23.4.3 Biology Paper 3(231/3)

Name .....**Index Number**...../.....

231/3
BIOLOGY
Paper 3
(PRACTICAL)
Oct./Nov. 2007
1 ¾ hours

Candidate's Signature .....

Date .....

THE KENYA NATIONAL EXAMINATIONS COUNCIL
Kenya Certificate of Secondary Education
BIOLOGY
Paper 3
(PRACTICAL)
1 ¾ hours

INSTRUCTIONS TO CANDIDATES

Write your name and index number in the spaces provided at the top of this page.
Sign and write the date of examination in the spaces provided above.
*Answer **ALL** the questions.*
You are required to spend the first 15 minutes of the 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 Examiner's Use Only

Question	Maximum Score	Candidate's Score
1	15	
2	13	
3	12	
Total Score	**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 no questions are missing.

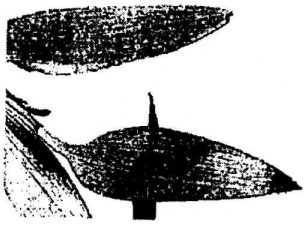
7020

Turn over

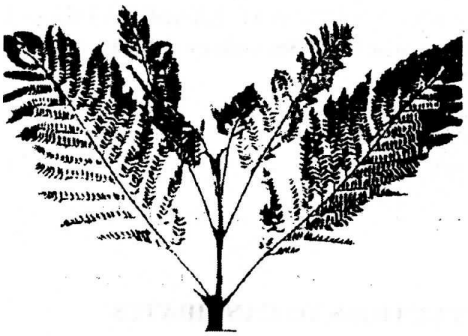
1 Below are photographs labelled **P, Q, R, S, T, U** and **V** of twigs obtained from plants. Examine them.

P

Q



R



S

T

U

V

7020

(a) Using observable features in the photographs, complete the dichotomous key given below. (3 marks)

1 a Simple leaves	go to 2
b Compound leaves	go to 5
2 a Leaves net-veined	go to 3
b Leaves parallel-veined	Commelinaceae
3 a	go to 4
b Leaves with smooth margin	Nyctaginaceae
4 a Leaves alternate	Malvaceae
b	Verbenaceae
5 a	go to 6
b Leaves bipinnate	Bignoniaceae
6 a Leaflets with serrated margin	Compositae
b Leaflets with smooth margin	Papilionaceae

(b) Use the completed dichotomous key to identify the family to which each plant belongs. In each case show the steps you followed to arrive at the identity. (12 marks)

	Identity	**Steps followed**
P	.....	.....
Q	.....	.....
R	.....	.....
S	.....	.....
T	.....	.....
U	.....	.....
V	.....	.....

2 You are provided with solutions labelled **P, Q, S** and a filter paper. The solution labelled **P** will be used in parts (a), (b) and (c).
Solution **Q** is iodine solution.

(a) Use the iodine solution to test for the presence of the food substance in solution **P**.

Food substance (1 mark)

Procedure (1 mark)

Observation (1 mark)

Conclusion (1 mark)

Solution **S** is Benedict's solution.

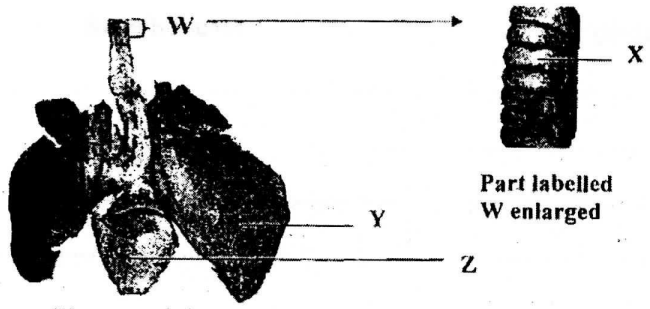
(b) Use the Benedict's solution to test for the presence of the food substance in solution **P**.

Food substance	(1 mark)
Procedure	(2 marks)
Observation	(1 mark)
Conclusion	(1 mark)

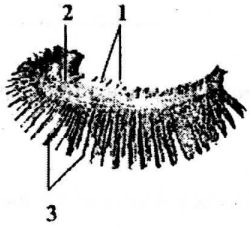
(c) Using the filter paper provided, test for the presence of lipids in solution **P**.

Procedure	(2 marks)
Observation	(1 mark)
Conclusion	(1 mark)

3 Below are photographs labelled **J** and **K** of organs obtained from different animals. The organs perform similar functions. Examine them.



Photograph J



Photograph K

(a) Identify the organs. (2 marks)

J .....

K .....

(b) State the function performed by the organs. (1 mark)

(c) Name the parts labelled **X, Y** and **Z** in photograph **J**. (3 marks)

X .....

Y .....

Z .....

(d) (i) Identify the parts labelled 1, 2 and 3 in photograph **K**. (3 marks)

1. .....

2. .....

3. .....

(ii) Using observable features, state how the parts labelled 1 and 3 you identified in (d) (i) above are adapted to their functions. (4 marks)