STUDENT'S NAME: ……

SCHOOL NAME: …… INDEX NUMBER ……

553/2
BIOLOGY
(Practical)
Paper 2
July/Aug. 2022
2 hours

AITEL JOINT MOCK EXAMINATIONS

Uganda Certificate of Education

BIOLOGY

(PRACTICAL)

Paper 2

2 hours

INSTRUCTIONS TO CANDIDATES:

This paper consists of **three** *questions. Answer* all *questions,*

Drawing should be made in the spaces provided

Use **sharp pencils** *for your drawings.*

Coloured pencils or crayons should not be used.

***No** additional sheets of writings are to be inserted in this booklet.*

Work on additional sheets will **not** *be marked.*

FOR EXAMINER'S USE ONLY		
Question	**Marks**	**Examiners Signature & No.**
1		
2		
3		
Total		

1. You are provided with specimen **M** and solution **X**.
   (a) Carryout the following tests to establish the food nutrients in **X**

Tests	**Observations**	**Deductions**
(i) To $1cm^3$ of **X** in a test tube, add 2 drops of iodine solution.		
(ii) To $1cm^3$ of **X** in a test tube, add $1cm^3$ of Benedict's solution and boil.		

(b) Label 3 test tubes as **A1, B1** and **C1.** Pour $5cm^3$ of distilled water in test tube **A1,** and $5cm^3$ of solution **X** in each of the test tubes **B1 and C1.**

Using a cork borer, cut out three cylinders from specimen **M,** each measuring 3cm long. put one cylinder in each of the test tubes **A1** and **C1.** Cut up the third cylinder into 5 smaller pieces then add them to test tube **B1.** Leave the set for 15 minutes**.**

Label three other test tubes as **A2, B2** and **C2** and add $4cm^3$ of distilled water to each of them. After 15 minutes, remove the strip in **A1,** dip it in distilled water and immediately remove it and transfer it to test tube **A2.** Remove the strips in **B1,** dip them in distilled water and immediately remove them and transfer them to test tube s **B2**. Remove the strip in **C1,** dip it in distilled water and immediately remove it and transfer it to test tubes **C2.** 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 solution in test tubes **A2, B2** and **C2.**

(07 marks)

Table 2

Tests	**Observations**	**Deduction**
(i) Take $1cm^3$ of the solution from the test tube **A2** and put it into another test tube, add $1cm^3$ of Benedict's solution and boil.		
(ii) Repeat test (i) using the solution in test tube **B2.**		
(iii) Repeat test (i) using the solution in test tube **C2.**		

(c) Name the biological process investigated in (b). (01 mark)

(d) Explain the result in test (ii) and (iii).

Test (ii) (03 marks)

Test (iii) (02 marks)

(e) Explain the purpose of

(i) Cutting up one cylinder of **M** into smaller pieces before adding to test tube **B1.** (02 marks)

(ii) Dipping the pieces of **M** from test tube **A1, B1** and **C1** into distilled water before transferring them to test tubes **A2, B2** and **C2** respectively. (02 marks)

2. Specimen **F** is a flower. Examine the specimen using a hand lens.
   (a) (i) State the mode of pollination of the specimen. (01 mark)

   (ii) Give four reasons to support your answer in (a) (i) (04 marks)

(b) Describe the structure of each of the following parts of the specimen **F** stating their numbers in each case:
   (i) Petals (03 marks)

   (ii) Stamens (03 marks)

(iii) Carpels (03 marks)

(c) Remove all the sepals and petals from specimen **F.** Draw and label the remaining parts of the specimen. (06 marks)

3. You are provided with specimen **X, Y** and **Z** which are from the same animal.

(a) Examine the specimens and state four structural features which are common to all.

(b) Identify the specimens giving two reasons in each (06 marks)

(c) Using observable features, give four functions of the specimens to the animal. (04 marks)

END