

NAME: INDEX NO.

SIGNATURE.

553/2
Biology
Practical
Paper 2
2 ½ HOURS

RESOURCE FULMOCKS 2019
UGANDA CERTIFICATE OF EDUCATION
BIOLOGY PRACTICAL
PAPER 2
TIME: 2HOURS

Instructions to Candidates;

- *Answer all the three questions in this paper*
- *Use only the spaces provided for all your answers*
- *Don't use coloured pencils or crayons.*
- *Use sharp pencil to draw*
- *Be neat*
- *Carefully follow orders in each question*
- *No additional sheet of paper should be added to answer booklet.*

For examiner's use

question	score	examiner's number or initials
1		
2		
3		
Total		

1. You are provided with 3 tea bags, 3 plastic beakers, thermometer, water, maize flour, and reagents for food test.

PART A

You are required to investigate the effect of temperature on a physiological process using the procedures below.

(a) Label three beakers of same size as **A**, **B**, and **C**.

-Pour 100 cm³ of distilled water at room temperature in beaker **A**,

-Pour 100 cm³ of distilled water at 45°C in beaker **B**.

-Pour 100 cm³ of distilled water at 90 °C in beaker **C**.

-Put a tea bag in each beaker and immediately start timing. (**do not stir or shake**)

-Determine and record in table 1 the temperature in each beaker at the start of timing

-Record observation on the rate of spread of colour-dye in each beaker by indicating whether the rate is slow, fast, or moderate.

-Also record observations on intensity of colour of water after 20 minutes

- Record your results in table 1

Results

Room temperature (½ mark)

Table 1

(4 ½ marks)

Beaker	Temperature at start of timing	Observation	
		Rate of spread	Colour intensity
A			
B			
C			

(b) (i) Name the process being investigated in (a) (01mark)

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(ii) Explain the observed effect of temperature on the process named in (a). (02marks)

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(iii) Suggest what the colour dye could be representing in your body. (01 mark)

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PART B

You are required to investigate another process that occurs in your mouth as you feed on maize flour.

(a) Mix the maize flour provided with 10 cm³ of hot water and shake to mix. Boil gently for 1 minutes and label the mixture as solution X. Carry out the tests in table 2 below on solution X. record your observations and deductions in table 2 below.

Table 2

Test	Observation	Conclusion
(i) To 1 cm ³ of solution X, add 3 drops of iodine solution. 1.5mks		
(ii) To 1cm ³ of solution X, add 1cm ³ of benedict's solution, and boil for 1minute. 2mks		
(iii) To 1 cm ³ of solution X, add 1cm ³ of sodium hydroxide solution,		

¹ Resourceful mock 2019

followed by 2 drops of copper (ii) sulphate. 2mks		
Test	Observation	Conclusion
(iv) Rinse your mouth with clean water and generate about 1cm ³ of saliva in clean test tube. Add 1cm ³ of solution X to the saliva and leave for 20 minutes. Then add 2 cm ³ of Benedict's solution and boil gently for 1 minute. 2.5mks		

(b) (i) Identify the process being investigated in test (a)(iv). (01marks)

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(ii) Explain the effect of saliva on maize flour. (02 marks)

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2. You are provided with specimen **P, Q, R and T**. Examine them, and answer questions that follow.

(a). With reasons, identify specimen **P** and **R** (03 marks)

(i) Identity of **P**

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Reasons

.....

.....

(ii) Identity of **R**

.....

Reasons

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.....

(b) Describe the structure of specimen **Q** and **S**.

(04 marks)

(i) Specimen **Q**

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(ii) Specimen **S**

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(c) (i) State, two similarities between specimen **R** and **S**.

(02 marks)

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(ii) Give two differences between specimen **P** and **Q**.

(02 marks)

specimen P	specimen Q

(d) How is specimen **P** adapted to its functions?

(04 marks)

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(e) Draw and label specimen **P**. **(05 marks)**

3. You are provided with specimen **E**, **F**, **G** and **H** which are plant organs. Cut specimen **F** longitudinally

(a) With reasons, state the identity of specimen **E** and **H**. (03 marks)

(i) Identity of specimen **E**

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Reason

.....

.....

(ii) Identity of specimen **H**

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Reason

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(b) Giving reason, state the plant division to which specimen **F** belongs. (02 marks)

(i) Plant division

.....

(ii) Reason

.....

(c) Describe the structure of specimen **G**. (03 marks)

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(d) Describe the arrangement of flesh leaves of specimen **F**. (02 marks)

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(e) Specimen **E**, **F**, **G** and **H**, perform a common function. Explain how the specimen are able to perform their common function. (03 marks)

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(f) Give two differences between specimen **E** and **H**. (02 marks)

specimen E	specimen H

(g) Draw and label the longitudinal section of specimen **F**. (05 marks)

END