**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** |
| **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)**

……………………………………………………………………………………………………………………………………………………………………………………...............

……………………………………………………………………………………………………………………………………………………………………………………..........

1. 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** ……………………………………………………………………………………………………………………………………………………………………………………............................................................................................................................

 Boiling tube **B** ……………………………………………………………………………………………………………………………………………………………………………………...........................................................................................................................

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)**

………………………………………………………………………………………

**231/3**

**BIOLOGY PRACTICAL**

**PAPER 3**

**June 2022**

**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** | ***A lot of bubbling / Effervescence / Fizzling*** |
| Specimen **R** | ***Little bubbling / less effervescence / little fizzling*** |

 (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;***

1. 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 | ***fast/rapid/More effervescence/fizzing /bubbling*** |
| B | ***Fewer/no/very little effervescence/fizzing /bubbling*** |

(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***