higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

CHEMISTRY N5

19 April 2021

This marking guideline consists of 5 pages.

QUESTION 1

1.1 C (1)

1.2 D (1)

1.3 Ketones (1)

1.4 C_nH_{2n+2} (1)

1.5 A: 1-propene
B: Phenol
F: Propanone (3 × 2) (6)

1.6

CH_3
|
$CH_3 – CH – CH_2 – CH_2 – CH_3$✓ 2-methylpentane✓

CH_3CH_3
| |
$CH_3 – CH – CH – CH_3$✓ 2,3-dimethylbutane✓

CH_3
|
$CH_3 – CH_2 – CH – CH_2 – CH_3$✓ 3-methylpentane✓

CH_3
|
$CH_3 – C – CH_2 – CH_3$✓ 2,2-dimethylbutane✓
|
CH_3

(Any 3 × 2) (6)

1.7 $C_4H_6 + {}^{11}/_2O_2\,(g) \rightarrow 4CO_2\,(g) + 3H_2O\,(\ell)$ (4)

1.8 Addition reaction. (1)

1.9 C1: Sp^3
C2: Sp (2)

1.10
- Compound B:✓ Alcohols are soluble in water, but the extent of its solubility is limited.✓
- Compound F:✓ Acetone is soluble in water.✓

(Any 2 × 1) (2)
[25]

QUESTION 2

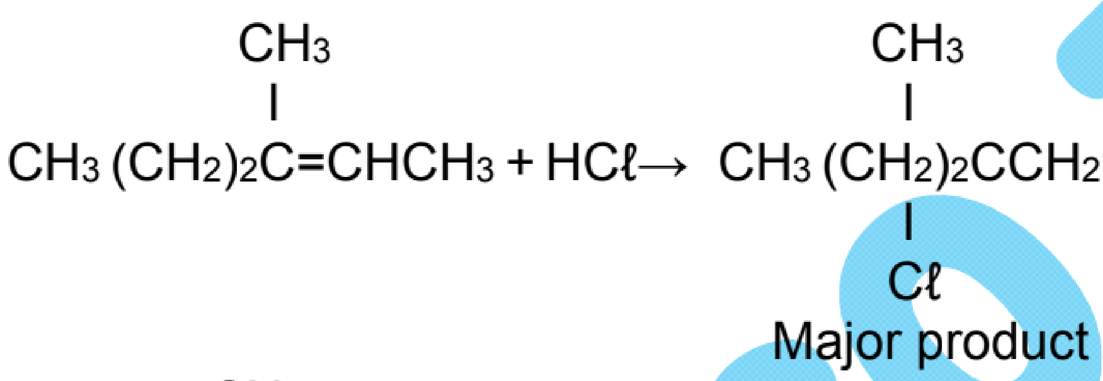
2.1 2.1.1 C_7H_{14} (1)

2.1.2 C_nH_{2n} (1)

2.1.3 It is nonpolar.✓ Alkenes are nonpolar compounds.✓ (2)

2.1.4 Markovnikov's rule states that during the addition of HX to an alkene, the H attaches itself to the carbon atom with fewer alkyl substituents and the X will attach itself to a carbon atom with more alkyl substituents. (2)

2.1.5



(4)

2.1.6
- 3-chloro-3-methylhexane
- 2-chloro-3-methylhexane

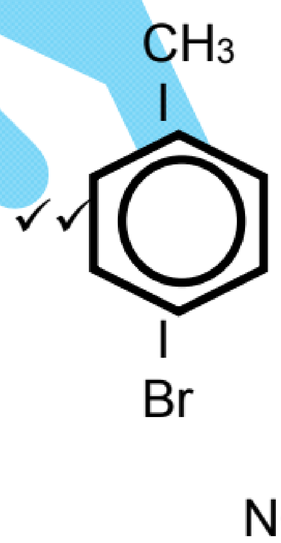
(2 × 2) (4)

2.1.7
- Ketone or 2-pentanone
- Aldehyde/Ethanal

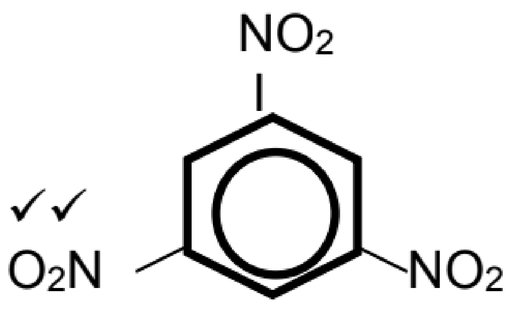
(2 × 2) (4)

2.2 $HC \equiv CCH_3$✓ (3)

2.3 2.3.1



2.3.2



(2 × 2) (4)
[25]