

Name.....

adm no.class.....

School

231/3

BIOLOGY

PAPER 3 (PRACTICAL)

JUNE 2023

Time: 1 ¾ HOURS

KASSU EXAMINATION -2023

231/3

BIOLOGY PAPER 3 (PRACTICAL)

Time: 1 ¾ HOURS

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INSTRUCTIONS TO CANDIDATES

- Answer ALL the questions.
- 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.
- Answers must be written in the spaces provided in the question paper.
- Additional pages must not be inserted.

FOR EXAMINERS USE ONLY

Question	Maximum score	Candidate's score
1	14	
2	14	
3	12	
Total Score	40Marks	

This paper consists of 5 printed pages. Candidates should check the question paper to ensure that all pages are printed as indicated and no questions are missing

1. You are provided with Solution Z, **15 cm³** solution labeled Q, test tubes, dilute Hydrochloric, and dilute sodium hydroxide solution **W**, Water bath, Bunsen burner, Iodine solution, Benedict's solution, Stop watch and labels. Follow the procedure below and record your observations and conclusions in the table below.

Procedure

Place 5cm³ each of solution Q into 3 test tubes and label them **1A**, **2A** and **3A**.

- I.** To test tube **1A** add 1cm³ of dilute Hydrochloric acid and shake. Add 1cm³ of the **solution Z** and shake.
- II.** To test tube **2A** add 1cm³ of dilute sodium hydroxide and shake. Add 1cm³ of the **solution Z** and shake
- III.** To test tube **3A** add 1cm³ of solution **W** and shake. Add 1cm³ of the **solution Z** and shake
- IV.** Place the three labeled test tubes into a water bath and maintained at 37°C for 20 minutes then divide the portions into another separate test tube as **1A** and **1B**, **2A** and **2B**, **3A** and **3B** respectively.
- V.** Using the reagents provided carry out food test and fill in the table below (12marks)

Test tube	Test with iodine using the A portion		Test with Benedict's using the B portion	
	Observation	Conclusion	Observation	Conclusion
Dilute Hydrochloric acid +solution Q+ solution Z				
Dilute sodium hydroxide+ solution Q+ solution Z				
Solution W + solution Q+ solution Z				

b) What is the identity of solution **Z** ? (1mark)

.....

c) What is the significance of maintaining them at a temperature of 37°C? (1mark)

.....

2. The photograph **P** is a pumpkin fruits with seeds .The seeds were germinated under different conditions as shown in photograph **Q1** and **Q2**

a. Study the photograph **Q1** and **Q2** carefully;

i. Identify the conditions under which seedling in photograph **Q1** and **Q2** were grown (2marks)

Q1:

.....

Q2:

.....

ii. Give a reason for your response of set up in photograph **Q2?** (1mark)

.....

iii. State the differences between seedling in photograph **Q1** and **Q2?** (2marks)

photograph Q1	photograph Q2

iv. A farmer transplanted one of the seedling as shown in photograph **Q1** and it transformed specimen into photograph **R**.The specimen in photograph **R** has developed a certain response to aid in its support:

a) Name the response shown in the shoot of specimen in photograph **R**

(1mark)

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b) Explain how the response occurs?

(3marks)

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.....

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.....

.....

c) What is the significance of this response

(1mark)

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b. An ecologist observed one of the leaves from the plant in in photograph **R** and noted it to have aphids as shown in **photograph S** .Count the number of the aphids and sketch a pyramid of numbers (2marks)

c. Comment on the adaptive advantage that confer the aphids to their habitat (1mark)

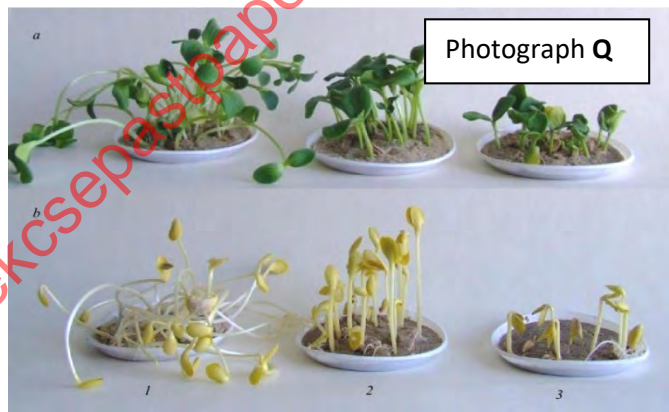
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d. A farmer has tried using a certain aphicide for a long time but it was not able to eliminate the aphids .Explain the reason for this? (1mark)

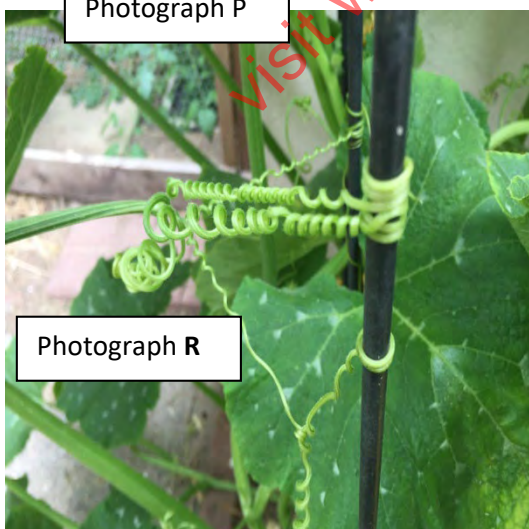
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Photograph P



Photograph Q

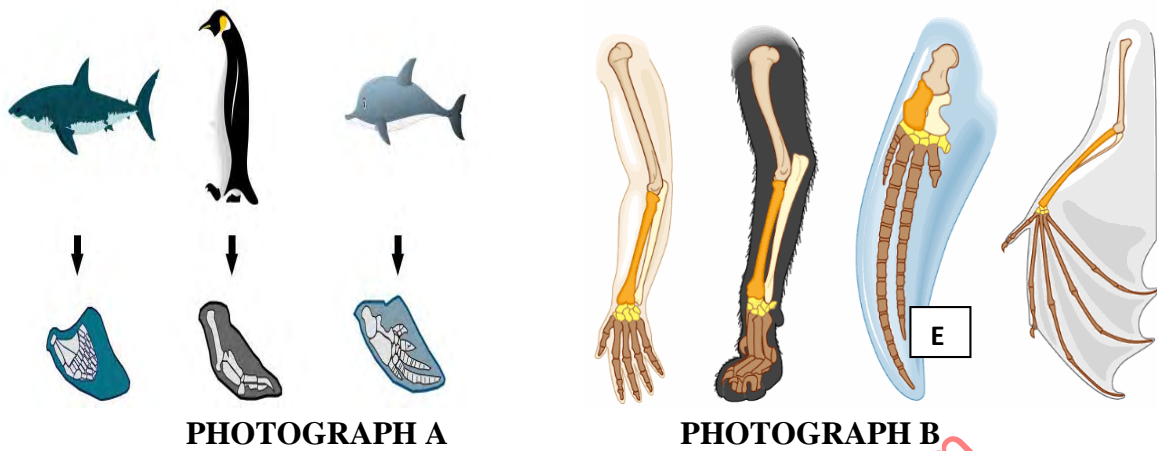


Photograph R



Photograph S

3. The photographs below represent structures of certain animal species. Study them and answer the questions that follow.



a) Identify the type of structure represented by photographs A and B (2marks)

A

B

b) What is the specific function of the three structures shown in the photograph A?

(1 mark)

.....

c) Differentiate between the structures you've name 3(a) above

(4marks)

.....

d) Name the type of evolution exhibited by photographs A and B.

(2marks)

A

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B

.....

e) Using Darwin's theory of evolution, explain how the whale's flipper E would have evolved.

(3 marks)

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