

**553/3 Inst. Sch.
Biology
Practical
Instructions
Oct./Nov. 2024**



UGANDA NATIONAL EXAMINATIONS BOARD

Uganda Certificate of Education

BIOLOGY PRACTICAL INSTRUCTIONS

553/3 Inst. Sch.

October/November 2024

CONFIDENTIAL

This information is given only to facilitate preparation of the examination.

Great care should be taken so that the information given below does not reach the candidates either directly or indirectly.

INSTRUCTIONS FOR PREPARING SPECIMENS AND APPARATUS

The teacher responsible for preparing specimens must ensure that candidates are provided with correct specimens and other materials as specified in these instructions. Specimens and solutions which have been assigned codes should be presented to candidates using those **codes only** and not any other identity. The head teacher **must** ensure that the teacher responsible for preparing the specimens hands in his/her procedure and trial results for the physiology/biochemistry item, properly sealed in a separate envelope and **firmly** fastened (attached) to the candidates' script envelope(s).

Each candidate should be provided with:

A mature bean pod, labelled **W**.

A mature *Desmodium* fruit, labelled **X**.

A mature *Tridax* fruit, labelled **Y**.

A mature orange fruit, labelled **Z**.

20 cm³ of solution **R**.

*(To make solution **R**, soak bean seeds for 24 hours, crush 30 g of the soaked seeds into a paste, add 100 cm³ of distilled water to it. Mix the solution with 100 cm³ of orange juice then top up the resultant solution with distilled water to make 1 litre.)*

20 cm³ of solution **S**.

*(To make solution **S**, dilute 100 cm³ of egg albumen with distilled water to make 1 litre.)*

5 cm³ of 1 % amylase solution, labelled **T**.

6 test tubes.

Hand lens.

Thermometer.

2 plastic beakers.

2 filter papers.

Access to:

Water.

Heat source.

Reagents for carrying out food tests.

This form MUST be completed and returned in a separate envelope firmly attached to the script envelope(s).

UGANDA CERTIFICATE OF EDUCATION

October/November, 2024

REPORT ON BIOLOGY PRACTICAL 553/3

Section I:

Any information which the teacher responsible for preparing the specimens and apparatus thinks may be useful to the examiners should be given on this sheet. The teacher must try out the physiology/ biochemistry item and submit his/her results indicating the procedure used in the space provided below to guide the examiners about the specimens, apparatus, and concentrations of the chemicals used.

NB: Teachers who **do not** submit their procedure and trial results will be held responsible for their candidates' performance.

Procedure and results:

This image shows a single page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page, leaving small margins at the top and bottom. There are no vertical margin lines, text, or other markings on the page.

[illegible]

Section II:

The invigilator in consultation with the teacher responsible for preparing the specimens should give details below of any difficulties experienced by particular candidates, giving their names and personal numbers. This should include:

(a) Candidates who were unable to use specimens.

(b) Insufficiency of specimens or shared specimens.

(c) Substituted specimens.

(d) Any other information.

Other cases of hardship e.g. illness, disability, should be reported directly to **UNEB** in the normal way.

A plan of work benches, giving details by personal numbers of the places occupied by the candidates for each session, must be enclosed with the scripts.

DO NOT STAMP ANYWHERE ON THIS DOCUMENT.

Invigilator's Name _____ Signature _____

Signature of the teacher responsible for preparing specimen _____

Signature of the head teacher _____

Random Number _____

Candidate's Name:

Signature:

Random No.					Personal No.		

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

553/3
BIOLOGY
Paper 3
(Practical)
Oct./Nov. 2024
2½ hours



UGANDA NATIONAL EXAMINATIONS BOARD

Uganda Certificate of Education

BIOLOGY

Paper 3
(Practical)

2 hours 30 minutes

INSTRUCTIONS TO CANDIDATES:

This paper consists of two examination items. Answer all the examination items in the spaces provided.

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 the booklet.

Work on additional sheets of paper will not be scored.

Item 1

Hamza is a better swimmer than Fred. In preparation for a swimming competition that would take place in three months' time, Fred visited a nutritionist to find out a suitable diet to feed on and Hamza continued with his usual diet. Both of them continued with normal training. During the competition, Fred emerged the winner. Hamza was disappointed and wondered why he did not win.

Solution **R** is a sample from the nutritionist's recommended diet for Fred.

Solution S is a sample of the usual diet of Hamza.

Task:

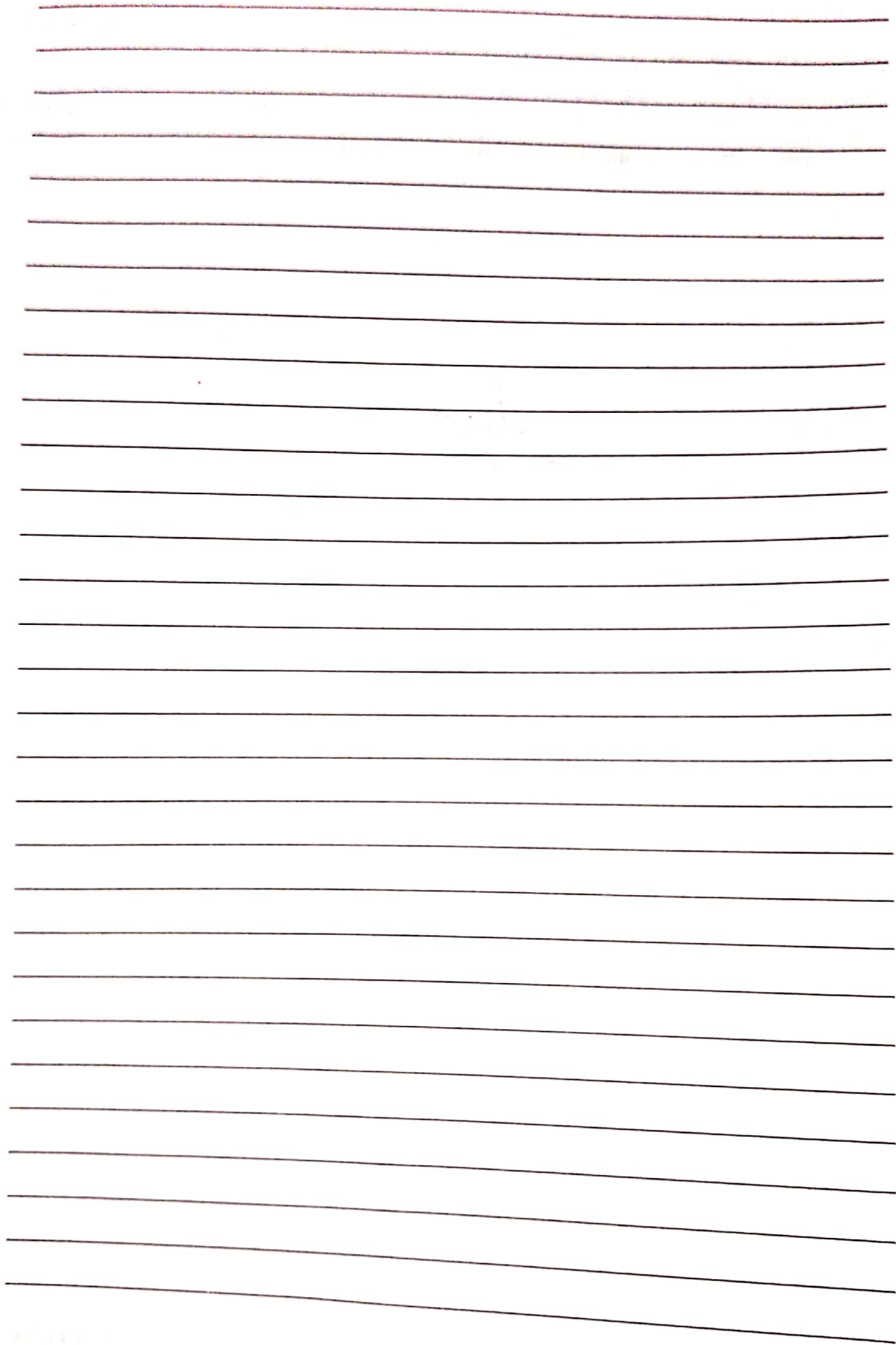
Design and carry out an investigation on solutions **R** and **S**. Use your results to explain to Hamza why he did not win.

Your design and investigation should include the following:

- (a) (i) Aim, hypothesis, variables and apparatus/requirements.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

(ii) Procedure and results of your experiment.



(b) Using your results, explain to Hamza why he did not win.

Item 2

Jane and Shakirah are farmers whose gardens are located 100 metres apart. Immediately after weeding her overgrown bushy banana plantation, Jane went to help Shakirah plant maize in her garden. At harvest time, Shakirah observed other mature plants in her garden some of which she had seen in Jane's banana plantation. Shakirah wondered how the other plants reached her garden.

Specimens W, X and Y are plant parts collected from the mature plants in Shakirah's garden.

Task:

- (a) (i) Using observable features, identify specimens W, X and Y.

- (ii) State the specimen(s) most likely to have been brought to Shakirah's maize garden unintentionally. Give reason(s) for your answer(s).

Ten horizontal wavy lines, each consisting of two parallel lines, providing a guide for drawing a specimen.

(b) Draw and label specimen X.



UGANDA NATIONAL EXAMINATIONS BOARD
UGANDA CERTIFICATE OF EDUCATION
OCTOBER – NOVEMBER, 2024

UCE

Do not
write
in this
margin

Candidate's Name:

Signature:

Random No.															
Personal Number															

Subject: Paper Code/.....

Do not
write
in this
margin

FOR SCORERS' USE ONLY

Item _____

Basis code															
Score															

Scorer's initials

Item _____

Basis code															
Score															

Scorer's initials

Item _____

Basis code															
Score															

Scorer's initials

Item _____

Basis code															
Score															

Scorer's initials

Item _____

Basis code															
Score															

Scorer's initials