

Name.....

Index No...../.....

School.....

Candidates Signature.....

Date .....

**231/3**  
**BIOLOGY**  
**(PRACTICALS)**  
Paper 3  
July/August 2009  
**1<sup>3</sup>/<sub>4</sub> Hours**

**KIRIMA JOINT EVALUATION TEST - 2009**  
*Kenya Certificate of Secondary Education (K.C.S.E)*

**231/3**  
**BIOLOGY**  
**(PRACTICALS)**  
Paper 3  
July/August 2009  
**1<sup>3</sup>/<sub>4</sub> Hours**

**INSTRUCTIONS TO CANDIDATES**

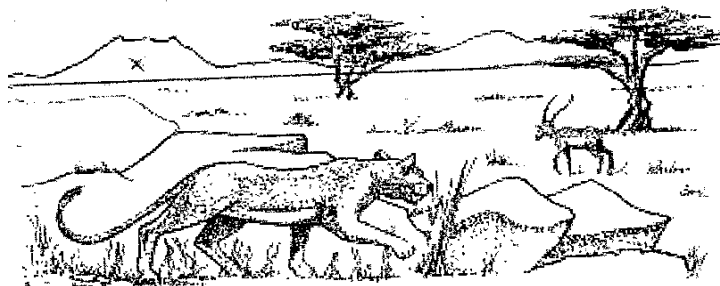
- Write your name and Index Number in the spaces provided above.
- Sign and write date of examination in the spaces provided above.
- Answer **ALL** questions in the spaces provided in the question paper.
- You are **NOT** allowed to start working with the apparatus for the first 15 minutes of the 1<sup>3</sup>/<sub>4</sub> hours allowed for this paper. This time is to enable you to read the question paper and make sure you have all the chemicals and apparatus that you may need.
- All workings **MUST** be clearly shown where necessary.
- Mathematical tables and silent electronic calculators may be used.

**For Examiners use only.**

<b>Question</b>	<b>Maximum Score</b>	<b>Candidates Score</b>
<b>1</b>	<b>13</b>	
<b>2</b>	<b>12</b>	
<b>3</b>	<b>15</b>	
<b>TOTAL SCORE</b>	<b>40</b>	

*This paper consists of 4 Printed pages.  
Candidates should check the question paper to ensure that all the  
Papers are printed as indicated and no questions are missing*

1. Below is a photograph depicting interaction of organisms in a certain ecosystem.



a) Name the type of ecosystem shown. (1mk)

.....

b) i) Name any three living organisms you can observe in the photograph in order of their trophic levels. (3mks)

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.....

ii) What feeding relationships is exhibited by the animals shown in the photograph? (2mks)

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c) i) Give the adaptations of the animals regarding the feeding relationship mentioned in b) (ii) above. (6mks)

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ii) Draw a simple food chain to represent the food relationship in the ecosystem shown in the photograph. (1mk)

2. You are provided with food substance labeled X.

a) Using the reagents and materials provided, carry out the appropriate food tests on food substance

X. Record in the table below.

(8mks)

Food substance	Procedure	Observation	Conclusion

b) Give **one** end products of digestion of food substance X.

(1mk)

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c) Name the regions in the alimentary canal where substance X is enzymatically digested. (3mks)

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3. The diagram below shows bones obtained from the same mammal.



a) Give the identity of each of the above bones. (4mks)

- 1 .....
- 2 .....
- 3 .....
- 4 .....

b) Draw a diagram of the bones, arranged as they appear in the mammal from which they were obtained from. (3mks)

c) On your diagram indicate by naming the types of joints between the bones. (2mks)

d) i) Give **three** adaptations of bone labeled 3 to its functions. (3mks)

- .....
- .....
- .....

ii) Give three adaptations of bone labeled 4 to its functions (4mks)

- .....
- .....
- .....