NAME……INDEX NO……

CANDIDATE'S SIGN……DATE……

SCHOOL……

231/2
BIOLOGY
PAPER 2
THEORY
MAY/JUNE 2014
TIME: 2 HOURS

EKSIKA JOINT EVALUATION TEST.

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

231/2
BIOLOGY
PAPER 2
THEORY
MAY/JUNE 2014
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES.

1) Write **your name** and **index number** in the spaces provided above.
2) Sign and write the date of examination in the spaces provided above.
3) This paper consisits of section **A** and **B**.
4) Answer **ALL** questions in section A in the spaces provided above.
5) In section **B** answer questions 6 (compulsory) and either question **7** or **8** in the spaces provided after question **8.**

FOR EXAMINERS' USE ONLY.

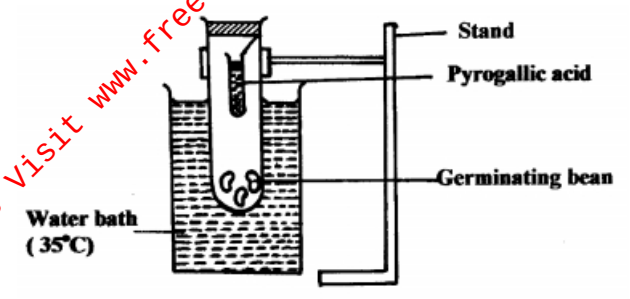
SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
	TOTAL	80	

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

SECTION A (40MARKS)

Answer all questions in this section in the spaces provided.

1 The diagram below shows a set up to investigate a factor necessary for germination.



a) Name the factor under investigation. (1mk)

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b) State the role of pyrogallic acid in the set up. (1mk)

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c) Which type of respiration is taking place in the beans? (1mk)

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d) Write a word equation for the process named in (c) above. (1mk)

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e) Explain why plants can only carry out the above respiration process for a short while. (1mk)

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f) State other **three** factors necessary for germination. (3mks)

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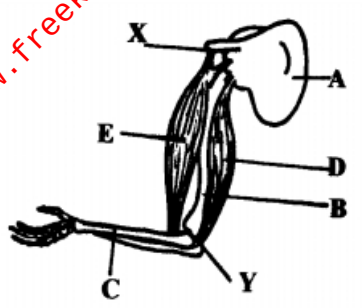
2 The diagram below shows the arrangement of bones and muscles in a human arm.



a) Name the parts labeled **A , B** and **C.** (3mks)

A……

B……

C……

b) Explain how parts **D** and **E** bring about flexing and extending of the arm. (2mks)

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c) Name the types of joints found at points X and **Y.** (2mks)

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d) Name a fluid found in all the movable joints. (1mk)

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3 a) i) Name the blood vessel that connects arteries to veins. (1mk)

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ii) Explain **three** ways in which the vessels named in (a) (i) above are adapted to carry their functions. (3mks)

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b) Name the blood vessel with the highest concentration of:

i) Glucose (1mk)

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ii) Carbon (IV) Oxide. (1mk)

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c) i) Sate the function of cardiac muscles. (1mk)

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ii) What is a single circulation? (1mk)

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4 In a family of four children, the father had blood group A while the mother had blood group B.One of the children had blood group O.The father wanted to commit suicide accusing his wife of infidelity?

a) Was this accusation justified? (1mk)

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b) With the use of a punnet square work out the genotype of other children. (4mks)

c) The child of blood group O can donate blood , to all other children but can receive blood from none. Explain. (2mks)

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d) One of the other children was able to receive blood from all the other children but donate to none. What was the blood group of such a child? (1mk)

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5 a) Distinguish between Osmosis and Active transport. (2mks)

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b) Study the figure below and answer the questions that follow.

i) Which solution has higher concentration of free water molecules. (1mk)

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ii) Which solution is more concentrated? (1mk)

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iii) In which direction will Osmosis take place? (1mk)

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iv) What does semi-permeable membrane represents in an animal cell. (1mk)

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c) Name **two** processes in living organisms that depend on Osmosis. (1mk)

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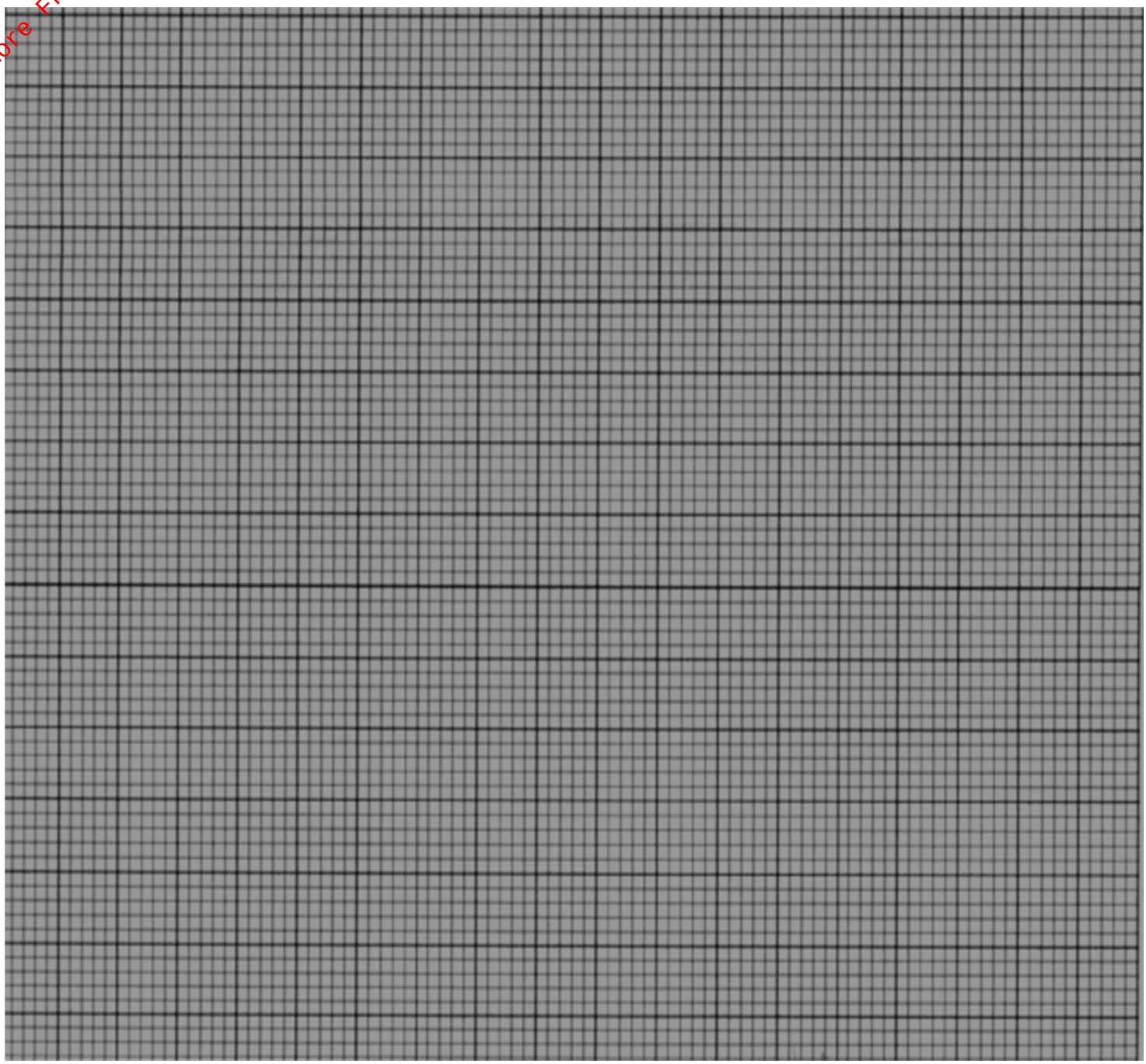
SECTION B (40MARKS)

6 A group of students estimated the population of the grasshoppers in the school compound. The table below shows the number of grasshoppers collected from the eight sites within the compound.

Site	1	2	3	4	5	6	7	8
No. of grasshoppers	250	50	190	220	85	300	175	30

a) Draw histograms to represent the number of grasshoppers collected from each site. (6mks)



b) The students caught 240 grasshoppers marked them and then released them. After five days they caught 160 grasshoppers and found that 40 were marked. Work out the grasshoppers population. (3mks)

c) Identify the method used in (b) above. (1mk)

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d) Name the instrument the students used to collect and mark the grasshoppers. (2mks)

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e) The students encountered a number of limitations. State any three of the limitations. (3mks)

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f) The students observed the organisms and placed them into their correct phylum and class. (2mks)

i) Name; Phylum……..

Class…….

ii) What features were observed for the grasshoppers to be placed in their correct; (3mks)

Phylum…….

Class…….

7 Describe how the human skin is adapted to its function. (20mks)

8 a) State **three** aspects of light that are important in photosynthesis. (3mks)

b) Describe how the leaves of plants are adapted to carry out photosynthesis. (17mks)