

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

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

231/3
BIOLOGY PRACTICAL
PAPER 3
June 2022
Time: 1 ³/₄ 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 ³/₄** 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
1		
2		
3		
TOTAL		

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 Q	
Specimen R	

- (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

.....

Significance

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

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 Q	<i>A lot of bubbling / Effervescence / Fizzling</i>
Specimen R	<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

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