Name: …… **Index No: ……..…….**

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

Date:…….…….. ……

231/2
BIOLOGY
Paper 2
Theory
July/August 2014
Time: 2 Hour

TRANS-MARA WEST ASSESSMENT TEST (TWAT)

Kenya Certificate of Secondary Education

BIOLOGY
Paper 2
Theory.
July/August 2014
Time: 2 Hours

INSTRUCTIONS TO THE CANDIDATES

- *Write your **name** and **index number** in the spaces provided above.*
- ***Sign** and write the **date** of examination in the spaces provided above.*
- *This paper consists of **two** sections; **A** and **B**.*
- *Answer **all** the questions in Section **A** in the spaces provided.*
- *In section **B**, answer question **6(compulsory)** and either question **7** or **8** in the spaces provided after question 8.*

For Examiner's Use Only:-

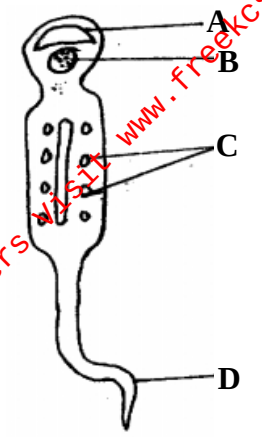
SECTION	QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7 or	20	
	8	20	
TOTAL SCORE		**80**	

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

SECTION A: (40 MARKS)

Answer all questions in this section.

1. The diagram below shows a specialized cell from a human being.



(a) Identify the cell. (1mk)

……....

(b) Name the parts labelled **A,B,** and **C.** (3mks)

A:…….

B: …….

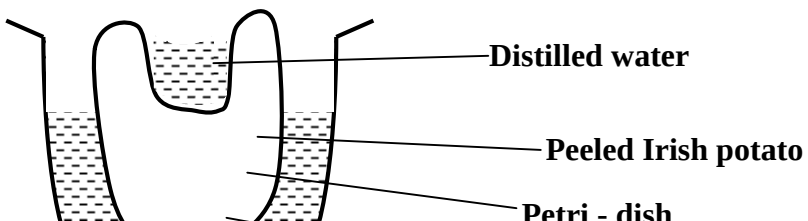
C: …….

(c) State the functions of the part labeled **D.** (1mk)

……..

(d) A student observed cells under a microscope and counted six **(6)** cells a cross the diameter of view . The diameter of field of view was found to be 1.25mm. Calculate the length of one of of the cells observed. (Answer in micrometer). (3mks)

2. A group of students set up an experiment to investigate a certain physiological process. The set up was as shown in the diagram below.



(a) What physiological process was being investigated? (1mk)

……

(b) (i) State **two** major observation that was made after some time. (2mks)

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(ii) Account for the above observation in b (i) above. (4mks)

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(c) State the significance of the biological process involved in the experiment. (1mk)

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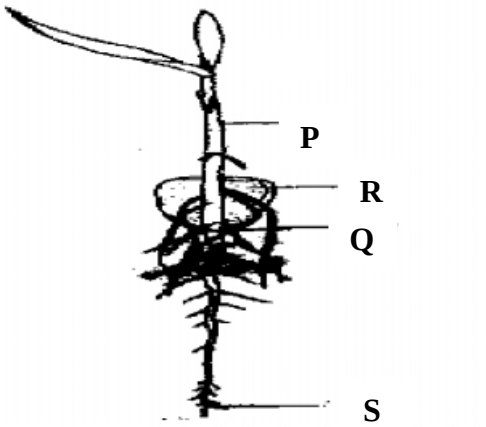
3. The diagram below represents a maize seedling.



(a) Name the parts labeled **P** and **Q**. (2mks)

P: ……

Q: ……

(b) State the function of the part labeled **R.** (1mk)

……

……

(c) Give **three** adaptations of the structure labeled **S** to its functions. (3mrks)

……..

……..

(d) What is the role of air in germination of the above seedlings? (2mks)

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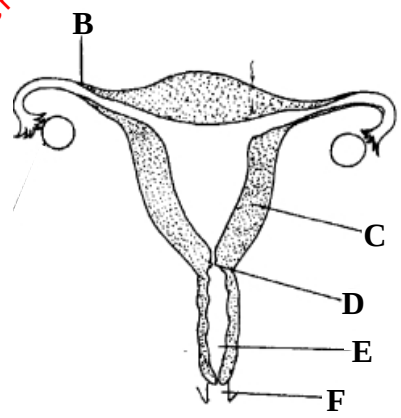
4. The diagram below represents female reproductive system;



(a) Name the part labelled ;**A ,B ,C** and **D.** (4mks)

A: .....

B: .....

C: .....

D: .....

(b) State **two** functions of structure **A.** (2mks)

.....

.....

(c) How is part **C** adapted to its functions? (1mk)

.....

.....

(d) Of what significance is part **E** to reproduction? (1mk)

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5. (a) What is mutation? (2mks)

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(b) Explain why certain bacteria and other pathogens become resistance to drugs after some time. (2mks)

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(c) Work out a cross between a Haemophiliac man married to a carrier woman for Haemophilia. Use letter **h** to represent genes. (3mks)

(d) State the phenotypic ratio of the children. (1mk)

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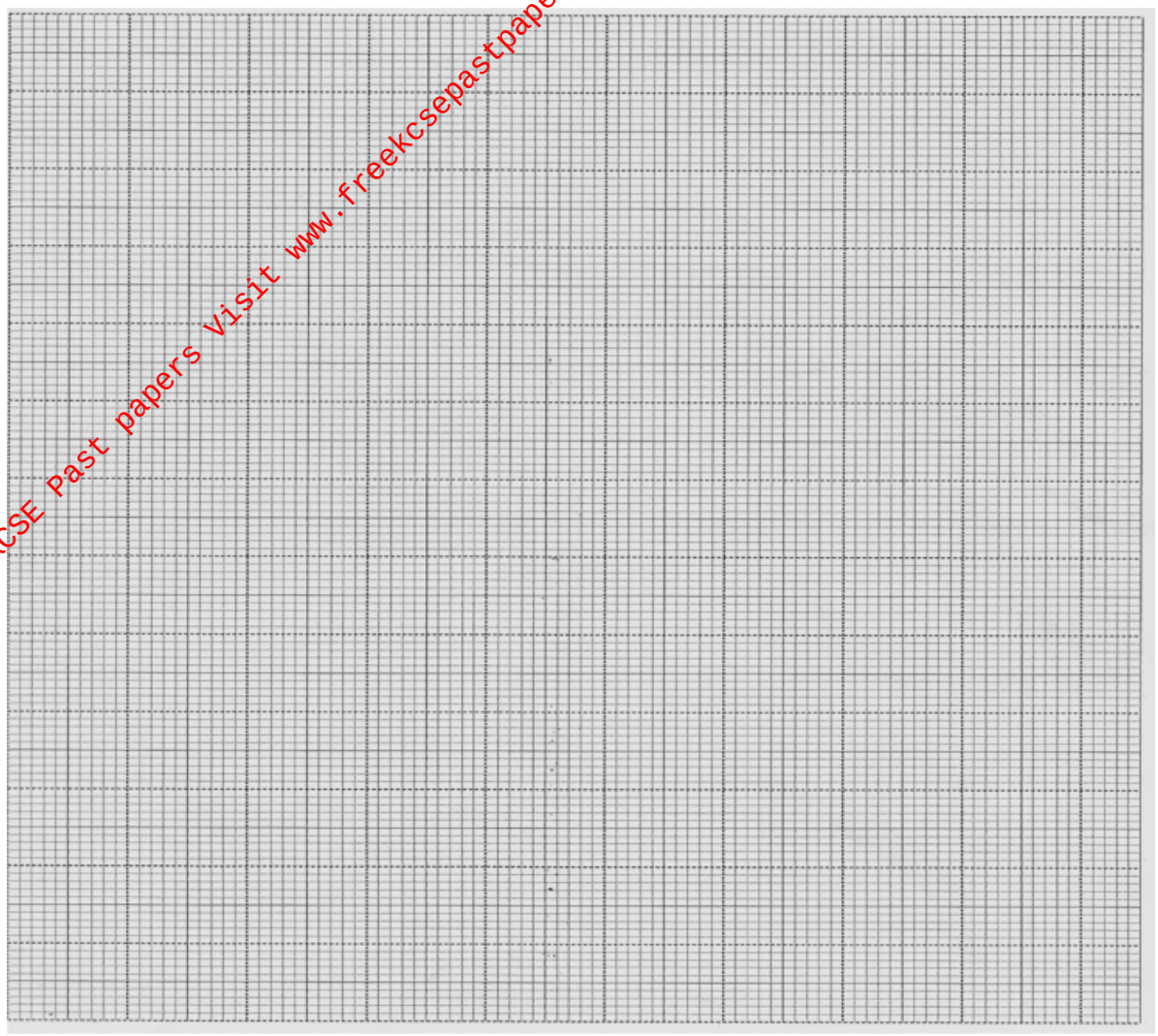
SECTION B(40 MARKS)

Answer 6 Compulsory and Either Questions 7 and 8

6. A group of students carried out a study of the population growth of flour weevils. They put 16 grams of maize flour into two equal boxes **K** and **L** respective . They then introduced equal numbers of weevils into the boxes. The boxes were kept under similar environmental conditions. The weevils were counted at intervals and the results recorded in the table below.

No. of days after introduction of weevils	Approximate No. of weevils present.	
	K	**L**
0	20	20
5	20	20
40	200	300
60	550	800
80	560	1300
100	650	1750
120	640	1750
135	650	1740
150	645	1748

(a) Using a suitable scale ,draw two graphs on the same axes from the results in the table. Plot approximate number of weevils present on the Y – axis(Use graph paper provided) (8mks)



(b) What were the approximate number of weevils present in the two boxes on the 70th day. (2mks)

Number in **K:** .....

Number in **L:**.....

(c) (i) On what day was the population of weevils in **K** 580. (1mk)

.....

(ii) Between which days was the population difference greatest . (1mk)

.....

(d) Account for the shape of graph **L** between day 5 and day 100. (4 mks)

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(e) State factors that would make the human species assume the graph curve above in **K.** (4mks)

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7. (a) Describe the mechanism of inhalation in man. (10mks)

(b) Using photosynthesis theory explain the mechanics of opening of stomata. (10mks)

8. Explain structure and functions of the human eye. (20mks)

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