Name…….. Stream: .....

553/1 BIOLOGY (Theory)
Paper 1
April 2023
Time: 2 Hours

AITEL EXAMINATION

UGANDA CERTIFICATE OF LOWER SECONDARY CURRICULUM
S. 1 END OF YEAR

BIOLOGY (Theory)

S.1

Paper 1
2 HOURS

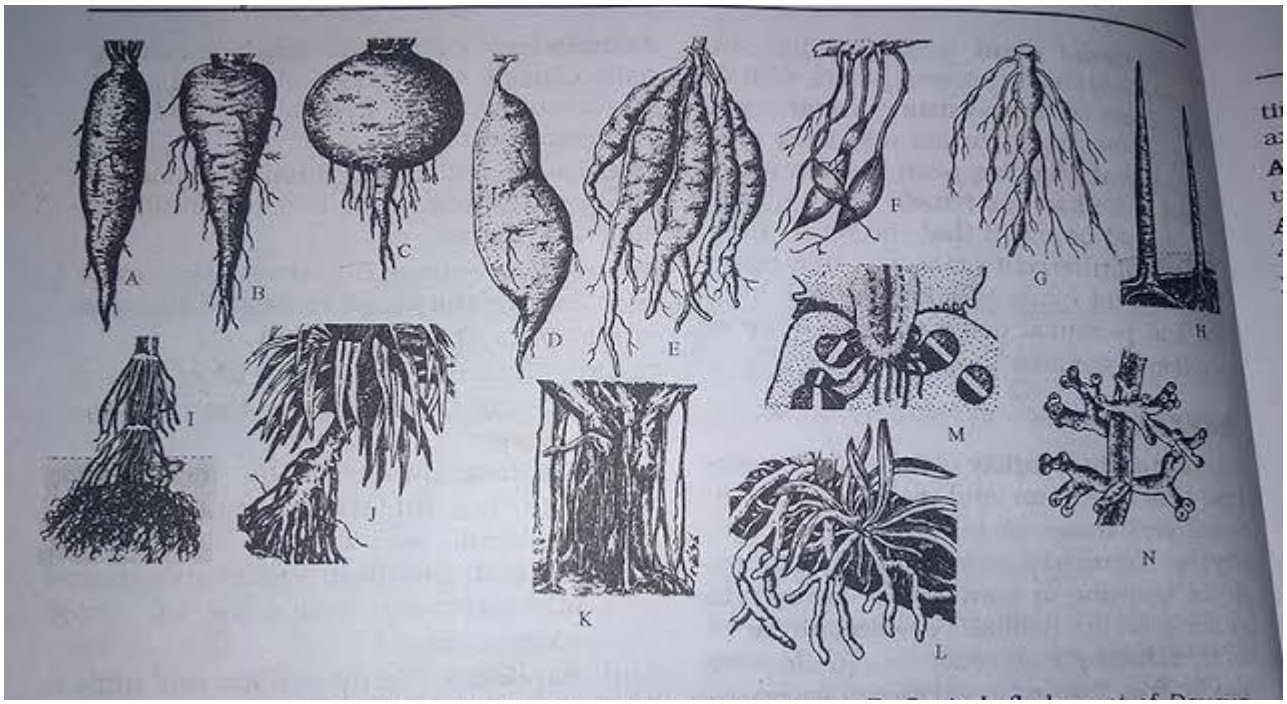
INSTRUCTIONS:
- *This paper consists of three questions.*
- *Answer all questions in the spaces provided.*
- *Illustrations in form of drawings should be made where necessary, with a sharp pencil.*

INSTRUCTIONS.

Attempt **All** questions. Answers to all questions must be written in the spaces provided. Present your work neatly.

For Examiners' Use Only		
Number	**Marks**	**Initials**
1		
2		
3		
4		
Total.		

1. Below are pictures of the different kinds of modified roots taken by senior two students on a study trip in Zika forest.



(a) What do you understand by the term modified root? ***(01 Mark)***

……

……

(b) Identify the root modifications in pictures A, H, I and M, and in each case state the function of the modification. ***(08 Marks)***

A ……

Function……

H……

Function……

I……

Function

……

M……

Function……

b) State two major differences between the root system of monocotyledonous and dicotyledonous plants. ***(02 Marks)***

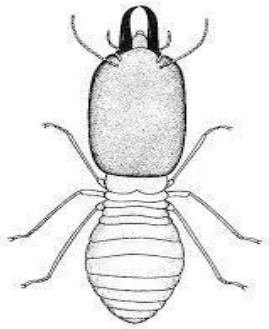
(i)……

……

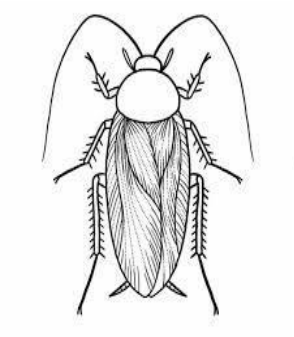
(ii)……

……

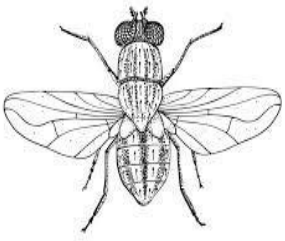
2. The pictures A, B, C and D below are of arthropods. Study them carefully to enable you identify them correctly.



A



B



C

D

(a) Fill in the spaces in the dichotomous key below using the letters that represent the arthropods. ***(03 Marks)***

Dichotomous Key

(a) Specimen with more than 6 legs …….... **D**
(b) Specimen with six legs……. go to 2

(a) Specimen with wings…….go to 3
(b) Specimen without wings……

(a) Specimen with long antennae……..
(b) Specimen with short antennae…….

(b) State **two** ways in which specimen **A** is economically important to man. ***(02 Marks)***
(i)……..

……

(ii)……

……

(c) State two ways of controlling Specimen **C** from our homes. ***(02 Marks)***

(i)……

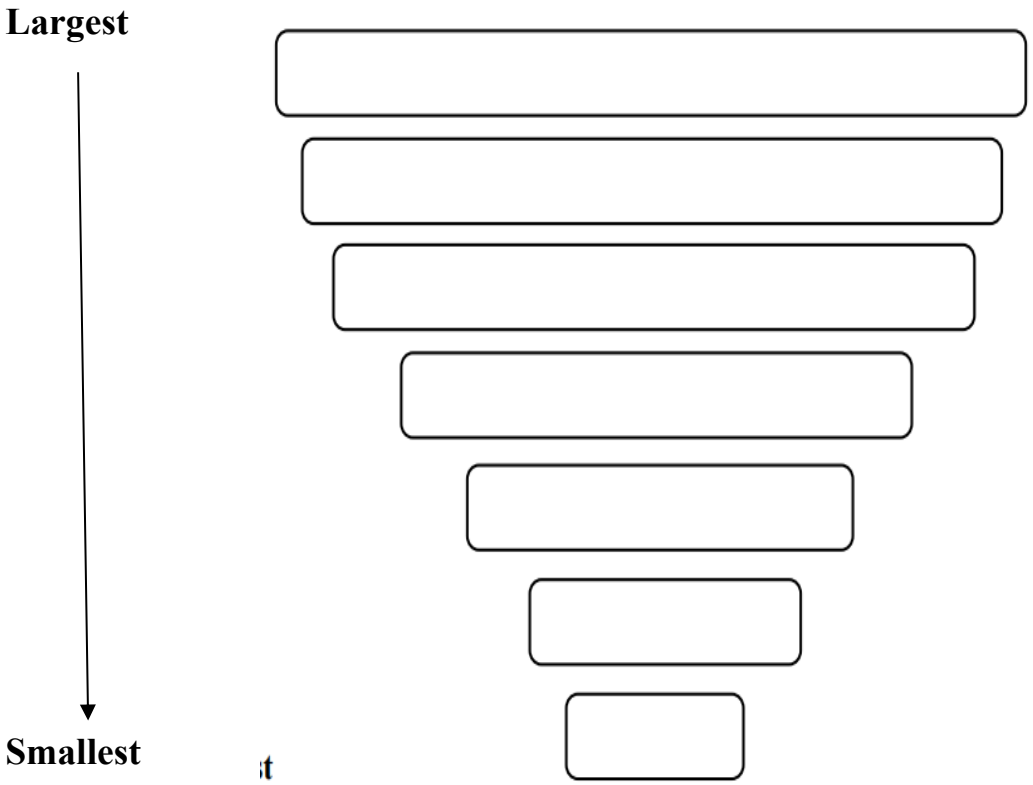
……

(ii)…….

……

3. The Linnaeus classification system below is not in the correct order. Study it carefully and answer the questions that follow;
(Kingdom, Genus, Family, Phylum, Class, Species, Order)

(a) Fill in the spaces below with the classification hierarchy in order of size from largest to smallest in terms of organisms. ***(03 ½ Marks)***



(b) State the scientific name for man. ***(0 1 Mark)***

…….

(c) Complete the sentences below by selecting the correct word from the following list and use it to fill in the blank spaces.
(amphibia, alive, chordata, backbone, dichotomous, aves, characteristiscs, classes, eggs, environment, mammalia, fish, birds). ***(06 ½ Marks)***

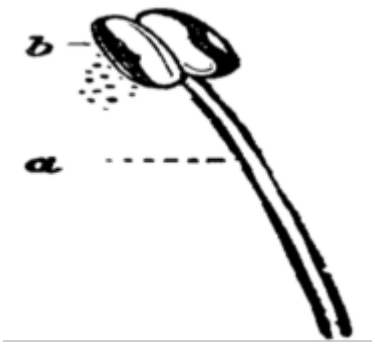
The common characteristic of organisms in phylum …… is that they have a …… The organisms in this phylum are grouped into five ……. namely; Pisces, ……, Reptilia, ……. and Mammalia.

All organisms in these classes lay ……. except for organisms in class …… which produce their young ones ……

The internal body temperature for mammals and …… is constant while the internal body temperature for reptiles, amphibians and ……. changes according to the external …….

A ……key can be used to identify organisms basing on their external observable ……..

4. In flowering plants, the flower possesses parts that occur in concentric layers called **whorls**. These floral whorls are important in the proper functioning of the flower to promote fertilization of the plants. One of the structures in the floral whorls is given in the diagram below. Study it and use it to answer the questions that follow.



(a) (i) Name the floral whorl shown in the figure above. (***01 Mark***)

……

(ii) Label the parts marked **a** and **b** on the structure above **(*01 Mark*)**

Part **a**……...

Part **b**:…….

(b) Differentiate the length of the part labelled **a** of insect pollinated flowers and wind pollinated flowers. How is the difference stated helpful in wind pollinated flowers? (***02 Marks***)

Difference	**Importance of the Difference**

(c) State the main function of the above structure to the flower. (***01 Mark***)

……

……

(d) Write short notes on each of the following,

(i) Fruit (***02 Marks***)

……

……

……

(ii) Seed dispersal (***02 Marks***)

……

……

……

(e) In the space below, draw the longitudinal section of a Bean seed without forgetting the title and magnification given the length of a normal bean seed as 1.5 cm.

(04 Marks)

(f) Fruits can be classified according to whether the pericarp is dry or succulent on maturation. Write the type of fruit each diagram represents including short notes on their respective special features in the table below. ***(08 Mark)***

Fruit diagram	Type of fruit	Short notes
 Tridax		
 Dutchman's pipe		
 Mango fruit		
 Desmodium		

END

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