

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

ADM NO.....CLASS.....DATE.....SIGNATURE.....

231/3

BIOLOGY

PAPER 3

PRACTICAL

TIME: 1¼ HOURS

MECS CLUSTER JOINT EXAMINATION TERM 2 2021

Kenya Certificate of Secondary Education

Instructions to Candidates

1. Write your name, Index number and your other details in the spaces provided above.
2. Spend the first 15 minutes of the time allocated to read through the question paper.
3. Answer all the questions in the spaces provided only.
4. Wrong spelling especially of biological terms will be penalized.

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	18	
2	10	
3	12	
TOTAL	40	

This paper consists of 6 printed pages

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

1. (a) You are provided with solution Q, Solution W, Visking tubing and a thread. Divide solution Q and W into two halves in separate beakers. Use one half for **Procedure 1** and second half for **Procedure II**.

Procedure 1

- ❖ Using reagents provided and one half of solution Q, carry out tests to determine the food substance present in solution Q.
- ❖ Record the procedure, observations and conclusions in the table below.
- ❖ Repeat the same procedure using the half of solution W. (10mks)

Test	Food Solution	Procedure	Observation	Conclusion
Starch	Q			
	W			
Reducing sugars	Q			
	W			

Procedure II

(Clean and rinse properly any of the beakers that contained Solution W or Solution Q for use in this procedure)

- ❖ Tie one end of visking tubing provided with a thread tightly.
- ❖ Measure about 5ml of solution Q into the visking tubing (**Stir the solution thoroughly before use**).
- ❖ Tie the other end tightly to ensure that there is no leakage.
- ❖ Immerse the visking tubing and its content into a beaker containing solution W.
- ❖ Allow it to stand for 20 minutes.
- ❖ After 20 minutes empty the content of the visking tubing into a clean empty beaker.

b) Use the solution that was in the visking tube to test for starch and reducing sugars. Record the observations and conclusions in the table below:

Test	Observations	Conclusions
Starch test		
Reducing sugars test		

i) Name the physiological process being investigated in the experiment. (4mks)
(1mark)

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ii) Which structure in the living organism is represented by the visking tubing? (1mark)

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iii) Account for the observation made in the table (b) above. (2marks)

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2 a) Study the photograph below. The specimen had been placed in adequate light at a horizontal position for one week.



i) What was the aim of this experiment? (1 mark)

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ii) What would be the result if seedling is placed on a working klinostat? (1 mark)

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iii) Explain how the growth curvature occurred. (3 marks)

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b) Study the Photographs below and answer the questions that follows :



i) Name the type of relationship in Photograph E and F:

Photograph E(1mk)

Photograph F(1mk)

ii) What is the importance of the relationship taking place in Photograph E. (1mk)

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.....

iii) Using observable features only explain two ways in which the flower is adapted for the activity taking place in Photograph F. (2mks)

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3. The photographs below shows bones obtained from different regions of a mammalian body. The photographs are in different views.



Anterior view of bone A



Dorsal lateral view of Bone B



Anterior view of bone C

a) Identify the bones. (3 marks)

A.....

B.....

C.....

b) Name the regions from which bone B was obtained from. (1 marks)

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c) State **two** distinguishing features of the bone in photograph labeled B. (2 marks)

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d) State the significance of the part labeled T in the photograph of bone A. (1 mark)

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e) With reason state the type of joint formed at the distal and proximal ends of specimen C.

(4 marks)

i) Distal end

Reason

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.....

ii) Proximal end.

Reason

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.....

f) Name the bone that articulates with the proximal end of the bone in photograph labelled C.

.....(1 mark)