

NAME..... STRM.....ADM.....

DATE..... SIGN.....

231/3  
**BIOLOGY PRACTICAL**  
**PAPER 3**  
**June 2022**  
**Time: 1 ¾ Hours**

**KASSU JET EXAMINATION 2022**  
*(Kenya Certificate of Secondary Education)*

**INSTRUCTIONS TO CANDIDATES**

- Answer all the questions 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.
- Candidates may be penalized for recording irrelevant information and for incorrect spelling especially of technical terms.

**FOR EXAMINER'S USE ONLY**

Question	Max Score	Candidate's Score
<b>1</b>		
<b>2</b>		
<b>3</b>		
<b>TOTAL</b>		

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

1. a) (i) You are provided with a pestle, mortar, scapel **specimen Q** and **R**, Cut from each a cube, each measuring 1cm by 1cm. put them each in a different test tube having 10mls of solution **X**. Record the observations in the table below? **(2 marks)**

Specimen	Observation
Specimen <b>Q</b>	
Specimen <b>R</b>	

- (ii) Account for the observations in the experiment involving specimen **Q** and **R**? **(3 marks)**

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- b) i) Using the remaining portion of **specimen Q**. Cut 2 other pieces measuring 1cm by 1cm ,Crush them separately to form a paste and put them in boiling tubes labeled **A** and **B**.

To the paste in boiling tube labeled **A**, add 5mls of solution **X** .Record the observation in the table below.

To the paste in boiling tube labeled **B** add 10mls of distilled water and boil for 5 minutes then allow it cool then add 5mls of solution **X**. Record the observation in the table below? **(2 marks)**

BOILING TUBE	OBSERVATION
A	
B	

ii) Account for the observations in the experiment involving boiling tube **A** and **B**?  
**(4 marks)**

Boiling tube **A**

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.....  
.....

Boiling tube **B**

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.....  
.....

iii) Name the biological substance being investigated and its significance to the living tissue?  
**(2 marks)**

Biological substance

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Significance

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.....  
.....

iv) Name the factor being investigated in question 2(b) above  
**(1mark)**

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## KASSU JET EXAMINATION 2022 MARKING SCHEME

1. a. (i) You are provided with a pestle, mortar, scapel **specimen Q** and **R**. Cut from each a cube, each measuring 1cm by 1cm. put them each in a different test tube having 10mls of solution **X**. Record the observations in the table below? **(2marks)**

Specimen	Observation
Specimen <b>Q</b>	<i>A lot of bubbling / Effervescence / Fizzling</i>
Specimen <b>R</b>	<i>Little bubbling / less effervescence / little fizzling</i>

- (ii) Account for the observations in the experiment involving specimen **Q** and **R**?  
**(3marks)**

*There is more bubbling / more gas produced in Q (liver) than in R banana; since there is more metabolic activities in Q than in R; Animals are more active than plants;*

- b) i) Using the remaining portion of **specimen Q**. Cut 2 other pieces measuring 1cm by 1cm ,Crush them separately to form a paste and put them in boiling tubes labeled **A** and **B**.

To the paste in boiling tube labeled **A**, add 5mls of solution **X** .Record the observation in the table below. .

To the paste in boiling tube labeled **B** add 10mls of distilled water and boil for 5minutes then allow it cool then add 5mls of solution **X**. Record the observation in the table below? **(2marks)**

BOILING TUBE	Observation
A	<i>fast/rapid/More effervescence/fizzing /bubbling</i>
B	<i>Fewer/no/very little effervescence/fizzing /bubbling</i>

- (ii) Account for the observations in the experiment involving boiling tube **A** and **B**?  
**(4marks)**

Boiling tube **A**

*Crushing increases surface area for enzyme catalase; rapid / faster metabolism /breakdown of hydrogen peroxide occurs*

Boiling tube **B**

**Boiling denatures the cells / enzyme catalase; reduces enzyme activity / metabolism / substrate breakdown.**

- (iii) Name the biological substance being investigated and its significance to the living tissue? **(2marks)**

Biological substance

*Catalase/enzyme*

Significance

*Detoxification/breakdown harmful substance/hydrogen peroxide*

- iv) Name the factor being investigated in question 2(b) above **(1mark)**

*Effect of temperature on enzyme action*