

Name: Index No.....

School: Signature:

553/2
BIOLOGY
(PRACTICAL)
PAPER 2
2 hours

WAKISSHA

Uganda Certificate of Education

BIOLOGY

(PRACTICAL)

Paper 2

2 hours

INSTRUCTIONS TO CANDIDATES:

- This paper consists of **three** questions.
- Answer **all** questions.
- All answers should be written in the spaces provided.
- Drawings 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 writing paper are to be inserted in the booklet.
- Work on additional sheets will **not** be marked.

FOR EXAMINER'S USE ONLY.

Question	Marks	Examiner's No. & Initials
1		
2		
3		
TOTAL		

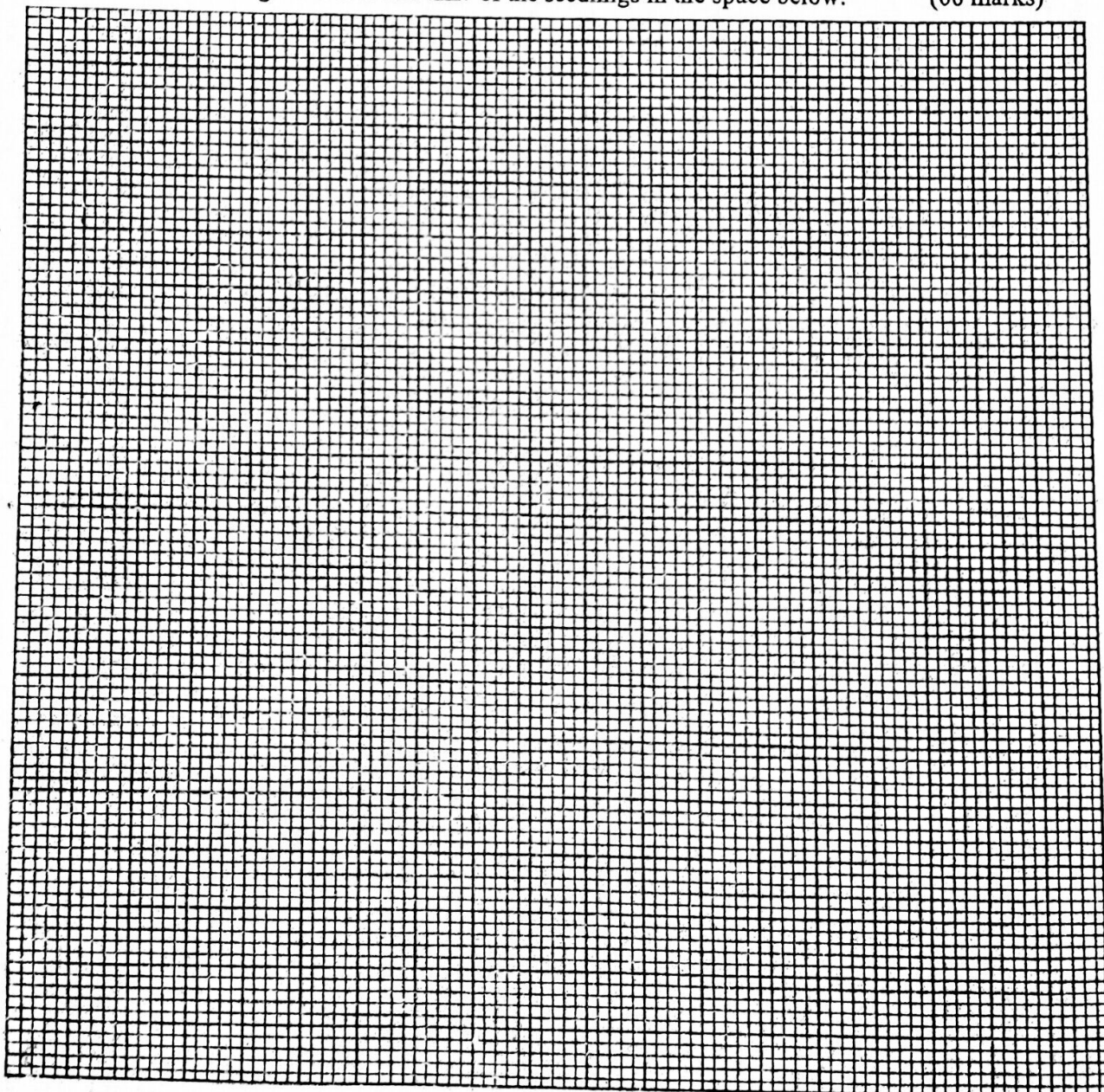
1. You are provided with maize seedlings which are one day old labeled B₁, 4 day old labeled B₂, 6 day old labeled B₃ and 7 day old labeled B₄.

- (a) (i) Take one seed from B₁ and measure the length of main root. Record your results in table 1 below.
 (ii) Do the same in a (i) for seedlings B₂, B₃ and B₄.
 (iii) Calculate growth rate values of each seedling and record your results still in table 1 below. (06 marks)

Table 1

Seedlings	B ₁	B ₂	B ₃	B ₄
Length of main root (cm)				
Growth rate of root /cm/day				

- (b) (i) Using your results in table 1 above, plot a graph showing the variation of growth rate and time of the seedlings in the space below. (06 marks)



(ii) Describe the shape of the graph in (i) above.

(03 marks)

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(iii) Explain the shape of the graph you have plotted in b(i) above.

(05 marks)

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2. You are provided with specimens L and M which are animal parts.

(a) Giving two reasons in each case, identify the specimens.

(i) Specimen L (01mark)

Reasons:(01mark)

(ii) Specimen M (01mark)

Reasons:(01mark)

(b) State three structured differences between specimen L and specimen M. (03marks)

Specimen L	Specimen M

(c) Explain how each specimen is adapted to its function.

(i) Specimen L

(02 marks)

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(ii) Specimen M

(02 marks)

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(d) State two functions of the mammalian skeleton which are shown by the structure of the Specimens. (02 marks)

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(e) Draw the interior view of Specimen L in the space below.
State your magnification.

(07 marks)



3. You are provided with specimens S and T which are plant organs.

(a) What plant organs are the specimens?

Give two reasons for your answer.

(i) Plant organ (01 mark)

Reasons:

(01 mark)

(b) Examine the calyx of specimen S and describe their structural features. (03 marks)

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(c) Giving an observable feature, suggest the mode of pollination of specimen S.

Mode of pollination: (01 mark)

Feature:

.....

(01 mark)

(d) Remove all the petals, sepals and stamens from specimen S.

(i) State the type of Ovary possessed by the specimen. Give one reason for your answer.

Type of ovary: (01 mark)

Reason:

.....

(01 mark)

(e) Give four observable differences between the structures of specimen S and specimen T. (04 marks)

Specimen S	Specimen T

- (f) Remove the petals and sepals from specimen T. Draw and label the remaining part of the specimen. State the magnification of your drawing. (07 marks)

END

Each candidate should be provided with the following;

- Flower of Sodom apple / Solarium incahum
(Entengotengo /Etule/Orugusum / Ocokocok) labeled S.
- Flower of Crotalaria species labeled T.
- Cervical vertebra labelled L
- Lumbar vertebra labelled M
Note (L and M should be from same animal)
- One day old maize seedling labeled B₁.
- 4 day old maize seedling labeled B₂.
- 6 day old maize seedling labeled B₃.
- 7 day old maize seedling labeled B₄.

N.B: These should be presented to candidate with roots intact.

- Thread about 30cm long.

END