

Name.....Index No.....  
Candidate's Signature.....  
Date.....

231/2  
**BIOLOGY**  
**PAPER 2**  
**(THEORY)**  
**JULY/AUGUST 2014**  
**TIME: 2 HOURS**

**NYATIKE SUB - COUNTY JOINT EVALUATION EXAM**  
*Kenya Certificate of Secondary Education (K.C.S.E.)*

**231/2**  
**Biology**  
**Paper 2**  
**2 hours**

**INSTRUCTIONS TO CANDIDATES**

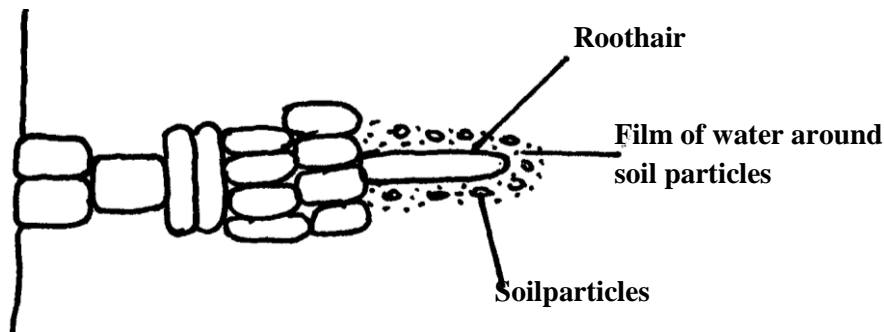
- Write your **name, index number** and **school** in the spaces provided
- Sign and write the date the examination was done in the spaces provided
- This paper consists of two sections, section A and section B. Answer **ALL** the questions in section A in the spaces provided on the question paper. In section B, answer question 6 (**compulsory**) and **either** question 7 **or** 8 in the spaces provided after question 8
- Be brief and precise. Unnecessary information and wrong spellings especially of technical terms shall be penalized
- All answers **must** be written in the **English** language

**FOR EXAMINER'S USE ONLY**

QUESTION NUMBER	QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
SECTION A	1	08	
	2	08	
	3	08	
	4	08	
	5	08	
SECTION B	6	20	
	7	20	
	8	20	
TOTALSCORE		<b>80</b>	



2. The diagram below shows the movement of water, from the soil up the plant. Study it and answer the questions that follow.



(a) (i) Name the structure labeled **L** (1mk)

**L** .....

(ii) State the adaptations of structure L to its functions. (2mks)

.....  
 .....

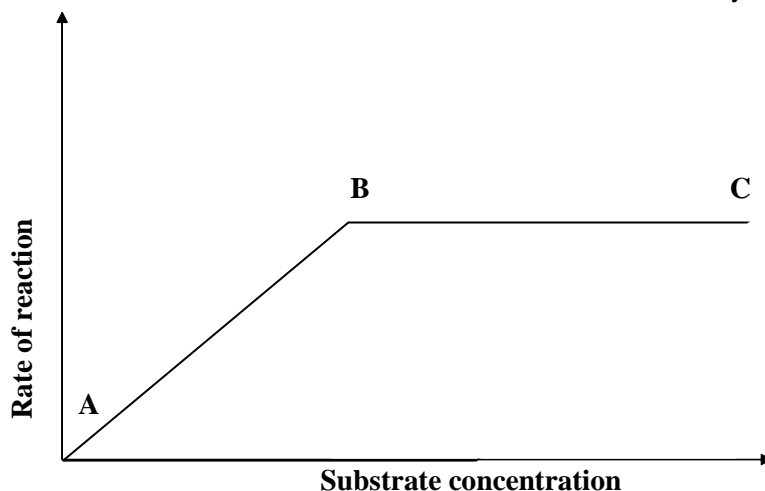
(b) Describe the movement of water from the soil to the structure labeled **L** (3mks)

.....  
 .....

(c) Apart from capillarity, name **one** other force that ensures upward movement of water in the plant through structure **L**. (1mk)

.....  
 .....

3. The graph below shows the effect of substrate concentration on the rate of enzyme reaction.



(a) Account for the shape of the graph between

(i) **A** and **B**

(3mks)

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

(ii) **B** and **C** (2mks)

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

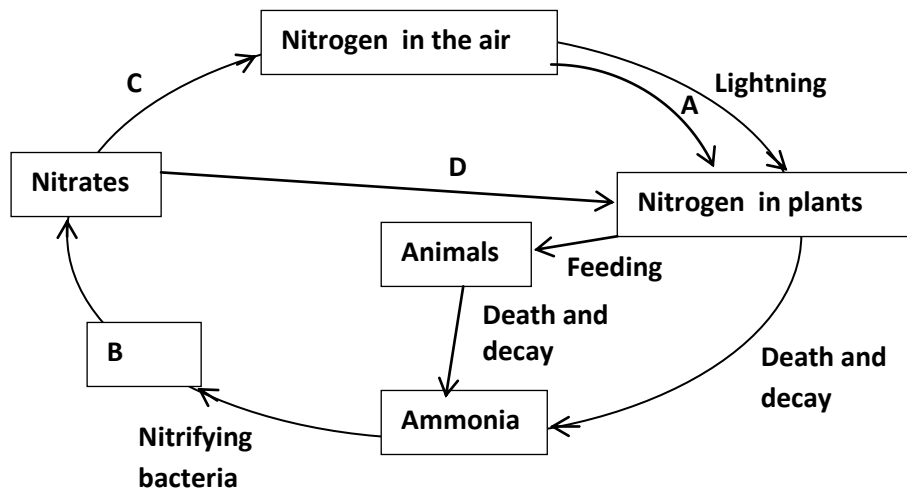
(b) How can the rate of reaction be increased after point **B**? (1mk)

.....  
 .....

(c) State **two** other factors that affect the rate of enzyme reaction. (2mks)

.....  
 .....

4. The diagram below represents the nitrogen cycle



(a) State the process labeled

**A**..... (1mk)

**D**..... (1mk)

(b) Name the compound represented by **B** (1mk)

.....  
 .....

(c) Name the group of organismslabelled **C** (1mk)

.....  
 .....

(d) (i) Name the group of plants which promote process A (1mk)

.....  
.....

(ii) State the part of the plant where process A takes place. (1mk)

.....  
.....

(e) How would excess pesticides in the soil interfere with process A (2mks)

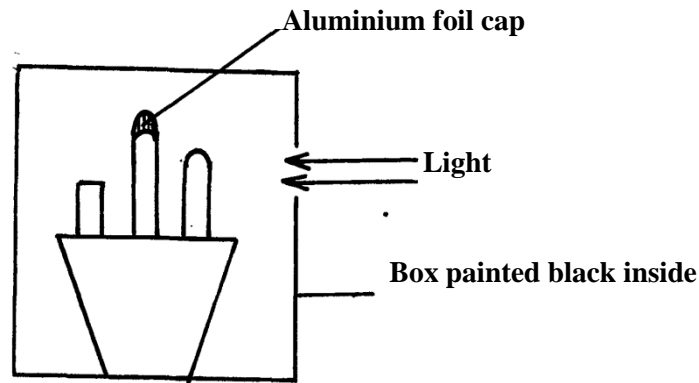
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5. The diagram below represents growing seedlings which were subjected to unilateral direction of light at the beginning of the experiment. They were treated as follows.

A – tip of seedling was cut off

B- tip was covered with aluminium foil cap

C- tip was left intact.



(a) (i) state the observations that would be made in the seedlings A, B, and C after five days. (3mks)

A.....

B.....

C.....

(ii) Account for the observation made in seedling C in a(i) above. (3mks)

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

(b) If the tin foil were removed from the seedling B, What results would be observed after 3 days? (1mk)

.....  
.....

(c) State the expected results after 3 days if the box was removed. (1mk)

.....  
.....

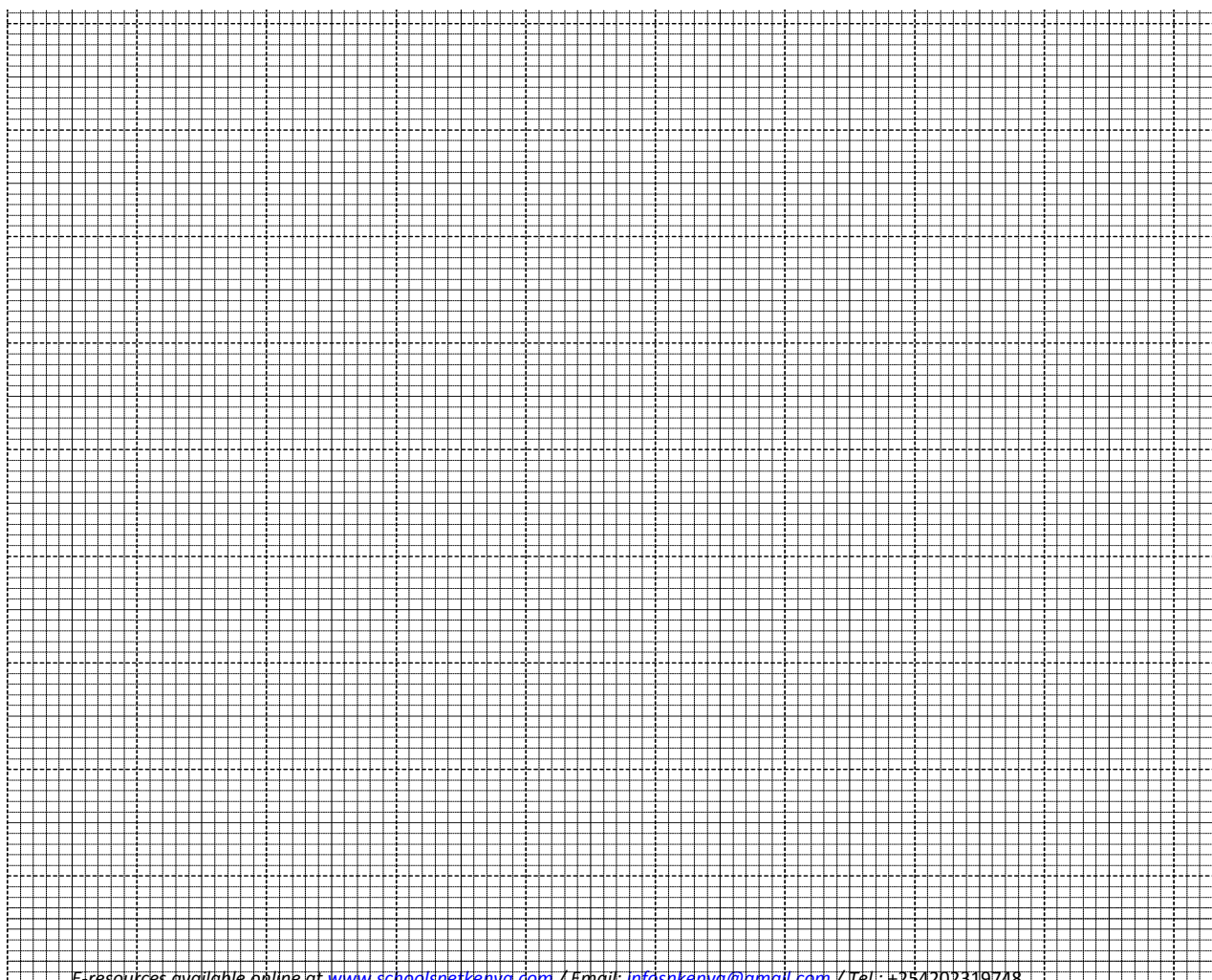
**SECTION B**

**Answer question 6 compulsory in the spaces provided. Answer either question 7 or 8 in the spaces provided after question 8.**

6. In an experiment to investigate certain processes in a given species, the rates of carbon (iv) Oxide released and intake were measured over a long period of time. The results of the investigation were shown below.

<b>Time of day(hours)</b>	<b>6</b>	<b>8</b>	<b>10</b>	<b>1</b>	<b>14</b>	<b>16</b>	<b>18</b>	<b>20</b>	<b>22</b>	<b>24</b>
<b>Carbon (iv) consumed (mm<sup>3</sup>/min)</b>	<b>10</b>	<b>43</b>	<b>69</b>	<b>91</b>	<b>91</b>	<b>50</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Carbon (iv) released ( mm<sup>3</sup>/min)</b>	<b>38</b>	<b>22</b>	<b>10</b>	<b>3</b>	<b>3</b>	<b>16</b>	<b>31</b>	<b>48</b>	<b>48</b>	<b>48</b>

On the graph provided, draw graphs of volume of carbon(iv) oxide consumed and released against time on the same axes. (7mks)









**ANSWERS:**

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