NAME……..…… INDEX NO.:……...

STREAM: …..…… ADM NO: ……

DATE: ……..……

231/3
BIOLOGY
PAPER 3
(PRACTICAL)
AUGUST-2022
TIME: 1HR 45 MIN

MINCKS GROUP OF SCHOOLS

FORM FOUR EXAM

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

231/3
BIOLOGY
PAPER 3
(PRACTICAL)
AUGUST-2022
TIME: 1HR 45 MIN

INSTRUCTIONS TO CANDIDATES

- Write your name and Adm.No. in the spaces provided.
- Answer all the questions in the spaces provided
- Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.

FOR EXAMINERS USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1		
2		
3		
TOTAL	**40**	

1. You are provided with solutions labeled L_1,L_2 and L_3. L_3 is the same as L_2 except that L_3 has been boiled.
Label three test tubes A,B and C. into the test-tube labeled A, add 1ml of solution L_1.
Into the test tube labeled B, add 1ml of L_1 and 1ml of L_2.
Into the test tube labeled C, add 1ml of L_1 and 1ml of L_3.

a) Withdraw a drop from test tube A and place in on a white tile. To the drop, add one drop of iodine solution. Record your observation in the table below. (3mks)

Test tube	Observation	conclusion
A		
B		
C		

Repeat the procedure with contents in test-tubes B and C. record your observations in the table. Place the three test tubes labeled A,B and C into a water bath at 37^{o}C. Ensure that the temperature of the water bath does not fall below 35^{o}C or exceed 38^{o}C. Leave the set up for about 30 minutes.

b) After 30 minutes, test the contents of each of the test tubes labeled A,B and C following the procedure in (a) above. Record your observations in the table below. (3mks)

Test tube	Observation	conclusion
A		
B		
C		

c) Account for the results at the end of the experiment in the test tube labeled:

i) B _____(1mk)

ii) C _____ (2mks)

d)i) Suggest the identity of solution L_2. (1mk)

_____

_____

ii) Give reasons for your answer in d(i) above. (3mks)

_____

_____

_____

e)i) Suggest where the process being investigated in this experiment would take place in:-

an animal _____

a plant _____

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

_____

_____2.

You are provided with a piece of petiole of kale, two unknown liquids labeled E_1 and E_2, means of cutting and means of timing.

i) Using the blade split the pieces lengthwise into halves and then into quarters.
ii) Place two of the splits in liquid E_1 and the other two in liquid E_2.
iii) Allow the set up to stand for 30 minutes

a) Record the appearance of the splits placed in:

i) Liquid E_1 (1mk)

_____

_____

ii) Liquid E_2 (1mk)

_____

_____

b) Account for the appearance of the split placed in

i) Liquid E_1. (4mks)

ii) Liquid E_2. (3mks)

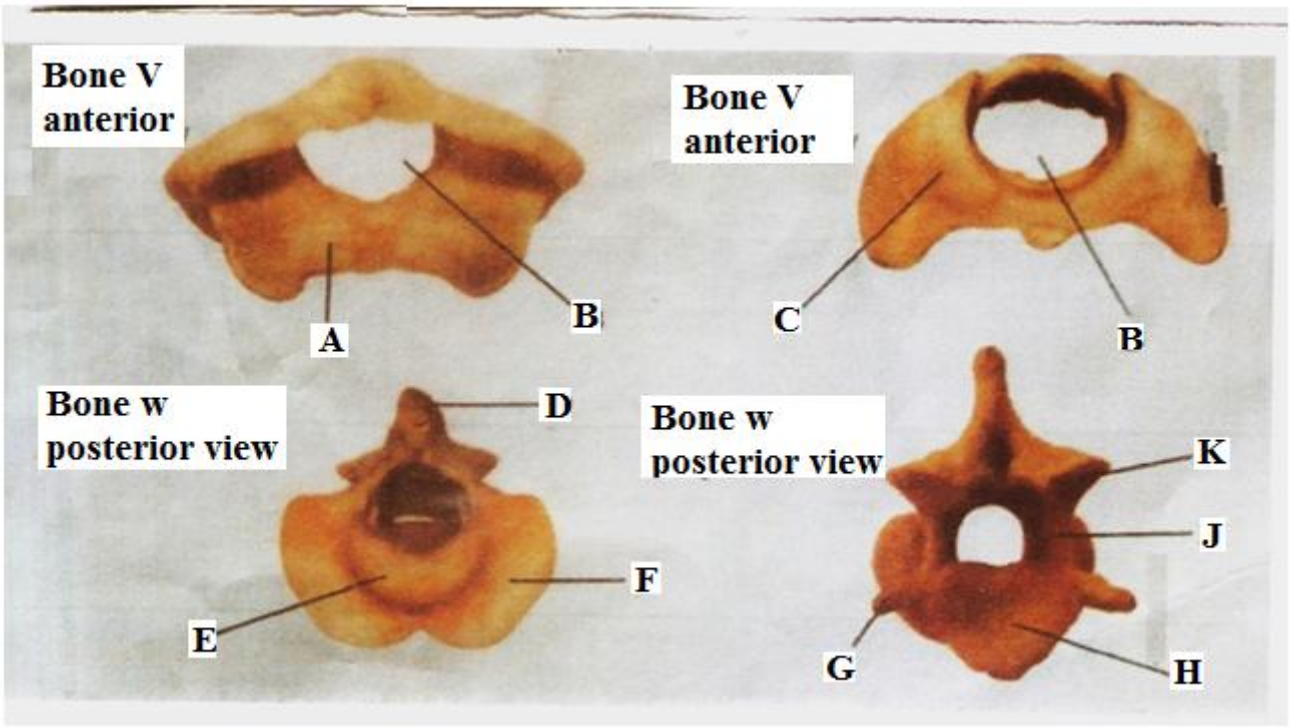
c) State the importance of the physiological process in the above experiment in plants.(3mks)

_____

_____

_____

3. The photograph below is specimen from the same animal of two different bones each shown in two views. Examine them.



a) Identify the two specimens. (2mks)

Specimen V _____

Specimen W _____

b) Give four observable differences between bones V and W. (4mks)

_____

_____

_____

_____

_____

_____

c) Name the structure that articulated with part labeled A. (1mk)

_____

d) State two roles of opening labeled B. (2mks)

_____

_____

_____

e) Name the part labeled E. (1mk)

_____

f) State the function of each part labeled H and J on bone W. (2mks)

H _____

J _____

THIS IS THE LAST PRINTED PAGE!