553/2
S.4 Biology
PRACTICAL
2 Hours

NAME…… **STREAM……**

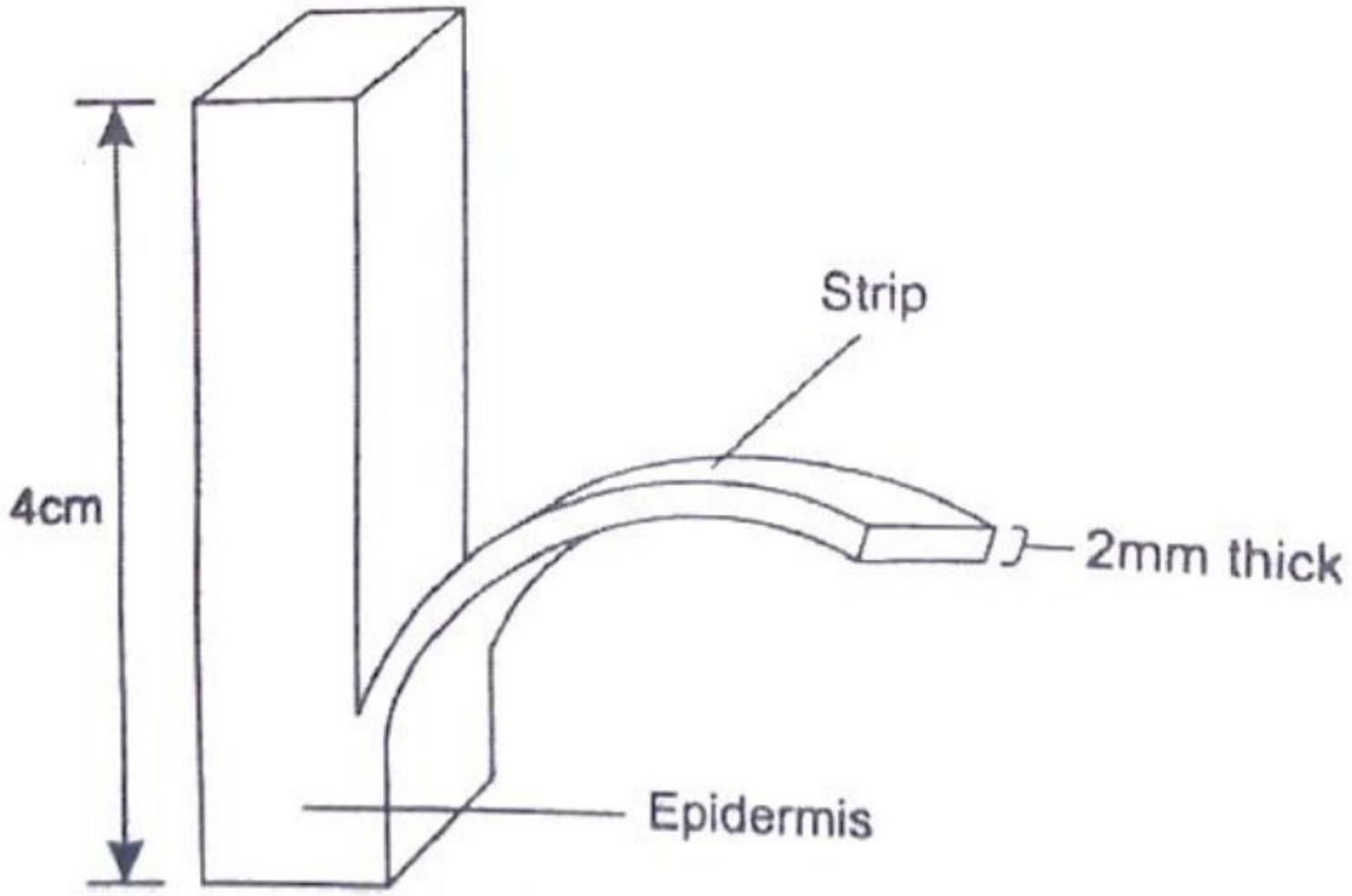
INDEX NUMBER:……..

PRE-MOCK III EXAMINATIONS 2023
Biology practical
PAPER 2
TIME: 2 HOURS

INSTRUCTIONS:
Attempt all questions.
Answers must be written in the spaces provided only

FOR EXAMINER'S USE ONLY		
Question	**Marks**	**Examiners Signature**
1		
2		
3		
TOTAL		

1. You are provided with solutions A, B, C and a piece of plant stem. T. You are to carry out test on T, using the solutions, by following the instructions below. Label **three** Petri dishes A, B and C and fill each of them with corresponding solution. Measure and cut off a piece 4cm long from T. Using a razor blade, evenly peel off 3 strips, each about 2mmThick, along the length of the cut piece (see below). Ensure that each strip has the epidermis.



(a) Put one strip in each of the solutions in the Petri dishes and leave for 20 minutes. After 20 minutes, remove the strip from the solution and Measure the distance between the ends of each strip and record your results in the table provided below. Draw the structure of each strip in the space provided in the table. Label the epidermis.

(6 marks)

	Strips after 20 minutes in solution		
	A	**B**	**C**
Distance between the ends (cm)			
Drawing			

(b) Explain the effect of solutions A, B and C on the strips.

(i) Solution A (3 marks)

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(ii) Solution B (3 marks)

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(iii) Solution C (3 marks)

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(c) Which of the solutions A, B and C has concentration which is almost equal to that of the strips? Give a reason for your answer. (2 marks)

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(d) Name the process being investigated in the experiment and state two importance of the process to plants. (3 marks)

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2. You are provided with specimens **P, Q, R** and **S** which are leaves.

(a) Give two observable features which show that the specimens **P, Q, R** and **S** are leaves. (02 marks)

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(b) Specimens **P** and **Q** perform other special functions in addition to their usual functions.

(i) Describe how each of the specimens **P** and **Q** are adapted to their special functions. (03 marks)

Specimen **P**

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Specimen **Q**

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(ii) Basing on observable features, state one function carried out by all specimens **P, Q, R** and **S**. (02 marks)

Function.

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Observable feature.

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(c) Describe specimen **S**. (03 marks)

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(d) Using characteristic features of the lamina only, construct a dichotomous key to identify specimens **P, Q, R** and **S**. (03 marks)

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(e) Draw and label specimen P. state your magnification. (07 marks).

3. You are provided with specimens **F, G** and **H**.

(a) Examine the specimens and give three reasons, for identification of the phylum to which they belong.

Phylum; (01 mark)

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Reasons (03 marks)

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(b) Observe the mouth parts of specimen **F, G** and **H**. Explain two ways in which each is adapted to its function.

(i) Mouth parts of **F** (2 marks)

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(ii) Mouth parts of **G** (2 marks)

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(iii) Mouth parts of **H** (2 marks)

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(c) Observe the thorax of F and G. Give four differences between **F** and **G**.

(04 marks)

Specimen F	**Specimen G**

(d) Draw and label lateral view of head of specimen F, and state your magnification. (6 marks)

END

S.4 PRE-MOCK3 BIOLOGY PRACTICAL 553/2 INSTRUCTIONS

Each candidate should be provided with the following:

No.1

0.3M sucrose solution, labelled A.

0.5M sucrose solution, labelled B.

Distilled water, labelled A.

Young black jack stem, labelled T.

3 petri dishes

10 ml measuring cylinder.

A stop clock.

Labels.

A razor blade.

No.2

Bryophyllum leaf, labelled P.

Bean leaf, labelled Q.

Lantana camara leaf, labelled R.

Desmodium leaf, labelled S.

No.3

Mature cockroach, labelled F.

Mature housefly, labelled G.

Mature worker bee, labelled H.