

**Each candidate should be provided with**

- ✓ 10cm<sup>3</sup> of solution, labeled **P**(P is made by mixing 1% of starch solution 1% of glucose solution)
- ✓ Femur bone from chicken, labelled **W**
- ✓ Thoracic vertebra bone from a mammal, labelled **X**
- ✓ Lumber vertebra from a mammal labelled **Y**
- ✓ A mature bean pod labelled **L**
  - A raw tomato, labelled **M**
  - A raw mature avocado labelled **N**.
  - 2 pieces of visking tubes
  - 2 pieces of threads
  - Source of heat
  - Reagents for testing food nutrients
  - Knife / razorblade

Do not write the Centre Name or Number anywhere on this paper.

Candidate's Name: .....

Signature: .....

| Random No. |  |  |  |  | Personal No. |  |  |
|------------|--|--|--|--|--------------|--|--|
|            |  |  |  |  |              |  |  |

553/2

**BIOLOGY**  
**(PRACTICAL)**

**Paper 2**

**July / August 2023**

**2 hours**



**SENIOR TEACHERS' EXAMINATIONS COMMITTEE**

**MOCK EXAMINATIONS 2023**

**Uganda Certificate of Education**

**BIOLOGY**

**(PRACTICAL)**

**Paper 2**

**2 hours**

**INSTRUCTIONS TO CANDIDATES:**

*Answer all questions.*

*Answers should be written in the spaces provided.*

*No additional sheets of paper should be inserted.*

*All drawings should be in pencil.*

*Use only blue or black pen.*

| FOR EXAMINER'S USE ONLY |       |                      |
|-------------------------|-------|----------------------|
| Question                | Marks | Examiner's signature |
| No. 1                   |       |                      |
| No. 2                   |       |                      |
| No. 3                   |       |                      |
| TOTAL                   |       |                      |



1. (a) You are provided with solution **P** which contains food nutrients. Carry out the following tests to identify the food nutrients in solution **P**. Record your tests, observation and deduction in the **table 1** below (08 marks)

**Table I**

| S/N   | Tests           | Observation | Deductions |
|-------|-----------------|-------------|------------|
| (i)   | Iodine test     |             |            |
| (ii)  | Benedict's test |             |            |
| (iii) | Burette's test  |             |            |

(b) Obtain 2 pieces of visking tubes each measuring 8cm. using a thread; tightly tie one end of each visking tube. In each visking tube add **5cm<sup>3</sup>** of solution **P**.

- After adding solution **B**, tie the other end of the visking tube tightly to prevent any solution from flowing out.
- Label two beakers **A** and **B**
- Put **40cm<sup>3</sup>** of distilled water in beaker **A** and warm water (**55°C**) into beaker **B**. (**55°C** is the initial temperature of warm water put in beaker **B**).
- Put one visking tube in beaker **A** and another visking tube in beaker **B** at the same time.
- Leave the set up to stand for **10** minutes.
- After **10** minutes, remove the visking tubes.

- vii) Carry out tests on water from beaker A and B separately and record your observations and deductions in the table 2 below. (05 marks)

**Table II**

| S/N  | Tests   | Observations | Deductions |
|------|---|--------------|------------|
| (i)  | To 1cm <sup>3</sup> of water from Beaker A add 1cm <sup>3</sup> of Benedict's solution and boil.  |              |            |
| (ii) | To 1cm <sup>3</sup> of water from Beaker B, add 1cm <sup>3</sup> of Benedict's solution and boil. |              |            |

- (c) (i) Name the substance being lost from visking tube to water in the Beaker. (01 mark)

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- (ii) Suggest the process by which the substance in (c) (i) above moved from visking tube to water. (01 mark)

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- (iii) State two factors being investigated in the experiment in (b) above. (02 marks)

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- (d) Explain your results in table 2 above. (03 marks)

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2. You are provided with specimen **L**, **M** and **N** which are fruits.

(a) With a reason in each case, state the class of fruits to which each specimen belongs. (03 marks)

(i) Class of fruit **L**

.....

Reason

.....

.....

(ii) Class of fruit **M**

.....

Reason

.....

.....

(b) Open specimen **L** along its longitudinal axis and cut specimen **M** transversely observe the arrangement of seeds in both specimens.

(i) Describe the arrangement of seeds in each specimen. (03 marks)

**L**

.....

.....

.....

.....

**M**

.....

.....

.....

.....

(ii) State four structural differences between specimen **L** and **M** (04 marks)

| <b>L</b> | <b>M</b> |
|----------|----------|
| (i)      |          |
| (ii)     |          |
| (iii)    |          |
| (iv)     |          |

**L**

.....

.....

.....

3. You are provided with specimen W, X and Y. Observe the specimens and answer the questions that follow.

a) Identify the specimens and state their location in the body of the organism where they were obtained.

| Specimen | Identity | Location in body |
|----------|----------|------------------|
| W        |          |                  |
| X        |          |                  |
| Y        |          |                  |

(06 marks)

b) State the two bones that specimen W articulates with and the types of joint formed at each articulation.

(04 marks)

| Bones | Joints |
|-------|--------|
| (i)   |        |
| (ii)  |        |

c) State four structural differences between specimen X and Y (04 marks)

| Specimen X | Specimen Y |
|------------|------------|
| (i)        |            |
| (ii)       |            |
| (iii)      |            |
| (iv)       |            |



- d) Draw and label the **anterior** half from the proximal end of specimen W in the space below. State your magnification. *(06 marks)*

**END**