**CHOGORIA-MURUGI PRE-MOCK EXAM- 2023**

**Name**…………………………………….………………..……**Adm No**……...................

**Index Number.......**…………………………….......... **Date**………………........

**231/3**

**BIOLOGY**

**(Practical)**

**Paper 3**

**Time: 1 ¾ hours**

**Instructions to Candidates**

* Write your name, Admission number and your other details in the spaces provided above.
* Spend the first 15 minutes of the time allocated to read through the question paper before commencing your work
* Answer **ALL** the questions in the spaces provided.
* **For Examiner's Use Only**

|  |  |  |
| --- | --- | --- |
| **Question** | **Maximum Score** | **Candidate’s Score** |
| **1** | **14** |  |
| **2** | **13** |  |
| **3** | **13** |  |
| **Total Score** | **40** |  |

**1.** You are provided with Irish potato tuber labeled specimen **K, use** it to answer questions that follow.

Cut out two cubes whose sides measure 1cm from the Irish potato provided

Label three test-tubes as, **A**, **B** and **C** and put them into the test-tube rack.

**A )** Crush one cube to obtain a paste and add about 15 cm3 of distilled water to the paste to form a solution and then carry out the following procedure;

**i)** Use a measuring cylinder to pour 10 cm3 of potato extract solution **into** test-tube **A**.

**ii)** Use the measuring cylinder to transfer 5 cm3 of potato solution extract from test-tube **A** to test- tube **B**.

**iii)** Use the measuring cylinder to add 5 cm3 of distilled water to test-tube **B**. Place a stopper in test-tube **B** and shake it.

**iv)** Remove the stopper. Use the measuring cylinder to transfer 5 cm3 of the liquid in test- tube **B** to test-tube **C**.

**v)** Use the measuring cylinder to add 5 cm3 of distilled water to test-tube **C**. Place a stopper in test-tube **C** and shake it. Using a measuring cylinder reduce the volume of solution **C** to 5 cm3.

**a)** Table below shows the percentage concentration of the potato extract solution.

|  |  |
| --- | --- |
| test-tube | percentage concentration of potato extract solution |
| **A** | 100.00 |
| **B** |  |
| **C** |  |

Complete the table above by calculating and writing in the percentage concentration of potato extract solutions in test-tube **B** and **C**. (**2mks)**

**b )** Using a measuring cylinder pour 1 cm3 to each of hydrogen peroxide to the contents in test tube **A** to **C** and make the observations (**3mks)**

|  |  |
| --- | --- |
| **Test tube** | **Observations** |
| **A** |  |
| **B** |  |
| **C** |  |

**( i)** What was the aim of the investigation above (**1mk)**

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(ii) Write the word equation for the reactions taking place in the test tubes (**1mk)**

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**(iii)** What will be the expected observation if the irish potato was replaced with a piece of mammalian liver (**1mk)**

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**(iv)** Explain your answer in c (iii) above (**2mk**)

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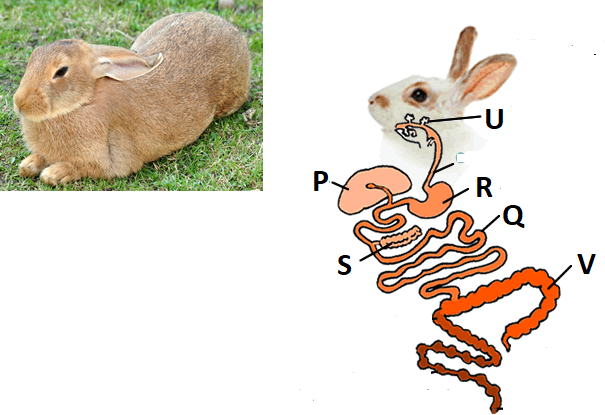
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**(B)**  Crush the remaining cube to obtain the paste. Use the reagents provided to and carry out food test on the extract. **(4mks**)

|  |  |  |  |
| --- | --- | --- | --- |
| TEST | PROCEDURE | OBSERVATIONS | CONCLUSION |
|  |  |  |  |
|  |  |  |  |

2. Study the photographs below and answer the questions that follow.



1. With **observable** reasons identify the class of the specimen in the photograph.
2. Class…………………………………………………………………………..(1mk)
3. Reasons (2mks)

…………………………………………………………………………...……….

……………………………………………………………………………………

1. (i) Name the structures labeled (4mks)

**P** …………………………………………………………………………………………...

**Q** …………………………………………………………………………………………...

**R** …………………………………………………………………………………………...

**S** …………………………………………………………………………………………..

1. State the function of the parts labeled (2mks)

**U** …………………………………………………………………………………………...

**V** …………………………………………………………………………………………...

1. Study the photographs below depicting plants growing in different habitats.



1. Identify the habitats in which they are found (2mks)

**Y** …………………………………………………………………………………………...

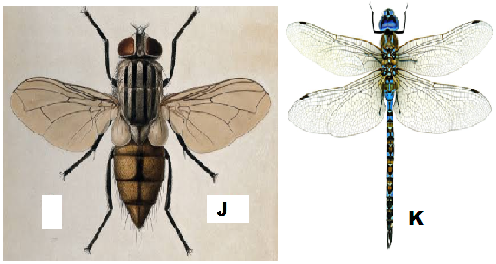
**Z** …………………………………………………………………………………………...

1. State the significance of the following structures found in the specimens shown above (2mks)

**R** …………………………………………………………………………………………...

**S** …………………………………………………………………………………………...

3. Below are photographs of two specimens, J and K. Both of them belong to the same phylum and class. Observe them carefully before you answer the questions that follow.



1. Name the class to which **J** and **K** belong and support your answer with two reasons.

Class 1mk

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

Reasons 2mks

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1. Suggest why the transport fluid in **J** and **K** has no haemoglobin. 2mks

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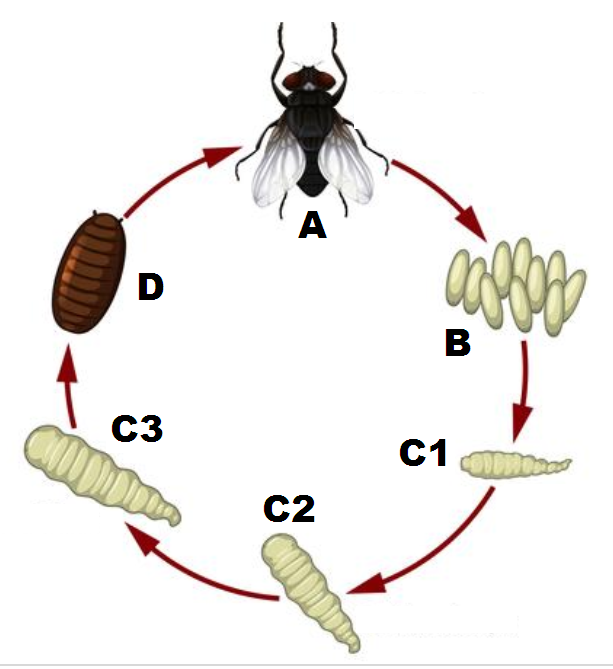
1. The actual length of specimen K is 8cm, given that both J and K are under the same magnification, determine the actual length of J 3mks

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1. Below is a diagram showing the life cycle of specimen J
2. Identify the stage labeled **D**. 1mk

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

1. Name the hormone responsible for the change from **D** to **A**. 1mk

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

1. Explain the differences in the change from **C2** to **C3** and from **C3** to **D**.      2mks

C2 to C3

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

C3 to D

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

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1. State the importance of the process illustrated above in the life cycle of the organism (1mk)

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***THE END***