

BIOLOGY III

013

22/11/2019 8:30 AM – 10:00 AM



Rwanda Education Board

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)
(iii) To test tube 3, add 1 cm ³ of Y and 2 cm ³ of H ₂ O ₂ . Shake the mixture with litmus paper and add one cube of B. (4 marks)		
(iv) To test tube 4 add 3 cm ³ of distilled water. Test the water with Litmus paper, then add one cube of B. (1 mark)		

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