higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE

CHEMISTRY N5

(15040015)

14 February 2022 (X-paper)
09:00–12:00

Drawing instruments may be used.

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

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE
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. Any drawings or diagrams should be large, neat and may be done in pencil.
5. Use only a blue or black pen.
6. Write neatly and legibly.

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 Radicals are highly reactive. They have an even number of electrons.

1.2 Hydrogenation is the removal of hydrogen from hydrocarbons.

1.3 Ethers have hydrogen bonds.

1.4 Alcohols are stronger proton donors than carboxylic acids.

1.5 Urea has a potassium content of 45%.

(5 × 1) **[5]**

QUESTION 2

2.1 A certain saturated hydrocarbon is used during a cracking reaction for the production of petrol. The hydrocarbon has 18 hydrogen atoms.

2.1.1 What is the general formula of the hydrocarbon? (1)

2.1.2 Write the molecular formula of the hydrocarbon. (2)

2.1.3 Write the IUPAC name of the straight-chained isomer. (2)

2.1.4 Is the hydrocarbon soluble in water?

State 'Yes' or 'No' and explain the answer. (2 × 1) (2)

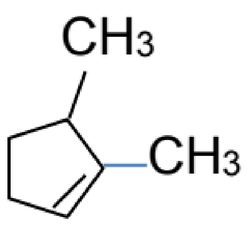
2.1.5 Draw THREE possible structural isomers of the hydrocarbon. (3 × 2) (6)

2.1.6 Briefly explain why the hydrocarbon exists in a liquid form at ordinary temperature. (2)

2.1.7 Write a balanced reaction equation for the combustion of hydrocarbon in oxygen. (4)

2.2 Write the IUPAC names of the following compounds:

2.2.1



2.2.2