

Centre Number	Candidate Number									

Candidate Name _____

EXAMINATIONS COUNCIL OF ZAMBIA

Joint Examination for the School Certificate
and General Certificate of Education Ordinary Level

BIOLOGY

5090/3

PAPER 3 Practical Test

Monday

17 OCTOBER 2011

1 hour 15 minutes

Additional materials:
As listed in instructions to Supervisors.

TIME: 1 hour 15 minutes

INSTRUCTIONS TO CANDIDATES

Write your name, centre number and candidate number in the spaces provided at the top of this page.

There are **two** questions in this paper.

Answer **both** questions.

Write your answers in the spaces provided on the question paper.

Use sharp **HB** pencils for your drawings. Coloured pencils and crayons should **not** be used.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets [] at the end of each question or part question.

Cell phones are not allowed in the examination room.

FOR EXAMINER'S USE	
1	
2	
Total	

Answer **all** the questions.

- 1 You are provided with solutions **A** and **B**. You are also provided with solution **Q** which was extracted from the digestive system of a bird. Add 3 drops of solution **Q** to 1 cm³ of solution **A** and solution **B**, respectively. Shake gently.

(a) (i) Record your observations.

Solution **A**: [1]

Solution **B**: [1]

(ii) Record the conclusion from your observation.

Solution **A**: [1]

Solution **B**: [1]

(iii) State the organ in the digestive system where the process observed in (a) (i) above takes place.

..... [1]

(iv) Explain why solution **B** was used in the experiment.

..... [1]

(v) Identify solution **Q**

..... [1]

(vi) State the significance of solution **Q** in the digestive system of an animal.

..... [1]

- (b) State the class, phylum and kingdom of specimens **W24** and **W25**. Provide reasons for the classification. Use the table provided below for your answers.

Specimen Classification	W24	W25	Reasons
Class			W24:
			W25:
Phylum			W24:
			W25:
Kingdom			W24:
			W25:

[12]

[Total 20]

- 2 You are provided with specimen **W30** and **W31**. Make a transverse section of **W30** and **W31** using a new surgical blade or razor blade. Stain both transverse sections with iodine solution. Examine the stained sections under a magnifying glass.

(a) (i) State **two** observable structural similarities in specimens **W30** and **W31**.

.....
 [2]

(ii) State **three** visible structural differences between **W30** and **W31** by completing the table below.

Specimen. No.	W30	W31
1		
2		
3		

[3]

(iii) To which class of plants does **W30** and **W31** belong?

1. **W30** [1]

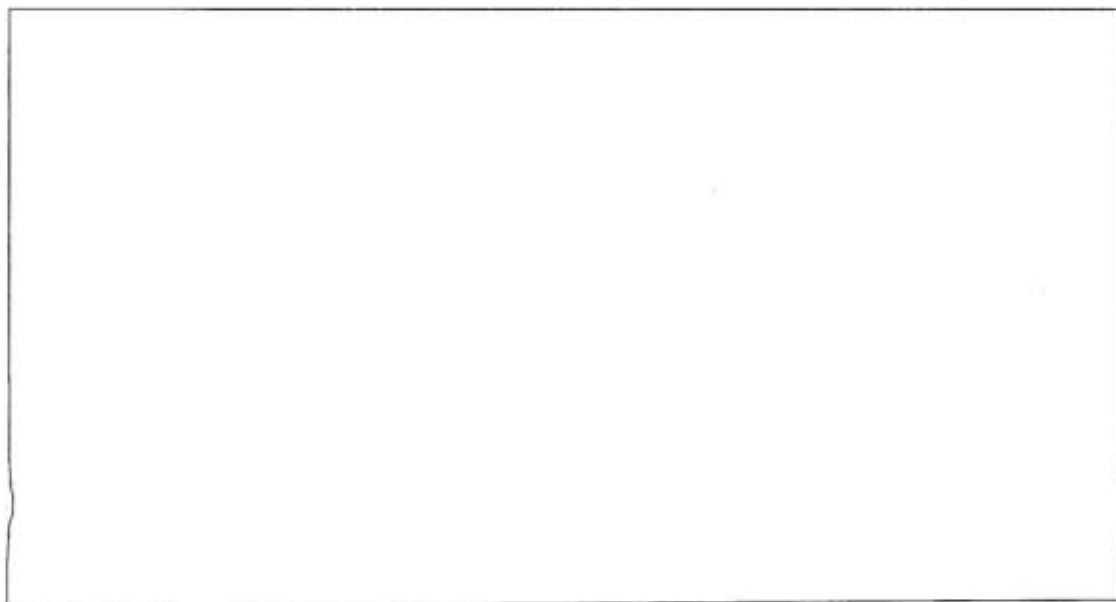
2. **W31** [1]

(iv) State the type of root system found in each of the specimens **W30** and **W31**.

1. **W30** [1]

2. **W31** [1]

- (b) (i) Make a large labelled drawing of the transverse section of **W30** in the space provided below.



[7]

- (ii) Using a ruler, measure specimen **W30**.

Measurement of **W30** [1]

- (iii) Calculate the magnification of your drawing (show your working)

Calculation:

Magnification = [3]

[Total 20]

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