Candidate's Name: .....

School: .....

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Sign: .....

Centre No.					Personal No.		
U							

553/2
BIOLOGY
PRACTICAL
Paper 2
July/August 2022
2 hours

HOIMA DIOCESE EXAMINATIONS BOARD

UCE Mock Examination, 2022

BIOLOGY (PRACTICAL)

Paper 2

2 hours

INSTRUCTIONS TO CANDIDATES:

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

Answer **all** *questions.*

Drawings should be made in 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 this booklet.

For Examiners' Use Only		
QUESTION	**MARKS**	**EXAMINER'S SIGNATURE AND NUMBER**
1.		
2.		
3.		
TOTAL		

1. (a) You provided with solutions **A** and **B**. You will determine the nature of the nutrients they contain. *(11 marks)*

Table 1

	Test	Observation	Deduction
(i)	T0 1 cm^3 of solution **A** in a clean test tube; add 3 drops of iodine solution		
(ii)	To 1 cm^3 of solution **A** in a clean test tube add 1 cm^3 of sodium hydroxide; followed by 2 drops of Copper (II) sulphate.		
(iii)	To 1 cm^3 of solution **B** in a clean test tube; add 3 drops of iodine solution.		
(iv)	To 1 cm^3 of solution **B** in a clean test tube; add 1 cm^3 Benedict's solution and boil.		

(b) Briefly dip the visking tube in water to soften it. Rub between two fingers to open it. Tie one end of the visking tube tightly. Measure 3 cm^3 of solution **A** and 3 cm^3 of solution **B** and pour into the visking tube tie tightly the other end. Wash outer surface of the visking tube. Immerse the visking tube into a boiling tube containing 15 cm^3 of distilled water and wait for 20 minutes. **(Meanwhile do other work)**. After 20 minutes remove the visking tube from the boiling tube and carry out the tests below using the contents of the boiling tube and write the observations in the table 2. *(03 ½ marks)*

Table 2

Test	Observation	Deduction
(i) To 1 cm^3 of the solution in a tube, add 1 cm^3 of sodium hydroxide; followed by 2 drops of Copper (II) sulphate		
(ii) To 1 cm^3 of the solution in a test tube; add 1 cm^3 Benedict's solution and boil		

(c) Explain your observations in (b) (i) and (b) (ii) above. *(03 marks)*

(i) .....

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(ii) .....

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Turn ove

1. (a) You provided with solutions **A** and **B**. You will determine the nature of the nutrients they contain. *(11 marks)*

Table 1

Test	Observation	Deduction
(i) T0 1 cm^3 of solution **A** in a clean test tube; add 3 drops of iodine solution		
(ii) To 1 cm^3 of solution **A** in a clean test tube add 1 cm^3 of sodium hydroxide; followed by 2 drops of Copper (II) sulphate.		
(iii) To 1 cm^3 of solution **B** in a clean test tube; add 3 drops of iodine solution.		
(iv) To 1 cm^3 of solution **B** in a clean test tube; add 1 cm^3 Benedict's solution and boil.		

(b) Briefly dip the visking tube in water to soften it. Rub between two fingers to open it. Tie one end of the visking tube tightly. Measure 3 cm^3 of solution **A** and 3 cm^3 of solution **B** and pour into the visking tube tie tightly the other end. Wash outer surface of the visking tube. Immerse the visking tube into a boiling tube containing 15 cm^3 of distilled water and wait for 20 minutes. **(Meanwhile do other work)**. After 20 minutes remove the visking tube from the boiling tube and carry out the tests below using the contents of the boiling tube and write the observations in the table 2. *(03 ½ marks)*

Table 2

Test	Observation	Deduction
(i) To 1 cm^3 of the solution in a tube, add 1 cm^3 of sodium hydroxide; followed by 2 drops of Copper (II) sulphate		
(ii) To 1 cm^3 of the solution in a test tube; add 1 cm^3 Benedict's solution and boil		

(c) Explain your observations in (b) (i) and (b) (ii) above. (*03 marks*)

(i) .....

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(ii) .....

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Turn over

(d) (i) State the biological process investigated in this experiment.
(0½ mark)

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(ii) State **two** roles of the process in (d) (i) above in animals. *(02 marks)*

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2. You are provided with specimens **T, U, V, W** and **X** which are plant parts. Study them carefully and answer the following questions.

(a) Giving reasons, what plant structure are specimens **T, U, V, W,** and **X**?
(01 mark)

Plant structure

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Reason

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(b) (i) In the table below, state **one** observable modification on each of the following specimens **T, W,** and **V.** suggest the function of the modification observed.
(03 marks)

Specimen	Modification	Function of modification
T		
W		
V		

(ii) State **one** reproductive characteristic possessed by specimen **X.**
(0½ mark)

.....

(c) Cut specimen **U** longitudinally into equal parts. In the table below, state **three** observable structural features of specimens **T, U, V, W** and **X**. *(7 1/2 marks)*

Specimen	Observable features
T	
U	
V	
W	
X	

(i) Using observable structural features; construct a dichotomous key to identify specimen **T, U, V, W** and **X**. *(04 marks)*

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(d) Draw and label the cut surface of one half of specimen **U**. State your magnification. *(05 marks)*

3. You are provided with specimen **R**.

(a) Giving **two** reasons in each case; state the kingdom phylum and class of the specimen. *(06 marks)*

(i) Kingdom

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Reasons

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(ii) Phylum

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Reasons

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(iii) Class

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Reasons

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(b) Give **two** adaptations of the wings and limb to their functions. (*04 marks*)

(i) Adaptations of the wings.

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(ii) Adaptations of hind limbs

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(c) Use a razor blade to cut off one hind limb and one fore limb from the attachment to the body of the specimen. Stretch the limbs and using a thread; measure their length.

(i) Record their length in the space below. (*02 marks*)

Length of fore limb ..... cm

Length of hind limb ..... cm

Turn over

(ii) Work out the ratio of the length of fore limb: length of hind limb. *(01 mark)*

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(iii) What is the importance of this ratio in the life of the specimen? *(02 marks)*

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(d) Cut off the remaining hind limb at the point of attachment to the body. Draw and label, state your magnification. *(05 marks)*

END