higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T360**(E)**(A7)T

NATIONAL CERTIFICATE

CHEMISTRY N5

(15040015)

7 August 2019 (X-Paper)
09:00–12:00

Calculators may be used.

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

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

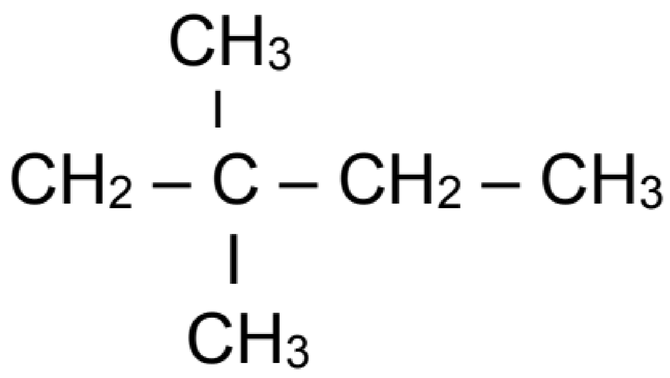
NATIONAL CERTIFICATE
CHEMISTRY N5
TIME: 3 HOURS
MARKS: 100

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. Write neatly and legibly.

QUESTION 1: INTRODUCTION TO ORGANIC CHEMISTRY AND ALKANES

1.1 Consider the following compound and answer the questions:



1.1.1 Indicate the type of hybridisation that occurs at C2 and C3. (2)

1.1.2 What is the general formula of the compound? (1)

1.1.3 Classify the compound as either a saturated or an unsaturated hydrocarbon. Explain your answer. (2)

1.1.4 Name the type of reactive species that are formed when the compound above is reacted with chlorine in the presence of light. (1)

1.1.5 Briefly describe a homolytic bond cleavage and give an example. (5)

1.2 Draw ONE structure of the following:

1.2.1 Aliphatic compound

1.2.2 Aromatic compound

1.2.3 Heterocyclic compound

(3 × 2) (6)

1.3 Classify the following as either nucleophiles or electrophiles:

1.3.1 H_3O^+

1.3.2 $C\ell^-$

1.3.3 NH_3

(3 × 1) (3)

[20]