

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

Friday

19 OCTOBER 2012

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 solution **S1** which contains a nutrient. Divide solution **S1** equally into two test tubes labelled **T₁** and **T₂**. Also provided is a solution labelled **J**.

- (a) (i) Test Solution **T₁** for starch.

SOLUTION	TEST METHOD	OBSERVATION	CONCLUSION
T₁			

[5]

- (ii) Test a drop of juice from specimen **J** for starch.

SOLUTION	TEST METHOD	OBSERVATION	CONCLUSION
J			

[2]

- (iii) Test solution **T₂** for reducing sugar.

SOLUTION	TEST METHOD	OBSERVATION	CONCLUSION
T₂			

[5]

- (b) Test juice from specimen **J** for reducing sugar. Construct a table in which your test method, observations and results will be recorded.

[8]

[Total 20]

2 Make thin transverse sections of the petiole of **P2**. Add a drop of Iodine solution on one side of the transverse section laid out on blotting paper. Allow the treatment to stand for a few seconds.

(a) (i) What happens to the transverse section after adding iodine solution?

.....
.....

[1]

(ii) Make a large labelled drawing of the stained transverse section.

[6]

(iii) What conclusion can be made about the observed results after adding iodine solution?

.....
.....
.....

[1]

(b) (i) Measure the diameter of the stained transverse section of **P2**.

Measurement: [1]

(ii) Measure the diameter of the drawing of the transverse section of specimen **P2** made in (a) (i) above:

Measurement: [1]

(iii) Calculate the magnification of the drawing and show your working.

[3]

(c) Cut a minimum of three transverse sections of the petiole of **P2**. Suspend sections in 2cm³ Benedicts solution in a test-tube. Test the sections for reducing sugar.

(i) Record the method, observation and conclusion in the table below.

SPECIMEN	TEST METHOD	OBSERVATION	CONCLUSION

[7]

[Total 20]