

NAME.....INDEX. NO. ....

CLASS: .....DATE.....CANDIDATE'S SIGN.....

# BUTULA SUB-COUNTY JOINT EXAM

*Kenya Certificate of Secondary Education (K.C.S.E)*

231/3

**BIOLOGY PRACTICAL**

**PAPER 3**

**DECEMBER 2021**

**TIME: 1 hour 45 Minutes**

## **INSTRUCTIONS TO CANDIDATES**

1. Answer all the questions.
2. Spend the first 15 minutes of the 1  $\frac{3}{4}$  hours allowed for this paper reading the whole paper carefully before commencing your work.
3. Answers **MUST** be written in the spaces provided in the **QUESTION PAPER ONLY**.
4. This paper consists of 12 printed pages. Candidates should check the question paper to ensure that all pages are printed as indicated and no questions are missing

### **FOR EXAMINERS USE ONLY**

<b>QUESTION</b>	<b>Max Score</b>	<b>Candidate Score</b>
<b>1</b>	<b>12</b>	
<b>2</b>	<b>14</b>	
<b>3</b>	<b>14</b>	
<b>TOTAL SCORE</b>	<b>40</b>	

*This paper consists of 7 printed pages. Candidates should check the question paper to ascertain that all pages are printed as indicated and that no pages are missing.*

1. You are provided with the following materials and reagents.

A straight portion of raw banana, labelled **D**

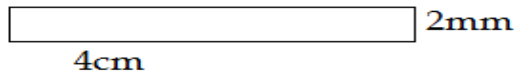
Two petri dishes, a scalpel/sharp razor blade, two beakers containing solution **A** and **B**, A stop watch/access to a wall clock, Means of labeling

(i) Label the two petri dishes, **A** and **B**

(ii) Fill petri dish **A** with solution **A** and petri dish **B** with solution **B**

(iii) Using the scalpel, prepare four thin, straight flat strips from the raw banana peel

(iv) Each strip should measure about 4cm by 2mm as illustrated below



(v) Immerse two strips in petri dish **A** and the other two in petri dish **B** and leave the set ups undisturbed for 10 minutes.

(a) State your observations in petri dish **A** and **B** after 10 minutes

Petri dish **A**

(1mk)

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.....  
.....

Petri dish **B**

(1mk)

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.....  
.....

(b) Account for the observations made in (a) (i) above

Petri dish **A**

(3mks)

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Petri dish **B**

(3mks)

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(c) With reference to the observations made, compare the nature of the outer and inner surfaces of the pawpaw peel (2mks)

<b>OUTER SURFACE</b>	<b>INNER SURFACE</b>

(d) (i) Name the cell structure responsible for the observations made in this experiment (1mk)

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(ii) Explain how the cell structure named in (d) (i) above works to bring about the observations made (1mk)

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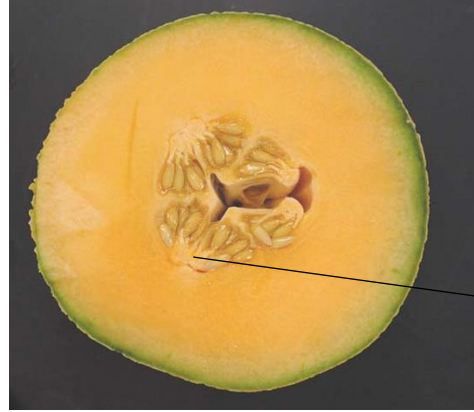
2. Study the specimens provided then answer the questions below.

**U**



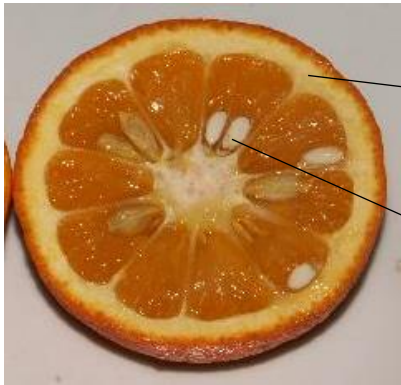
**U1**

**V**



**V3**

**W**



**W1**

**W2**

**X**



(a) Name the parts labeled **U1**, **W1**, **W2** and **V3** (4mks)

- U1**.....
- W1**.....
- W2**.....
- V3**.....

(b)(i) Suggest the mode of dispersal of the specimen labeled **U** (1mk)

.....

(ii) Give a reason for your answer in b (i) above. (1mk)

.....

(c) (i) suggest the mode of dispersal of the specimen labeled **X**. (1mk)

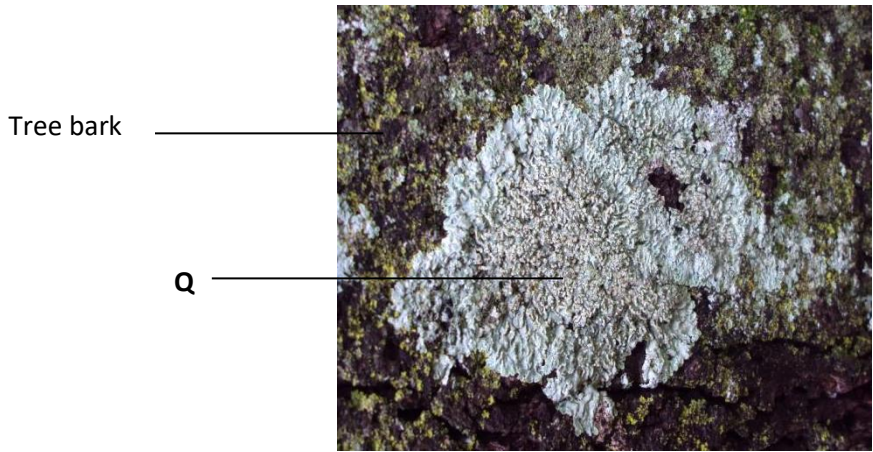
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(ii) Give a reason for your answer in C (i) above

(1mk)

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.....  
.....

(d) The Photograph shown below was taken from a damp tree bark. It has organism **Q** on the surface. Study it then answer the questions.



(i). Name organism labeled **Q**.....(1mark)

(ii). Name two organisms that make up **Q** (2marks)

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.....

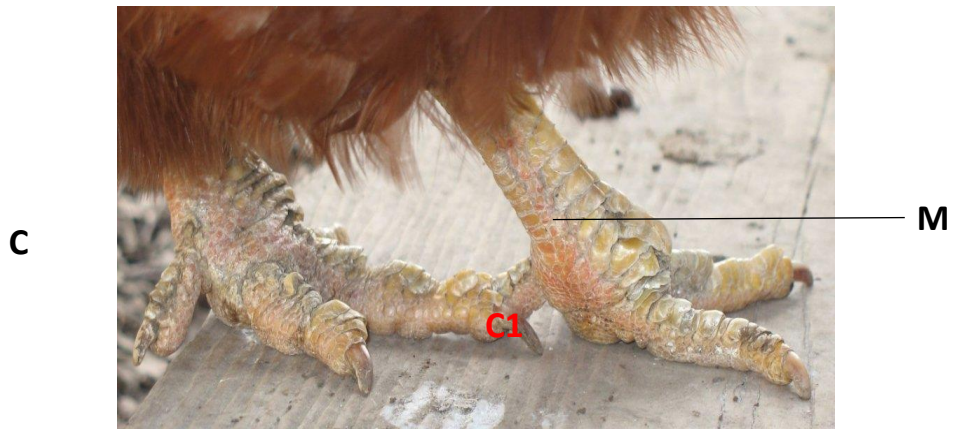
(iii).Suggest the feeding relationship between the identified organisms in **d** (i) above (1mark)

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(iv). Identify the two possible Kingdoms represented by organism **Q**. (2marks)

.....  
.....

3. Study photographs shown below then answer the questions.



(a) State the type of evolution represented by structures **Q1**, **R1** and **S1**. (1mark)

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(b) Explain the type of evolution identified in (a) above. (1mark)

.....

(c) Give the evolution term used to describe structures;

(i) **Q1**, **R1** and **S1**. (1mark)

.....

(ii) **A1**, **B1** and **C1**. (1mark)

.....

d). What type of evolution is illustrated by the limbs (**A1**, **B1** and **C1**)? (1mark)

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e). (i) Name class for organisms labeled **Q**, **R** and **S**.

**Q**.....(1mark)

**R**.....(1mark)

**S**.....(1mark)

(ii) Give two observable reasons for your answer for class **S**. (2marks)

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(f) (i) suggest the diet of animals **B** and **R**.

**B**.....(1mark)

**R**.....(1mark)

(ii) How is beak of animal **B** adapted to its function? (2marks)

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