

Candidate Name _____

Centre Number	Candidate Number									

EXAMINATIONS COUNCIL OF ZAMBIA

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

BIOLOGY

PAPER 3 Practical Test

5090/3

Wednesday

27 OCTOBER 2004

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 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 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.

FOR EXAMINER'S USE	
1	
2	
Total	

Answer all the questions.

- 1 You are provided with specimen **W31**. Using a scalpel or new razor blade, cut specimen **W31** into small pieces. Put the cut pieces into test tube **T₁**. Add 5cm³ of distilled water and shake the test tube.

Allow the solid particles to settle down.

Pour equal volumes of the clear liquid from test tube **T₁** into test tubes labelled **T₂** and **T₃**.

(NB: Leave the solid particles in **T₁**)

- (a) Take the liquid in the test tube labelled **T₂** and carry out the test for reducing sugar.
- (i) In the test method column of the table, describe how you will carry out the test for reducing sugar.
 - (ii) Complete the observation and conclusion columns of the table.

Table 1: Reducing sugar test

Test Method	Observation	Conclusion

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[5]

- (b) Take the test tube labelled **T₃** and carry out the test for non-reducing sugar.
- (i) In the test method column of the table, describe how you will carry out the test for non-reducing sugar.
 - (ii) Complete the observation and conclusion columns of the table.

Table 2: Non-reducing sugar test

Test Method	Observation	Conclusion

[7]

- (c)** What was the purpose of adding the following to the test liquids?

- (i) dilute hydrochloric acid

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- (ii) dilute sodium hydroxide solution.

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- (d) (i) In what form does **W31** store the carbohydrate that has tested positive?

.....26%.....27%.....28%.....29%.....30%.....31%.....32%.....33%.....34%.....35%.....36%.....37%.....38%.....39%.....40%.....41%.....42%.....43%.....44%.....45%.....46%.....47%.....48%.....49%.....50%.....51%.....52%.....53%.....54%.....55%.....56%.....57%.....58%.....59%.....60%.....61%.....62%.....63%.....64%.....65%.....66%.....67%.....68%.....69%.....70%.....71%.....72%.....73%.....74%.....75%.....76%.....77%.....78%.....79%.....80%.....81%.....82%.....83%.....84%.....85%.....86%.....87%.....88%.....89%.....90%.....91%.....92%.....93%.....94%.....95%.....96%.....97%.....98%.....99%.....100%

- (ii) Give a reason why this carbohydrate is stored in the form mentioned above.

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- (iii) Name the storage organ **W31**.

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- (e) In what form are carbohydrates transported in plants?

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[Total: 20]

[Turn over

2 Specimen **W32** and **W33** are parts of an animal.

(a) (i) Name specimen **W32**..... [1]

(ii) Using a hand lens, examine specimen **W32**.

Make a large, labelled drawing of the external parts of specimen **W32** showing clearly as many structures as possible.

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(iii) Measure the length of specimen **W32**.....

Measure the length of the drawing..... [1]

(NB: Draw a line along the length measured.)

(iv) Calculate the magnification of your drawing.

Calculation:

[2]

Magnification:..... [1]

(b) (i) On the diagram, indicate the type of joints found at each end of specimen **W32**.
[1]

(ii) Give **two** examples of where each of these types of joints are found in a human body.

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[4]

(c) Using a hand lens, examine the external parts of specimen **W33** carefully.

State five structural differences between specimen **W32** and **W33**.

Specimen W32	Specimen W33

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[5]

[Total: 20]