Candidate's Name: .....

Signature: .....

Random No.						Personal No.		

(Do not write your School/Centre Name or Number anywhere on this booklet.)

553/2
BIOLOGY
PRACTICAL
Paper 2
Oct./Nov. 2022
2 hours

UGANDA NATIONAL EXAMINATIONS BOARD

Uganda Certificate of Education

BIOLOGY PRACTICAL

Paper 2

2 hours

INSTRUCTIONS TO CANDIDATES:

This paper consists of **three** *questions.*

Answer **all** *questions.*

Drawings should be made in the spaces provided.

Use **sharp pencils** *for your drawings.*

Coloured pencils or crayons should **not** *be used.*

No *additional sheets of writing paper are to be inserted in this booklet.*

Work on additional sheets will **not** *be marked.*

FOR EXAMINERS' USE ONLY		
Question	**Marks**	**Examiner's Signature & No.**
1		
2		
3		
Total		

1. Specimens **E** and **F** are solutions, and specimen **W** is a fresh plant structure.

Put 15 cm^3 of solution **E** into a beaker and label the beaker **1**.
Put 15 cm^3 of solution **F** into a beaker and label the beaker **2**.

Using a knife, peel off a thin layer from specimen **W**. Trim the peelings to obtain **two** strips, each measuring 3 cm long and 0.5 cm wide.

Put one strip into each of the beakers **1** and **2** and make sure that the solution covers the whole strip properly.

Leave the strips in the solutions for about **20** minutes. (*Meanwhile you may continue doing some other work.*)

(a) After **20** minutes:

(i) Make a labelled drawing of each of the strips from each of the beakers in the spaces provided in table **1**. State the magnification of each drawing. (*06 marks*)

Table 1

Beaker	Drawing of the strip
1	
2	

(ii) Feel with your fingers and observe each of the strips in beakers **1** and **2**. Explain the observation(s) and the feeling you made on strips in:

Beaker 1. (*04 marks*)

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Beaker 2. *(04 marks)*

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(b) How is the process being investigated in the experiment important to the plant? *(04 marks)*

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(c) How can the strip in beaker 1 be reversed to its original condition? *(02 marks)*

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2. You are provided with specimens **A** and **B** which are plants.

(a) Describe the root system of specimen **A**. *(04 marks)*

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(b) State **four** structural differences between the shoot systems of specimens **A** and **B.** *(04 marks)*

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(c) How is specimen **A** adapted for survival in its habitat? *(06 marks)*

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(d) Cut off the root system of specimen **B**.
Draw and label the remaining parts of the specimen. State your magnification. *(06 marks)*

(c) Using a hand lens, examine the structures on the head of each of the specimens **X** and **Y**. In the spaces provided in table **3**, state the differences between the heads of specimens **X** and **Y**.

Table 3 *(03 marks)*

	Head of specimen **X**	Head of specimen **Y**
(i)		
(ii)		
(iii)		

(d) **Explain the ecological importance of specimen Y to its natural environment.** *(03 marks)*

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(e) Draw and label the head and thorax of specimen **X** from the dorsal view. State the magnification of your drawing. *(05 marks)*