

Rwanda National Biology III S6 Collection (2003 - 2023)

BIOLOGY-CHEMISTRY-GEOGRAPHY (BCG)

- MATHEMATICS-CHEMISTRY-BIOLOGY (MCB)

- PHYSICS-CHEMISTRY-BIOLOGY (PCB)

This document is a compilation of all Rwanda National assembled by Tubimenye Smart Solution Ltd.

Biology III S6 Exam

from 2003- 2023, carefully

Enhance Your Learning with AI-Powered Tools!



Real-Time Exam Simulation:

Experience AI-powered marking with offline access at <https://mytrained.web.app/> or download the My Trained app from the Play Store.



Affordable Printing Services:

Easily print this document and similar materials through our remote printing service at <https://e-printer.web.app/>. Get your hard copy delivered to you or pick it up from our office.



Urutonde rw'Ibizamini bya Leta Biology III S6 Exam mu Rwanda (2003 - 2023)

Iyi nyandiko ni urutonde rw'Ibizamini bya Leta bya **Biology III S6 Exam** byatanzwe mu Rwanda kuva mu mwaka wa 2006 Kugeza 2023, yahurijwe hamwe na Tubimenye Smart Solution Ltd.

Teza Imyigire Yawe Imbere Ukoreshheje Ikoranabuhanga rya AI!



Gusubira mu Ibizamini bya Leta mu Gihe Gito ukabona ibisubizo:

Gerageza uko ushoboye ukoreshheje igisubizo cyacu cya AI Model ishoboye gukosora ibizamini mu buryo bwihuse n'iyo udafite internet igatanga amaota ako kanya Kanda hano <https://mytrained.web.app/> cyangwa ushake App yitwa My Trained kuri Play Store.



Serivisi yo Gucapa ku Giciro Gito aho waba uri hose

Ushobora gucapa utavuye ahi uri, iyi nyandiko n'izindi nkayo ukoreshheje serivisi yacu ya e-printing kuri <https://e-printer.web.app/>. Yuma yo gucapwa(printing)ubona sms, Wayoherezwa aho uri cyangwa ukayifatira ku biro byacu.



TUBIMENYE SMART SOLUTION Ltd

KANDA *584# NA SMART PHONE YAWE:
WIGE AMATEGEKO Y'UMUHANDA
MUBURYO BWIZA, BWIHUSE
UTAVUYE AHO URI
KURI PLAY STORE
ANDIKA:
MATEGEKO Y'UMUHANDA V3

UBONE AI MODEL IKORESH'UBUHANGA BWA AI MUKWIGISHA:
WIGE, USUBIREMO IBIZAMINI BYA LETA BYOSE, HOMEWORKS,
HOLIDAY PACKAGES, IELT PREP, TOEFL PREP, ETC...

KURI PLAY STORE
ANDIKA:
MY TRAINED

Helpline Tel: 0789251123 / 0789470000

SURA: <https://mytrained.web.app/>
Authorization No. RURA/ICT/AUT/240480644

Collection by T smart solution Ltd get real time AI Exam simulator at <https://mytrained.web.app/>

Biology III

013

04/08/2023 08:30 AM – 10:00 AM



ADVANCED LEVEL NATIONAL EXAMINATIONS, 2022-2023

SUBJECT: BIOLOGY III

PAPER III: ALTERNATIVE TO PRACTICAL

COMBINATIONS:

- BIOLOGY-CHEMISTRY-GEOGRAPHY (**BCG**)
- MATHEMATICS-CHEMISTRY-BIOLOGY (**MCB**)
- PHYSICS-CHEMISTRY-BIOLOGY (**PCB**)

DURATION: 1h30 min

INSTRUCTIONS:

- 1) Write your names and index number on the answer booklet as written on your registration form and **DO NOT** write your names and index number on additional answer sheets if provided.
- 2) Do not open this question paper until you are told to do so.
- 3) This paper consists of **one** compulsory question. (**20 marks**)
- 4) Use only a **blue** or **black** pen.

1. The table below shows results obtained from an investigation carried out on a fresh water plant. The plant was placed under water which had its CO₂ concentration varied as a number of bubbles of oxygen evolved per minute by the plant, and was observed and recorded. The experiment was carried out under sunlight at 25°C.

CO₂ concentration % by volume	Number of bubbles per minute
0.00	0
0.02	04
0.08	20
0.14	24
0.18	24

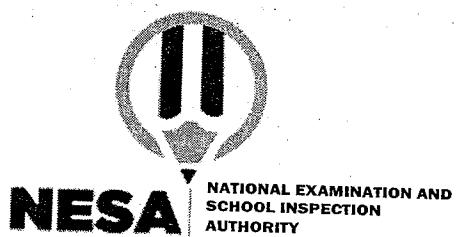
- a) What was the aim of the experiment? **(1 mark)**
- b) In the space provided, draw a graph to represent the information in the table above. **(6 marks)**
- c) Using the information in table above explain the observations:
- (i) CO₂ concentration of 0.00 **(3 marks)**
- (ii) Between the CO₂ concentration of 0.02 and 0.18 **(8 marks)**
- d) Suggest an explanation for what would be observed in the experiment if the:
- (i) CO₂ concentration was increased to 0.20 **(1 mark)**
- (ii) The temperature was lowered to 5°C **(1 mark)**

-END-

Biology III

013

05/08/2022 08:30 AM – 10:00 AM



ADVANCED LEVEL NATIONAL EXAMINATIONS, 2021-2022

SUBJECT: BIOLOGY III

PAPER III: PRACTICAL

COMBINATIONS:

- BIOLOGY-CHEMISTRY-GEOGRAPHY (**BCG**)
- MATHEMATICS-CHEMISTRY-BIOLOGY (**MCB**)
- PHYSICS-CHEMISTRY-BIOLOGY (**PCB**)

DURATION: 1h30 min

INSTRUCTIONS:

- 1) Write your names and index number on the answer booklet as written on your registration form and **DO NOT** write your names and index number on additional answer sheets if provided.
- 2) Do not open this question paper until you are told to do so.
- 3) This paper consists of one compulsory question. (**20 marks**)
- 4) Use only a **blue** or **black** pen.

ALL QUESTIONS ARE COMPULSORY (20 marks)

- 1) You are provided with specimens **X** and **Y**

- a) Which part of the plant are the specimen?

Name:.....

(1 mark)

Reason:.....

(3 marks)

- b) Cut the specimens **X** and **Y** transversely.

Identify the specimens **X** and **Y**.

X.....

(1 mark)

Y.....

(1 mark)

- c) Outline five differences between specimen **X** and **Y**.

(5 marks)

Specimen X	Specimen Y
(i)	
(ii)	
(iii)	
(iv)	
(v)	

- d) Explain how the specimens are dispersed.

(1 mark)

- e) Explain the arrangement of seeds in the specimens **X** and **Y**.

(i) Specimen **X**.

(2 marks)

(ii) Specimen **Y**.

(2 marks)

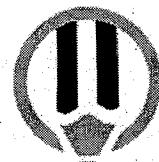
- f) Draw and label one half section of specimen **X**.

(4 marks)

Biology III

013

30/07/2021 08:30 AM – 10:00 AM



NESA NATIONAL EXAMINATION AND
SCHOOL INSPECTION AUTHORITY

ADVANCED LEVEL NATIONAL EXAMINATIONS, 2020-2021

SUBJECT: BIOLOGY III PRACTICAL EXAM

COMBINATIONS:

- BIOLOGY-CHEMISTRY-GEOGRAPHY (BCG)
- MATHEMATICS-CHEMISTRY-BIOLOGY (MCB)
- PHYSICS-CHEMISTRY-BIOLOGY (PCB)

DURATION: 1 hour 30 minutes

Marks: /30

INSTRUCTIONS:

- 1) Write your names and index number on the answer booklet as written on your registration form and **DO NOT** write your names and index number on additional answer sheets if provided.
- 2) Do not open this question paper until you are told to do so.
- 3) Answer the two questions in this paper and record your answers in the spaces provided.
- 4) Use only a **blue** or **black** pen.

All questions are compulsory

- 1) You are provided with Solution B. You are required to establish the food substances in Solution B.

- a) Carry out the following tests and record the observations and deductions in the table below.

(10 marks)

TESTS	OBSERVATION	DEDUCTION
(i) To 2 cm ³ of Solution B in a test tube, add 2 drops of Iodine solution		
(ii) To 2 cm ³ of Solution B, add equal volume of Benedict's solution and boil		
(iii) To 2 cm ³ of Solution B, add 4 drops of NaOH, shake, add 2 drops of CuSO ₄ and shake		
iv) To 2 cm ³ of Solution B, add 4 drops of Ethanol and shake		
(v) To 3 drops of DCPIP, add solution B dropwise until excess		

- b) (i) From the tests carried out in the table above, list the food substances in Solution B.

(2 marks)

- (ii) What is the significance of NaOH in test tube (iii) in the table above?

(1 mark)

- c) (i) Explain the observation of the following tests in the table above.

Test (ii).....

.....

(2 marks)

Test (v).....

.....

(2 marks)

- 2) You are provided with Solution X. You are required to identify the food substance in Solution X.
- a) Carry out the tests in the table below and record the observations and deductions. **(10 marks)**

TESTS	OBSERVATION	DEDUCTION
(i) To 2 cm ³ of Solution X in a test tube, add 2 drops of Iodine solution		
(ii) To 2 cm ³ of Solution X, add equal volume of Benedict's solution and boil		
(iii) To 2 cm ³ of Solution X, add 4 drops of NaOH, shake, add 2 drops of CuSO ₄ and shake		
iv) To 2 cm ³ of Solution X, add 4 drops of Ethanol and shake		
(v) To 3 drops of DCPIP, add solution X dropwise until excess		

- b) (i) Name the food substances in Solution X. **(2 marks)**
- (ii) Give the significance of food substances in Solution X. **(1 mark)**

BLANK PAGE

BIOLOGY III

013

22/11/2019 8:30 AM – 10:00 AM



ADVANCED LEVEL NATIONAL EXAMINATIONS, 2019

SUBJECT: BIOLOGY

PAPER III: PRACTICAL

COMBINATIONS:

- BIOLOGY - CHEMISTRY - GEOGRAPHY (BCG)**
- MATHEMATICS - CHEMISTRY - BIOLOGY (MCB)**
- PHYSICS - CHEMISTRY - BIOLOGY (PCB)**

DURATION: 1 hour 30 minutes

INSTRUCTIONS:

- 1) Write your names and index number on the answer booklet as written on your registration form and **DO NOT** write your names and index number on additional answer sheets of paper if provided.
- 2) Do not open this question paper until you are told to do so.
- 3) Answer the questions in this paper and record your answers in the spaces provided.
- 4) Use only a **blue** or **black** pen.

All questions are compulsory (20 marks)

You are provided with specimen B which is a plant tissue and solutions X and Y. You are required to carry out tests on B using Hydrogen Peroxide (H_2O_2) and solutions X and Y.

Peel the specimen and from it cut four equal cubes, each measuring 1cm x 1cm x 1cm. Label the 4 test tubes as 1, 2, 3 and 4.

- a) Carry out the following tests written in the table below and record your observations and deductions (conclusions).

Tests	Observations	Deductions (Conclusion)
(i) To test tube 1 add 1cm ³ of distilled water and 2 cm ³ of H_2O_2 . Shake the mixture with a Litmus paper and add one cube of B. (4 marks)		
(ii) To test tube 2, add 1 cm ³ of X and 2 cm ³ of H_2O_2 . Shake the mixture with litmus paper and add one cube of B. (4 marks)		

Tests	Observations	Deductions (Conclusion)
<p>(iii) To test tube 3, add 1 cm³ of Y and 2 cm³ of H₂O₂. Shake the mixture with litmus paper and add one cube of B.</p> <p>(4 marks)</p>		
<p>(iv) To test tube 4 add 3 cm³ of distilled water. Test the water with Litmus paper, then add one cube of B.</p> <p>(1 mark)</p>		

b) What was being investigated in this experiment? **(1 mark)**

c) Explain your results in the test tubes 2, 3 and 4 **(3 marks)**

(i) Test tube 2

(ii) Test tube 3

(iii) Test tube 4

d) Suggest the active ingredient in B and the nature of X and Y. **(3 marks)**

(i) Active ingredient in B

(ii) Nature of X

(iii) Nature of Y

Biology III

013

18/11/ 2016 8.30 am -11.30 am



ADVANCED LEVEL NATIONAL EXAMINATIONS 2016

SUBJECT: BIOLOGY

PAPER III: PRACTICAL BIOLOGY

COMBINATIONS:

- PHYSICS-CHEMISTRY-BIOLOGY (PCB)**
- MATHS-CHEMISTRY-BIOLOGY (MCB)**
- BIOLOGY-CHEMISTRY-GEOGRAPHY (BCG)**

DURATION: 1Hour 30minutes

INSTRUCTIONS:

1. Do not open this question paper until you are told to do so.
2. Write your names and index number on the answer booklet as written on your registration form and **DO NOT** write your names and index number on additional answer sheets of paper if provided.
3. This paper consists of only **three questions** which are compulsory.
4. **All** answers should be written in the spaces provided on the question paper.
5. Use **blue or black** pen.

1) Each candidate should be provided with:

- Potato tuber
- Hydrogen Peroxide
- Test tubes
- Mortar and Pestle
- Scalpel
- Labels

Procedure

- (i) Label two test tubes A and B.
 - (ii) Peel the potato then cut it into small pieces.
 - (iii) Put one piece of potato in test tube A.
- (a) Add 5cm³ of hydrogen peroxide into test tube A and record your observation.
- (b) Crush potato tubes in a mortar and put in test tube B. Add 5cm³ of hydrogen peroxide and record your observation.
- (c) Explain your observations in each case of 1a) and 1b) above.

d) What investigation have you carried out? **(10marks)**

2) You are provided with a test sample which is suspected to be a protein in solid form. Suggest how you can carry out a practical test to confirm that the sample is a protein. **(5marks)**

3) You are provided with Specimen Y which is a plant leaf. Examine the specimen carefully and then:

a) Draw a well labeled diagram of Y. **(8marks)**

b) Name the type of the leaf in 3a) above.

(2marks)

Biology III

013

20/11/ 2015 8.30 am -11.30 am



ADVANCED LEVEL NATIONAL EXAMINATIONS 2015

SUBJECT: BIOLOGY

PAPER III: PRACTICAL BIOLOGY

**COMBINATIONS: PHYSICS-CHEMISTRY-BIOLOGY (PCB)
MATHS-CHEMISTRY-BIOLOGY (MCB)
BIOLOGY-CHEMISTRY-GEOGRAPHY (BCG)**

DURATION: 1 Hour 30 Minutes

INSTRUCTIONS TO CANDIDATES:

1. Do not open this question paper until you are told to do so.
2. This paper consists of **two** questions which are compulsory.
3. **All** answers should be written in the spaces provided on the question paper.

QUESTION 1

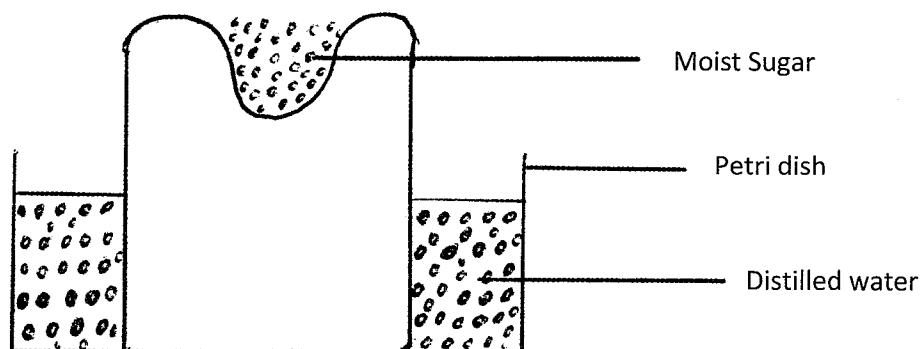
Materials

- Irish potato /Carrot tubers
- Distilled water
- Sugar
- Petri dishes
- Scalpel/knife/cutting blades

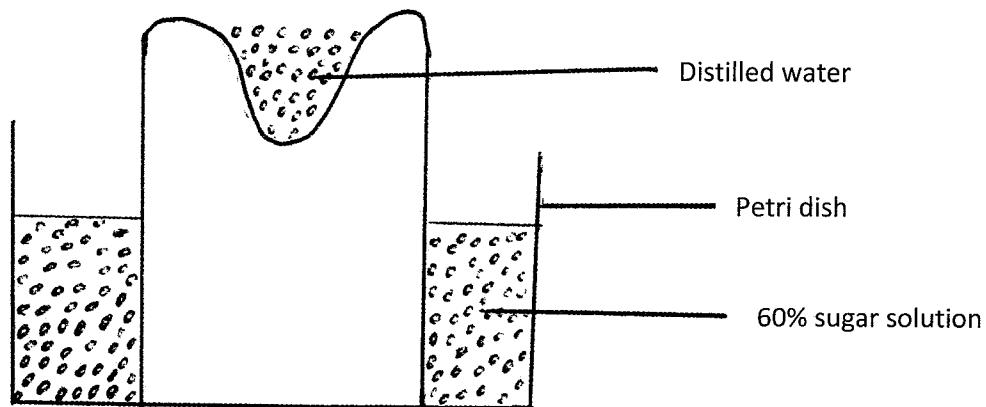
Procedure

- i. Peel three potato/carrot tubers using a scalpel
- ii. Remove some tissues from the tubers to make a cup-like depression. Cut the other end to make a flat surface.

A



B



- iii. Label two petri dishes A and B.
- iv. Half fill Petri dish A with distilled water and place one of the potato blocks. Half fill the depression with moist sugar.
- v. Half fill petri dish B with 60% sugar solution. Place the second potato block and fill the depression with distilled water.
- vi. Leave the set up for one hour. Record your observations:

Set up A

.....

.....

Set up B.....

.....

.....

vii. Which process is being investigated?

.....

.....

viii. What factors affect the process under investigation?

.....

.....

.....

.....

Conclusions:

.....

.....

.....

.....

QUESTION 2

Materials

- Potassium manganate (VII) crystals
- Beaker
- Water
- Glass rod.

Procedure

- Put 100cm³ of water in a beaker.
- Drop few crystals of potassium manganate (VII) using a glass rod at the bottom of the beaker containing water.
 - (i) Observe what happens for 10 minutes
 - (ii) Record your observation;
- (iii) What physiological process is being investigated?

BIOLOGY III

013

07/11/ 2014 8.30 am -11.30 am



ADVANCED LEVEL NATIONAL EXAMINATIONS, 2014

SUBJECT: BIOLOGY

PAPER III: PRACTICAL

COMBINATIONS: PHYSICS-CHEMISTRY-BIOLOGY (PCB)

MATHS-CHEMISTRY-BIOLOGY (MCB)

BIOLOGY-CHEMISTRY-GEOGRAPHY (BCG)

DURATION: 1 Hour 30 Minutes

INSTRUCTIONS TO CANDIDATES :

1. Write your names and index number on the answer booklet as written on your registration form, and **DO NOT** write your names and index number on additional answer sheets of paper if provided.
2. Do not open this question paper until you are told to do so.
3. This paper consists of only **one** number which is compulsory.
4. **All** answers should be written in the spaces provided on the question paper.

YOU ARE PROVIDED WITH SPECIMEN LABELLED P, Q, and R

1. Draw and label the external features of specimen P, Q, and R

a) Specimen P **(10 marks)**

b) Specimen Q **(2 marks)**

c) Specimen R **(2 marks)**

2. Identify specimen Q and R.

Q: a) Phylum..... **(1 mark)**

b) Class..... **(1 mark)**

R: a) Phylum..... **(1 mark)**

b) Class..... **(1 mark)**

3. Give major differences between Q and R. **(2 marks)**

Biology III

013

06/11/ 2013 8.30 am -11.30 am

REPUBLIC OF RWANDA



RWANDA EDUCATION BOARD

ADVANCED LEVEL NATIONAL EXAMINATIONS 2013

SUBJECT: BIOLOGY

PAPER III: PRACTICAL BIOLOGY

**COMBINATIONS: PHYSICS-CHEMISTRY-BIOLOGY (PCB)
MATHS-CHEMISTRY-BIOLOGY (MCB)
BIOLOGY-CHEMISTRY-GEOGRAPHY (BCG)**

DURATION: 1 Hour 30 Minutes

INSTRUCTIONS TO CANDIDATES:

1. Do not open this question paper until you are told to do so.
 2. This paper consists of only **FOUR** numbers which are compulsory.
- (20marks)**
3. **All** answers should be written in the spaces provided on this question paper.

YOU ARE PROVIDED WITH SPECIMEN LABELLED Y.

Using a hand lens, study the specimen carefully and answer the questions that follow.

1. Giving two reasons for each case, state the phylum and class of specimen Y.

a) Phylum..... **(1 mark)**

Reasons:.....
..... **(2 marks)**

b) Class:..... **(1 mark)**

Reasons:.....
..... **(2 marks)**

2. Identify the various features possessed by the specimen which have enabled it to live in the environment.

.....
.....
.....
.....
..... **(6 marks)**

3. Specimen Y is said to be a vector.

a) What is a vector?
..... **(1 mark)**

b) Identify features which have enabled it to be a vector.

.....
.....
..... **(3 marks)**

4. Suggest possible ways you can use to control activities of Specimen Y against man.

(4 marks)

Biology III

013

22 Nov. 2012 8.30 am

REPUBLIC OF RWANDA



RWANDA EDUCATION BOARD (REB)

ADVANCED LEVEL NATIONAL EXAMINATIONS 2012

SUBJECT: BIOLOGY

PAPER III: PRACTICAL BIOLOGY

COMBINATIONS: PHYSICS-CHEMISTRY-BIOLOGY (PCB)

MATHS-CHEMISTRY-BIOLOGY (MCB)

BIOLOGY-CHEMISTRY-GEOGRAPHY (BCG)

DURATION: 1 Hour 30 Minutes

INSTRUCTIONS TO CANDIDATES:

This paper consists of **One** compulsory question.

All answers should be written in the spaces provided.

All drawing should be done in pencil.

You are provided with specimen Y which is fleshly killed.

- a) Examine the specimen carefully and state two external features in each case used to classify the specimen into its Phylum and class.

(I) Features for phylum.

(2 marks)

- (i).....
(ii).....

(II) Features for class

(2 marks)

- (i).....
(ii).....

- b) Carefully remove one hind limb at the point of attachment to the body of the specimen. Using a hand lens, draw and label the limb.

State your magnification

(6 marks)

- c) Describe the possible observable adaptations which have helped the specimen to live successfully in its environment (habitat)

(10 marks)

Biology III

012

10 Nov. 2011 1 8.30am – 16. 30pm

REPUBLIC OF RWANDA



**RWANDA EDUCATION BOARD (REB)
P.O.BOX 3817 KIGALI. TEL/FAX: 586871**

ADVANCED LEVEL NATIONAL EXAMINATIONS

SUBJECT: BIOLOGY

PAPER III: PRACTICAL BIOLOGY

**COMBINATIONS: PHYSICS-CHEMISTRY-BIOLOGY (PCB)
MATHS-CHEMISTRY-BIOLOGY (MCB)
BIOLOGY-CHEMISTRY-GEOGRAPHY (BCG)**

DURATION: 1 Hour 30 Minutes

INSTRUCTIONS TO CANDIDATES:

This paper consists of **One** compulsory question.

All answers should be written in the spaces provided.

All drawing should be done in pencil

1. You are provided with Specimen S.
Examine it and answer the questions that follow.

a) Comment on the symmetry of specimen S. **(2 marks)**

.....
.....
.....

b) Describe the arrangement of stamens on specimen S **(3 marks)**

.....
.....
.....

c) (i) Cut specimen S longitudinally and describe the
Structure of the pistil. **(4 marks)**

.....
.....
.....
.....

(ii) Draw and label a longitudinal section of specimen S **(8 marks)**

d) State with reasons the pollinating agent of specimen S. **(3 marks)**

.....

.....

.....

.....

