

Each candidate should be provided with;

A freshly killed toad, labelled **R**

20cm³ of starch solution, labelled **A**

20cm³ of sucrose solution labelled **B**

20cm³ of yeast solutions, labelled **C**

Solutions **A**, **B** and **C** should **NOT** have traces of reducing sugars.

Medium sized Irish potato, labelled **U**

Complete flower of Hibiscus, labelled **A₁**

Complete flower of cassia, labelled **A₂**

Complete flower of Banana, labelled **A₃**

Complete flower of morning glory, labeled **A₄**

Easy access to the following should be ensured

10cm³ measuring cylinder

Microscope

Reagents for food test

250cm³ plastic beaker

Hot water

Thermometer

Hydrogen peroxide

Dissecting board/dish

Dissecting set.

Name:Signature:.....

School.....Index No.....

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**BIOLOGY
PRACTICAL**

Paper 2

July/Aug. 2019

2 hours

BUSHENYI DISTRICT MOCK EXAMINATIONS

Uganda Certificate of Education

BIOLOGY PRACTICAL

Paper 2

2 hours

INSTRUCTIONS TO CANDIDATES:

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

*Answer **all** questions.*

Drawings must be made in the spaces provided.

Use sharp pencils for your drawings.

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

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

For Examiner's Use Only		
Question	Marks	Examiner's signature
1		
2		
3		
Total		

1. You are provided with specimen **N** and solution **H**.

- (a) Carry out the following tests to establish the composition of solution **H**. Record your findings in the table below. (04 marks)

Test	Observation	Deduction
i) To 1cm ³ of solution H in the test tube, add 2 drops of iodine solution.		
ii) To 1cm ³ of solution H in a test tube add 1cm ³ of Benedict's solution and boil.		

- (b) Label 3 test tubes as **D**₁, **E**₁ and **F**₁. Pour 5cm³ of distilled water in test tube **D**₁ and 5cm³ of solution **H** in each of test tubes **E**₁ and **F**₁ respectively.

Using a cork borer, cut out **three** cylinders from specimen **N**, each measuring 3cm long. Put **one** cylinder in each of test tubes **D**₁ and **E**₁. Cut up the third cylinder into **5** small equal pieces, then add them to test tube **F**₁. Leave the set up for **15 minutes**.

Label **three** other test tubes as **D**₂, **E**₂ and **F**₂ and add 4cm³ of distilled water to each of them. After 15 minutes, remove the strip in test tube **D**₁, dip it in distilled water and immediately remove it and transfer it to test tube **D**₂.

Remove the strip in test tube **E**₁ and drop it in distilled water, and immediately remove it and transfer it to test tube **E**₂ and finally remove the pieces of strip in test tube **F**₁ dip them in distilled water and immediately remove them and transfer them to test tube **F**₂. Leave the set up for **15 minutes**.

After, 15 minutes, remove the cylinders from the test tubes leaving the solutions.

Carry out tests in **table 2** on the solutions in test tubes **D₂**, **E₂** and **F₂**.

(08marks)

Table 2

Tests	Observation	Deduction
i) To 1cm ³ of the solution from test tube D₂ add 1cm ³ of Benedict's solution. and boil.		
ii) Repeat test (i) using the solution from test tube E₂ .		
iii) Repeat test (i) using the solution from test tube F₂ .		

(c) Name the biological process investigated in (b).

(01mark)

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(d) Explain the results in tests (ii) and (iii).

Test (ii)

(02marks)

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Test (iii)

(02marks)

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- (e) (i) Explain the purpose of dipping the cylinders of **N** from test tubes **D₁**, **E₁** and **F₁** into distilled water before transferring them to test tubes **D₂**, **E₂** and **F₂** respectively. (01mark)

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- (ii) State the factors that affect the rate of the above mentioned process in (c). (02marks)

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2. You are provided with specimens **A₁**, **A₂**, **A₃** and **A₄** which are plant leaves.

- (a) Give **two** structural characteristics of each of the specimens **A₁**, **A₂** and **A₃**. (03marks)

A₁.....

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A₂.....

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A₃.....
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- (b) State the major plant groups from which specimens A₁ and A₂ were obtained, belong. Give **two** reasons in each case. (04marks)

A₁.....
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A₂.....
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- (c) Observe specimen A₄ and suggest **three** functions it performs on that plant where it was obtained. Give a reason for each function suggested. (06marks)

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- (d) Using observable structural features, construct a dichotomous key to identify the specimens. (03marks)

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- (e) Draw specimen A₄ in the space provided. Do **not** label but state the magnification. (04marks)

3. You are provided with specimens **K** and **L** which were obtained from the same bird.

(a) i) Identify each specimen. (02marks)

K.....

L.....

ii) From which part of the body was each specimen obtained.

(02marks)

K.....

L.....

(b) Give the names of the bones with which each specimen articulates at each of its proximal ends.

i) Bone that articulates with specimen **K**. (01mark)

.....

ii) Bone that articulates with specimen **L**. (01mark)

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(c) Using observable features, suggest the type of joint formed at each proximal end of each specimen.

i) Type of joint at proximal end of specimen **K**. (01mark)

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ii) Type of joint at proximal end of specimen **L**. (01mark)

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(d) i) State **two** functions of the specimens to the animal. (02marks)

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- ii) How are the structures suited for the functions mentioned in (d)(i) above? (02marks)

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- iii) State **three** observable differences between specimen **K** and **L**. (03marks)

Specimen K	Specimen L
(i).....	(i).....
(ii).....	(ii).....
(iii).....	(iii).....

- (e) Draw and label specimen **L**. State the magnification. (06marks)

END