

Candidate Name \_\_\_\_\_

| Centre Number | Candidate Number |
|---------------|------------------|
|               |                  |

## 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

[www.eczpastpapers.com](http://www.eczpastpapers.com)

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 **T<sub>1</sub>** and **T<sub>2</sub>**. Also provided is a solution labelled **J**.

(a) (i) Test Solution **T<sub>1</sub>** for starch.

| SOLUTION             | TEST METHOD | OBSERVATION | CONCLUSION |
|----------------------|-------------|-------------|------------|
| <b>T<sub>1</sub></b> |             |             |            |

[5]

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

| SOLUTION | TEST METHOD | OBSERVATION | CONCLUSION |
|----------|-------------|-------------|------------|
| <b>J</b> |             |             |            |

[2]

(iii) Test solution **T<sub>2</sub>** for reducing sugar.

| SOLUTION             | TEST METHOD | OBSERVATION | CONCLUSION |
|----------------------|-------------|-------------|------------|
| <b>T<sub>2</sub></b> |             |             |            |

[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.

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[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 2cm<sup>3</sup> 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]