Add 1ml of water to it, shake the mixture and boil for four minutes..
- To set —up **C**, add the third portion of substance **Q**. Add 8 drops of 2M hydrochloric acid and shake.

Place the three set-ups in a warm water bath maintained at 37°C for 30minutes.

Cool the set-ups by dipping the boiling tubes in cold water

Place 2ml of the contents of each set-up into three separate test tubes. Add equal amount of Benedict's solution to each of the three test-tubes and boil.

Record your observations. (1mk)

Set-up **A**

.....
.....
.....
.....

Set-up **B**

(1mk)

Set-up C

(1mk).

(d) Account for your observations in each of the set-ups above.

Set-up A

(3mks)

Set-up B

(2mks)

Set-up C

(2mks).

(e) Give the most likely identity of substance **Q**.

(1mk)

(f) Why was the water bath maintained at **37°C**.

(1mk)

2. Below are diagrams of part of the urinary system. Examine them.

Figure I

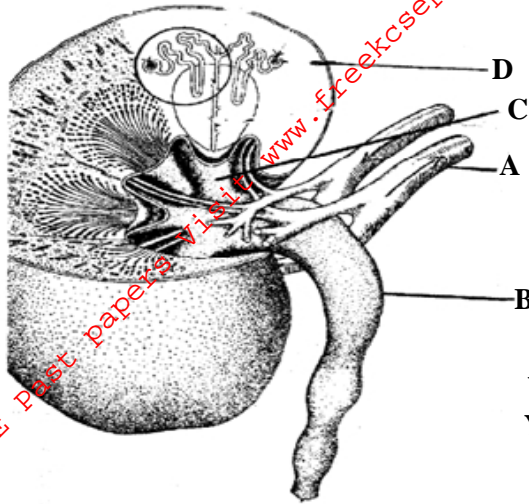
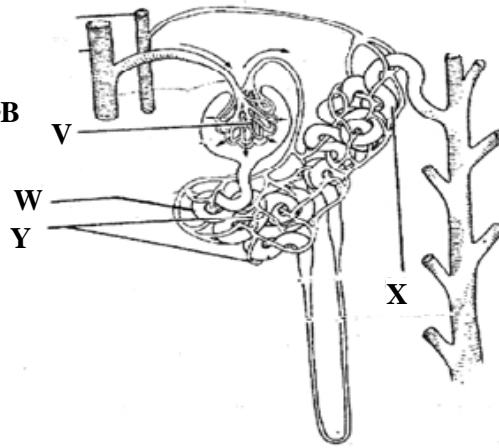


Figure II



(a) (i) Name the parts labeled **A**, **B**, **C** and **D** in figure **I**. (4mks)

- A**
- B**
- C**
- D**

(ii) Name the parts labeled **V**, **W**, **X** and **Y** in figure **II**. (2mks)

- V**.
- W**.
- X**.
- Y**.

(b) State **two** adaptations of part labeled **W** to its function . (2mks)

-
-

(c) In the diagram, name the part where;

(i) Counter current flow occurs . (1mk)

-
-

(ii) Reabsorption of water occurs. (1mk)

-
-

(d) Explain what would happen to the process of urine formation in absence of anti-diuretic hormone (**ADH**). (3mks)

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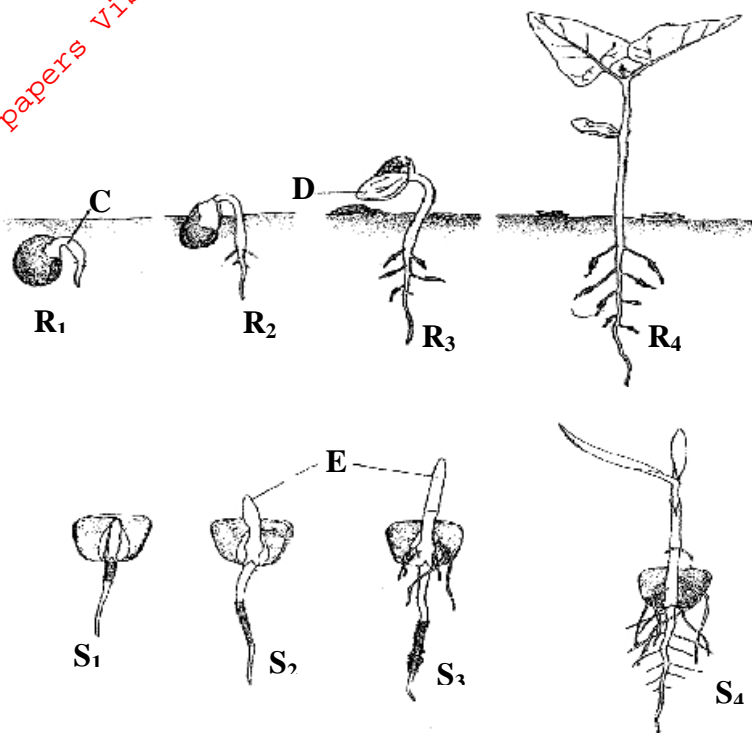
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3. Examine the seedlings below and use them to answer the questions that follow:



(a) Name the parts labeled **C**, **D**, **E** and state their importance for the seedling.

C:..... (1mk)

Importance..... (1mk)

.....

.....

D:..... (1mk)

Importance..... (2mks)

.....

.....

(ii) **E**:..... (1mk)

Importance..... (1mk)

.....

.....

(b) The **R** series of seedlings on the roots later swell in its life:

(i) What is the name of the swelling: (1mk)

.....

.....

(ii) Name the organisms that would be found in the swellings (1mk)

.....
.....

(iii) Explain the relationship that exists between the named organisms and the plant. (1mks)

.....
.....
.....

(c) (i) State the type of germination exhibited by **R** series of the seedlings. (1mk)

.....
.....

(ii) Give a reason for your answer in (c) (i) above. (1mk)

.....
.....

(d) State any **two** external factors necessary for germination. (1mk)

.....
.....
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