

**NAMIBIA SENIOR SECONDARY CERTIFICATE**

**BIOLOGY HIGHER LEVEL**

**8321/3**

PAPER 3 Practical Test

**2019**

**INSTRUCTIONS TO SUBJECT TEACHERS**

**(For preparation of laboratories)**

**HIGHER LEVEL**

This document consists of **2** printed pages.



**Republic of Namibia**  
**MINISTRY OF EDUCATION, ARTS AND CULTURE**

**Materials needed per learner:**

20 cm<sup>3</sup> of long life fat free/non-fat milk

6 kidney beans (white) – one 500 g packet is enough for about 60 learners.

1 tea spoon of brown lentils - one 500 g packet is enough for about 60 learners.

**Please ensure that materials are obtained in good time.**

**Question 1:**

5x 5 cm<sup>3</sup> syringes

1x stopwatch

4x test-tubes

1x test-tube rack (6 hole)

1x thermometer

1x tripod stand

1x wire gauze

1x spirit/Bunsen burner

1x matches

1x stirring rod

1x permanent marker

1 x 400 cm<sup>3</sup> glass beaker filled with 200 cm<sup>3</sup> tap water and labelled “water bath”

1 x 400 cm<sup>3</sup> glass beaker filled with 300 cm<sup>3</sup> tap water labelled “for washing”

1x 50 cm<sup>3</sup> glass beaker containing 1 g dried yeast labelled “**yeast**”

1x 50 cm<sup>3</sup> glass beaker filled with 40 cm<sup>3</sup> tap water labelled “**tap water**”

1x 50 cm<sup>3</sup> beaker labelled “**solution X**” and filled with 15 cm<sup>3</sup> of solution X consisting of 100% pure fat free/non fat milk.

1x 50 cm<sup>3</sup> beaker labelled “**solution Y**” and filled with 10 cm<sup>3</sup> of solution Y made up of 2.5 cm<sup>3</sup> fat free milk mixed with 7.5 cm<sup>3</sup> tap water (therefore a 25% fat free milk solution).

1x plastic dropper bottle labelled “**methylene blue**” and filled with 3 cm<sup>3</sup> of methylene blue solution.

**Question 2:**

1x lid of the petri dish containing 6 kidney beans that have been soaked in water for 24 hours prior to the practical and are labelled as “**R**”

1x (other) lid of the petri dish containing a heaped teaspoon of brown lentils that have been soaked in water for 24 hours prior to the practical and are labelled as “**S**”

2x test-tubes

1x test-tube rack (same as Question 1)

1x spatula spoon

1x 5 cm<sup>3</sup> syringe

1x mortar and pestle

1x 500 cm<sup>3</sup> plastic beaker labelled “**for waste**”

2 pieces of kitchen paper

1x plastic dropper bottle containing 5 cm<sup>3</sup> “**Biuret A**” and labelled as such

1x plastic dropper bottle containing 5 cm<sup>3</sup> “**Biuret B**” and labelled as such