

**NAMIBIA SENIOR SECONDARY CERTIFICATE**

**BIOLOGY HIGHER LEVEL**

**8321/3**

PAPER 3 Practical Test

**2017**

**INSTRUCTIONS TO SUBJECT TEACHERS**

**(For preparation of laboratories)**

**HIGHER LEVEL**

This document consists of **3** printed pages and **1** blank page.



**Republic of Namibia**

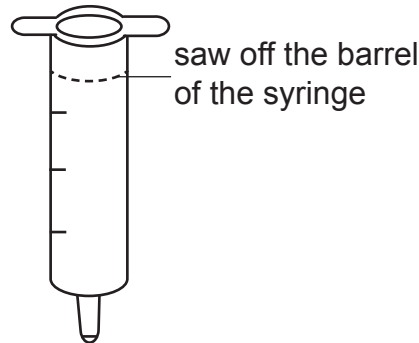
**MINISTRY OF EDUCATION, ARTS AND CULTURE**

### To be bought fresh shortly before the examination:

- Each potato and onion will supply 2 learners with practical material.
- baby potato
- small onion (the type used to make pickled onions). Normal onions will, however, do as well.

### Preparation of apparatus

- Sawn off one 5 ml syringe per learner at the 4 ml mark. This can be done quite well with a serrated knife. **Keep the top part.**



- Starch solution (**S**) – prepare fresh the day before the examination. Dissolve 5 g soluble starch in about 4 cm<sup>3</sup> cold water. Pour into 500 cm<sup>3</sup> of boiling water and stir well. **Boil** the solution for 15 minutes. Ensure it is covered during boiling to prevent excessive evaporation. Each learner will require 12 cm<sup>3</sup> of starch solution.
- Glucose solution (**T**) - dissolve 20 g of glucose powder in 100 cm<sup>3</sup> of water. Each learner requires 12 cm<sup>3</sup> of glucose solution.
- Cut Visking tubing into 15 cm long pieces. Place tubing for each learner in a 50 cm<sup>3</sup> beaker. Label the beaker “Visking tubing” and on the day of the examination cover the tubing with water.
- On the day of the practical each learner will need to be supplied with **half** a baby potato as well as **half** a small onion (those used for making pickled onions). Cut both the potato and onion in half longitudinally. Consequently each potato and onion will supply 2 learners with practical material.

Each learner needs to be supplied with the following apparatus:

### Apparatus used in Question 1 and 2

- 1 x test-tube rack – 8 hole
- 1 x 250 cm<sup>3</sup> beaker - labelled “**water bath**”
- 1 x 100 cm<sup>3</sup> beaker filled with 80 cm<sup>3</sup> tap water and labelled “**water**”
- 10 cm<sup>3</sup> Benedict's reagent in 50 cm<sup>3</sup> beaker, labelled “**Benedict's reagent**”
- 1 x white tile
- 1 x marker pen
- 1 x stopwatch/means of keeping time
- 1 x tripod stand
- 1 x petri dish
- 1 x wire gauze
- 1 x thermometer
- 1 x bunsen burner/spirit burner
- 1 x test-tube holder (peg type)
- 1 x matches
- 2 pieces of paper towel

### Question 1

- 15 cm Visking tubing in 50 cm<sup>3</sup> beaker - labelled “**Visking tubing**”
- 1 x 5 ml sawn off syringe barrel (top part)
- 1 x elastic band
- 1 x boiling tube - 25 mm - labelled “**Model gut**”
- 4 x boiling tubes - 20 mm
- 1 cm<sup>3</sup> Iodine solution in dropper bottle - labelled “**Iodine solution**”
- 12 cm<sup>3</sup> starch solution in 50 cm<sup>3</sup> beaker - labelled (**S**)
- 12 cm<sup>3</sup> glucose solution in 50 cm<sup>3</sup> beaker - labelled (**T**)
- 1 x 500 cm<sup>3</sup> plastic container filled with 400 cm<sup>3</sup> tap water - labelled “**for washing**”
- 6 x 5 cm<sup>3</sup> syringe
- 4 x 3 cm<sup>3</sup> pipette dropper (plastic)

### Question 2

- 2 x boiling tubes - 20 mm
- 2 x 5 cm<sup>3</sup> syringe
- 1 x scalpel
- 1 x ½ baby potato placed in petri dish
- 1 x ½ small onion placed in petri dish

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