NAME OF SCHOOL: .....

NAME OF CANDIDATE: .....

INDEX NO: ..... SIGNATURE: .....

553/2
BIOLOGY
PAPER 2
JULY/AUGUST
2 HOURS

ELITE EXAMINATION BUREAU MOCK 2019

Uganda Certificateof Education

BIOLOGY
PAPER 2
(Practical)

2 HOURS

INSTRUCTIONS TO CANDIDATES:

- *Attempt all questions from this paper*
- *All answers must be written in the spaces provided.*
- *All drawings must be in pencil.*
- *Present neat work for marking.*

FOR EXAMINERS' USE ONLY

QUESTION	MARKS	EXAMINER'S INITIALS
1		
2		
3		
TOTAL		

1. You are provided with the following;
Solution X and Y, extract E, solutions A and B, Blue and Red litmus papers, heat source and a thermometer.

a) Carry out the following tests and record your observations and deductions in the table below. (7 ½ marks)

Test tube	Procedure	Observations	Deductions	
1	To 1cm^3 of X in a test tube, add blue and red litmus paper.			(1½ mark)
2	To 1cm^3 of Y in a test tube add blue and red litmus paper			(1½ mark)
3	To 2cm^3 of extract E, add 1cm^3 of sodium hydroxide solution followed by 3 drops of copper II sulphate solution.			(1½ mark)
4	To 2cm^3 of Extract E, add 5 drops of Iodine solution			(1½ mark)
5	To 1cm^3 of DCPIP add extract E drop wise.			(1½ mark)

b) What food substance is present in Extract E? (½ mark)

.....

c) Prepare 6 clean test tubes and to each, add 2cm^3 of extract E, label them 1, 2, 3, 4, 5 and 6 respectively. Treat them as required in the instructions below.

i) To test tube 1, add 1cm^3 of solution **X** followed by 1cm^3 of solution **A**.

ii) To test tube 2, add 1cm^3 of solution **Y** followed by 1cm^3 of solution **B**.

iii) To test tube 3, add 1cm^3 of solution **B** and boil for 2 minutes

iv) To test tube 4, add 1cm^3 of solution **A** and boil for 2 minutes

v) To test tube 5, add 1cm^3 of solution **X** followed by 1cm^3 of solution **B**.

vi) To test tube 6, add 1cm^3 of solution **Y** followed by 1cm^3 of solution **A**. Incubate test tubes, 1, 2, 3, 4, 5 and 6 in water bath maintained at 37^{0}C, for 35 minutes.

(THE CANDIDATE CAN DO ANOTHER QUESTION DURING THE 35 MINUTES)

After 35 minutes, perform the Biuret's test on the six test tubes and record your results in the table below.

Test procedure:

To 2cm^3 of mixture from each separate test tube, but in a clean test tube add 1cm^3 of dilute sodium hydroxide solution followed by 3 drops of copper II sulphate solution. (9 marks)

Test tube	Observations	Deduction
1		
2		
3		
4		

5		
6		

d) i) Suggest the aim of the experiment. (1 mark)

.....

.....

ii) Explain the results obtained in test tube 1 and 2.

Explanation: (1 mark)

Test tube 1:

.....

.....

Explanation: (1 mark)

Test tube 2:

.....

.....

2. You are provided with specimens K and L which are plant organs. Study them carefully and use them to answer questions that follow.

a) Examine specimen K, carefully and state the type of pollination giving two reasons. (2 marks)

i) Type of pollination.

.....

Reasons.

i) .....

.....

ii) .....

.....

b) Observe the calyx, corolla, androecium and gynoecium, state three descriptive features for each case in the table below. (6 marks)

Structure	Description
Calyx	
Corolla	
Androecium	
Gynoecium	

c) Using a razor blade, cut through the centre of specimen K and L longitudinally in such a way to pass through the middle line of stigma and ovary. Display one half of each specimen, Draw and label the specimens and state your magnification in the space below.

For specimen K.

For specimen L.

3. You are provided with specimens K_1, K_2, K_3 obtained from the same animal. Study them carefully and then answer the questions that follow.

a) Giving reasons in each case identify the specimens. (4½ marks)

i) K_1. .....

Reasons:

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.....

.....

.....

i) K_2. .....

Reasons:

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.....

.....

.....

i) K_3. .....

Reasons:

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.....

b) i) State the function of K_1 and K_2. (2 marks)

K_1.

.....

.....

K_2.

.....

.....

ii) State the adaptations of each specimen to its function. (4 marks)

K_1.

.....

.....

.....

.....

K_2.

.....

.....

.....

.....

c) State four structural differences between specimens K_1 and K_2.

(4 marks)

	Specimen K_1	**Specimen K_2**
i)		

ii)		
iii)		
iv)		

d) Draw and label specimen K_3 in the space provided, state your magnification. (6 marks)

END