Name: ..... Index No.....

School: ..... Signature: .....

553/2
BIOLOGY
(PRACTICAL)
PAPER 2
July/August 2019
2 hours

WAKISSHA 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.
- 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		

Turn Over

1. You are provided with fresh plant specimen S, and liquids marked A and B. You are to investigate effects of the liquids on plant feature. Mark petri-dishes A and B. Obtain $20cm^3$ from liquid marked A and pour it in petridish A. Get the same volume from liquid marked B and pour it in Petridish B.

(a) Measure 3.0cm long of specimen S. Cut it longitudinally into four equal strips. Put one strip into petridish marked A, and the other in Petridish marked B at the same time.

(b) Leave the set up to stand undisturbed for 20 minutes.

(c) After 20 minutes, gently press each strip between your fingers and after feeling the texture, fill in the table below. (02 marks)

(i)

	Strip from petri dish A	Strip from petri dish B
Texture		

(ii) Explain the nature of the textures in the strip from petri dish;

A (03 marks)

.....

.....

B (03 marks)

.....

.....

(d) Describe the appearance of the strips in;

(i) Petri dish A (01 mark)

.....

.....

(ii) Petri dish B (01 mark)

.....

.....

(e) Explain the appearance of strip S in petri dish A (03 marks)

.....

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(f) Compare the concentration of liquid A and B with the concentration of contents of cells in the strips. (02 marks)

.....

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(g) Name the process which may have caused the changes in (d) above. (01 mark)

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(h) Suggest the importance of the process to herbaceous plants. (04 marks)

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2. You are provided with specimen G and specimen H which are plants obtained from different environments.

(a) Examine the plants carefully and suggest the habitats from which they were obtained. Give **two** reasons in each case. (03 marks)

(i) Specimen G

Habitat: .....

Reasons: .....

.....

(ii) Specimen H (03 marks)

Habitat: .....

Reasons: .....

.....

b) Describe how specimen H is adapted to the habitat where it was obtained. (04 marks)

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.....

(c) State **four** differences between specimen G and specimen H. (04 marks)

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(d) Carefully remove one leaf from specimen H. Draw and label. (State your magnification). (06 marks)

3. You are provided with specimen Q. Use it to answer the questions that follow.

(a) Giving **two** reasons, state the class to which specimen Q belongs. (01 mark)

Class:

.....

Reasons: (02 marks)

.....

.....

(b) Examine the skin and body shape of specimen Q. Explain how the skin and body shape are suited for their functions. (03 marks)

(i) Skin

.....

.....

.....

(ii) Body shape. (01 mark)

.....

.....

(c) Carefully examine the dorsal fin and ventral fin of specimen Q. State their locations.

(i) Location of dorsal fin. (01 mark)

.....

(ii) Location of ventral fin. (01 mark)

.....

(d) Open the operculum on one side of specimen Q. Examine the features covered by the operculum. Using a knife/ scalpel remove one gill arch bearing filaments. Using a hand lens, observe the gill.

(i) Describe how the features of the gill are adapted for their function. (04 marks)

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(ii) Draw and label the gill. State your magnification. (07 marks)

END

Each candidate should be provided with the following;

- $30cm^3$ of Distilled water labeled **A**
- $30cm^3$ of 0.3M sucrose solution labeled **B**
- **Two** petri dishes.
- Razor blade / Scapel blade.
- Ruler.
- $50cm^3$ measuring cylinder.
- Labels.
- Bryophyllum sp plant labeled **G**
- Water lettuce plant (Kitengejja) labeled **H**

N.B: **G** and **H** must be freshly uprooted.

- One **small size** fresh tilapia fish, labelled **Q** (can be shared)
- Young fresh paw paw leaf stalk labeled **S.**

END