



higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE

CHEMISTRY N5

(15040015)

10 August 2021 (X-paper)

09:00–12:00

Drawing instruments may be used.

This question paper consists of 6 pages and 1 periodic table.

245Q1G2110

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
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CHEMISTRY N5
TIME: 3 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer all the questions.
 2. Read all the questions carefully.
 3. Number the answers according to the numbering system used in this question paper.
 4. Only use a black or blue pen.
 5. Write neatly and legibly.
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QUESTION 1

Indicate whether the following statements are TRUE or FALSE by writing only 'True' or 'False' next to the question number (1.1–1.5) in the ANSWER BOOK.

- 1.1 A heterolytic bond breaking occurs in radical reaction where each fragment leaves with one unpaired electron.
- 1.2 A 5% solution of acetic acid in water is called vinegar.
- 1.3 Esters and carboxylic acids have pleasant fruity odours.
- 1.4 Methanol is the alcohol that is found in beer.
- 1.5 Dehydration is a reaction that involves a loss of hydrogen.

(5 × 1)

[5]**QUESTION 2**

- 2.1 Consider the following compounds:

<p>A</p> $\begin{array}{c} \text{CH}_2\text{CH}_3 \\ \\ \text{CH}_3\text{CH}_2\text{CH}_2\text{CH} - \text{CH}_3 \end{array}$	<p>B</p> $\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_2 \\ \\ \text{CH}_3\text{CHCH} \text{CH}_2\text{CH}_3 \\ \\ \text{CH}_2\text{CH}_2\text{CH}_3 \end{array}$
<p>C</p> $\begin{array}{c} \text{CH}_3 \quad \text{CH}_2 \quad \text{CH}_3 \quad \text{CH}_2\text{CH}_3 \\ \quad \quad \quad \\ \text{CH}_3\text{CHCH}_2\text{CH}_2\text{CH} - \text{CHCH}_2\text{CH}_3 \end{array}$	<p>D</p> $\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3\text{CHCHCH}_2\text{CH}_2\text{CH}_3 \\ \\ \text{CH}_2\text{CH}_3 \end{array}$

- 2.1.1 Write the IUPAC names of compounds C and B. (6)
- 2.1.2 Draw the structure of a straight-chain isomer of compound A. (2)
- 2.1.3 Which compounds are structural isomers? (1)
- 2.1.4 Write the molecular formula of compound D. (2)
- 2.1.5 What is the general formula of the compounds? (1)
- 2.1.6 Which compounds are soluble in water? (2)
- 2.1.7 Write a balanced reaction equation for the combustion of compound B in oxygen. (4)