higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

CHEMISTRY N5

25 November 2022

This marking guideline consists of 7 pages.

QUESTION 1

1.1 1.1.1 False.✓ Propyne is unsaturated.√ It contains a triple bond.√

1.1.2 False.✓ Acyclic compounds are organic compounds in which the carbon atoms are arranged in open√ chains.√

1.1.3 True.✓ Methane has four single√ bonds bonded√ to hydrogen, making it sp^3.

1.1.4 True.✓ Acetone and propanal have the same√ molecular formula, but different√ structures.

1.1.5 True.✓ Boiling point increases√ with increase in carbon√ number.

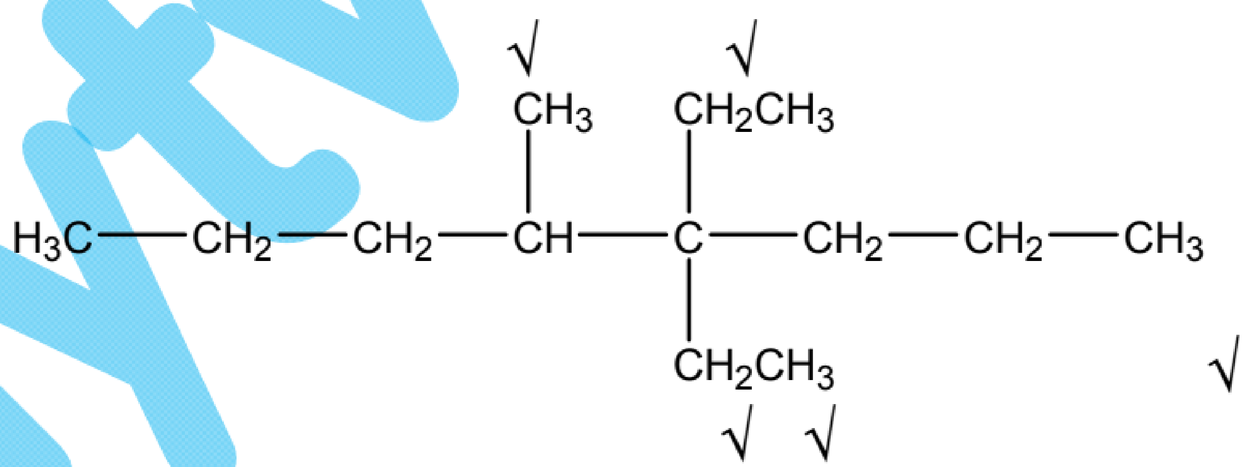
(5 × 2) (10)

1.2 A – Benzene ring
B – Amide
C – Carbonyl
D – Amine
E – Carboxylic

(5 × 1) (5)
[15]

QUESTION 2: ALKANES

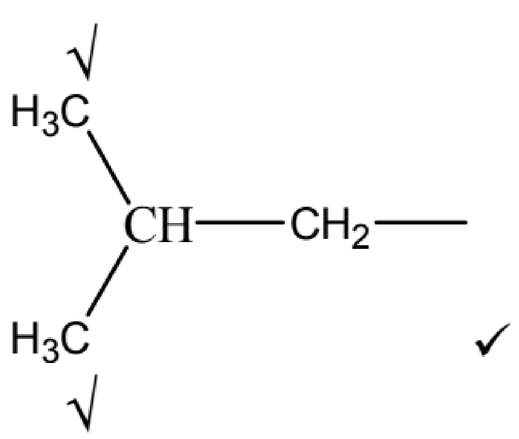
2.1 2.1.1



(3)

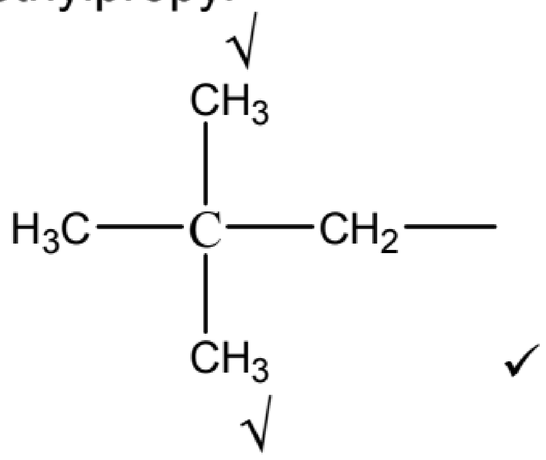
2.1.2 $C_{13}H_{28}$✓ (1)

2.2 2.2.1 Isopropyl



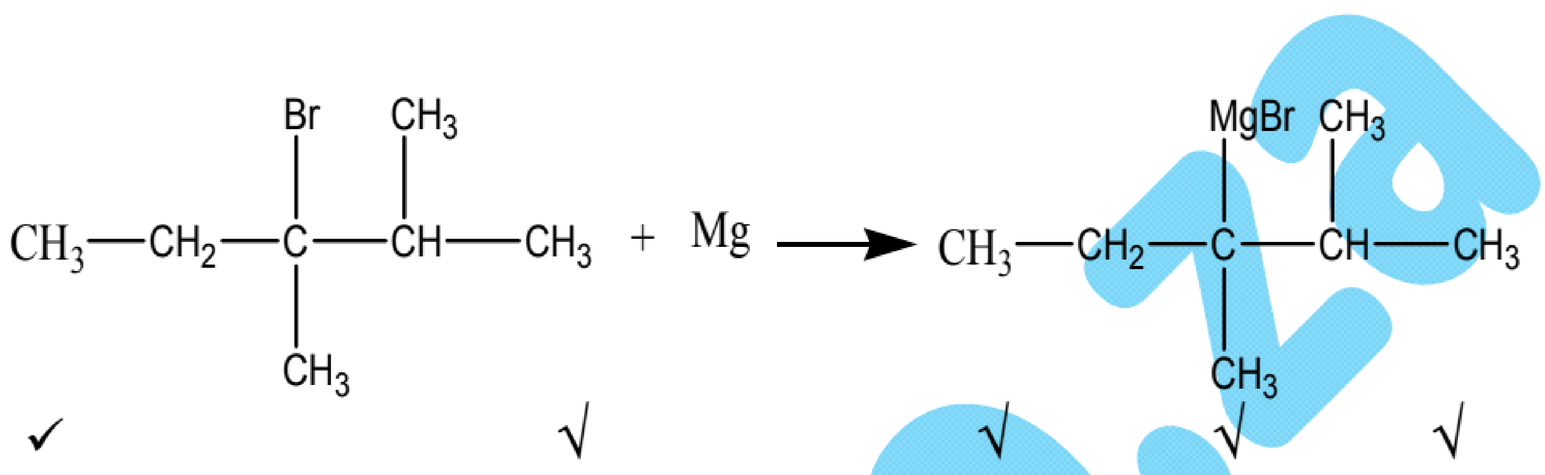
(2)

2.2.2 Neopentyl or 2,2-dimethylpropyl



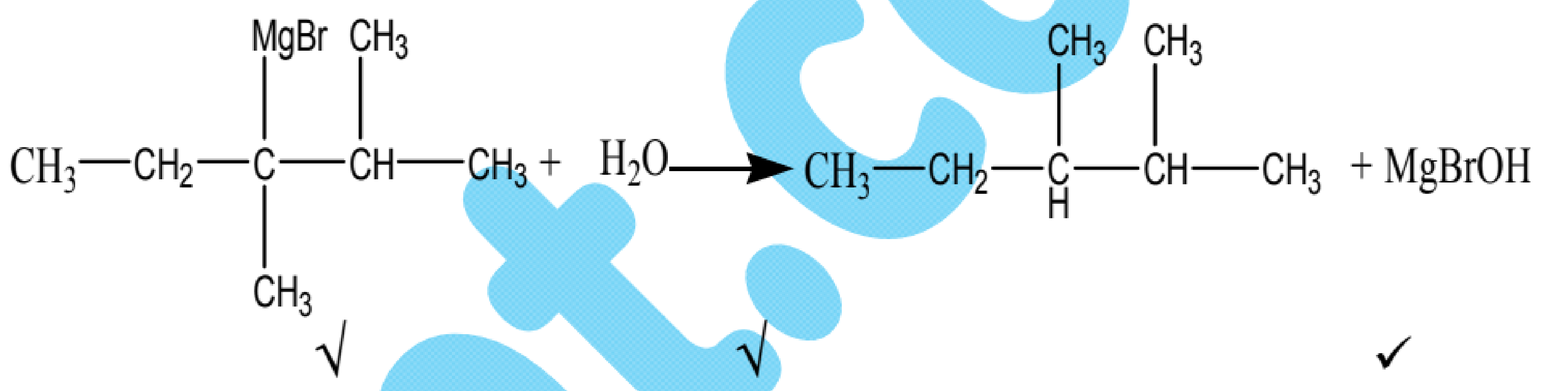
√ √ ✓ √ (2)

2.3 2.3.1



✓ √ √ √ √ (3)

2.3.2



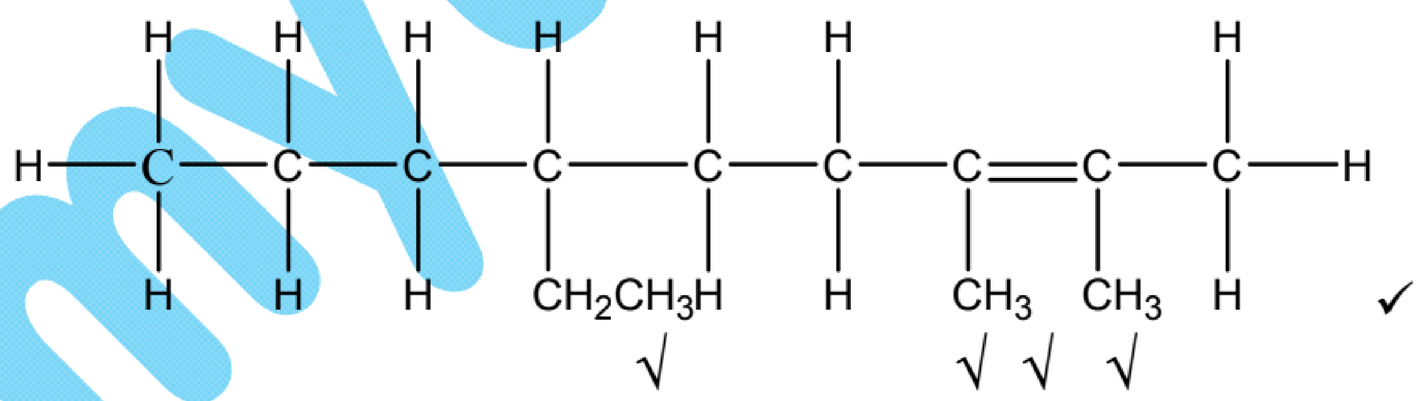
√ √ ✓ (2)

2.3.3 2,3√-dimethylpentane√ (1)

[14]

QUESTION 3: ALKENES

3.1



√ √ √ √ ✓ (3)

3.2 3.2.1 Saytseff's rule: In an elimination√ reaction,√ the alkene√ with the greatest√ number of alkyl√ substituents predominates√ (that is, the most highly substituted alkenes).

Alternative answer: When two alkenes√ can form from a single alcohol, the alkene√ that predominates√ is the one with the most√ alkyl substituents√ on the double√ bond. (3)

