higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NASIENRIGLYN

NASIONALE SERTIFIKAAT

CHEMIE N5

4 Desember 2023

Hierdie nasienriglyn bestaan uit 8 bladsye.

Kopiereg voorbehou

VRAAG 1

1.1 1.1.1 Waar, dit het dieselfde molekulêre formule.✓✓

1.1.2 Waar, die funksionele groep maak deel uit van chemiese reaksie.✓✓

1.1.3 Onwaar, dit bevat slegs chloor- en fluooratome.✓✓

1.1.4 Waar, dit verskil slegs ten opsigte van die aantal neutrone OF dit verskil volgens massagetal.✓✓

1.1.5 False,✓ the condensed formula of pentane is $CH3(CH_2)_3CH_3$✓ **OR** pentane has 5 carbon atoms, not six.

(5 × 2) (10)

1.2 1.2.1



1.2.2

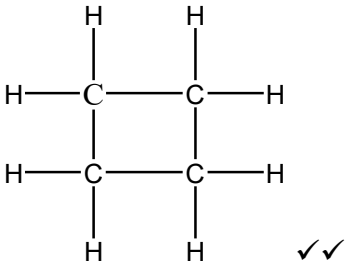


(2 × 2) (4)

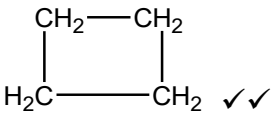
1.3 Sp (1)
[15]

VRAAG 2: ALKANE

2.1



OF



C_4H_8 ✓ (4)

2.2 Pentaan is niepolêr, benseen is niepolêr en polêr. Niepolêre verbindings los niepolêre verbindings op en polêre verbindings los polêre verbindings op.✓✓✓✓ (4)

2.3 4-ethyl-2,2-dimethyl hexane
√ √ √√ √ √ (3)

2.4
- Inisiëring
- Voortplanting
- Beëindiging (3)

[13]

VRAAG 3: ALKENE

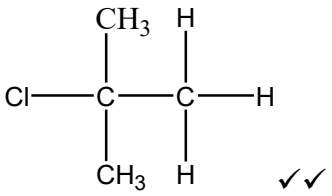
3.1
- 1-buteen
- 2-buteen
- Isobuteen (3)

3.2 Met die byvoeging van 'n waterstofhalied by 'n asimmetriese alkeen, heg die waterstofatoom aan die mindervervangde koolstof

OF

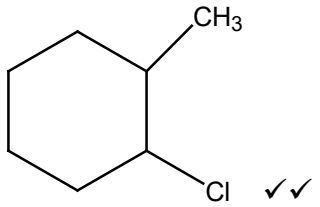
By die byvoeging van 'n polêre molekule by 'n asimmetriese alkeen, heg die waterstofatoom aan die koolstof met die groter aantal waterstofatome. (2)

3.3 3.3.1



✓✓

3.3.2



✓✓

(2 × 2) (4)

3.4 √ √ ✓ ✓

$$CH_3CH_2CH_2CHOHCH_3 \xrightarrow{H_2SO_4} CH_3CH_2CH_2CH{=}CH_2 + CH_3CH_2CH{=}CHCH_3$$

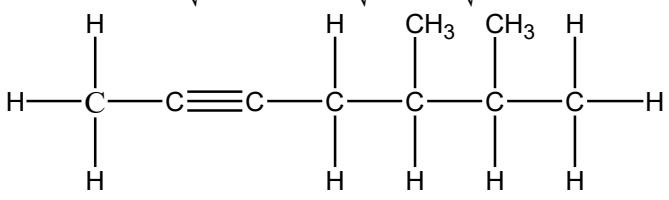
Geringe produk Hoofproduk (4)

[13]

VRAAG 4: ALKYNE

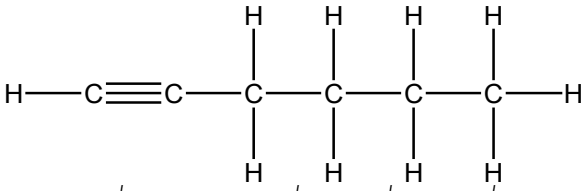
4.1 Strukturele formule van 5,6-dimetiel-2-heptyn.

√ √ √



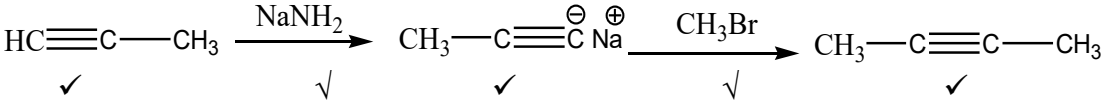
√ C_9H_{16}✓ (3)

4.2



√ √ √ √ 1- heksaan✓ (3)

4.3



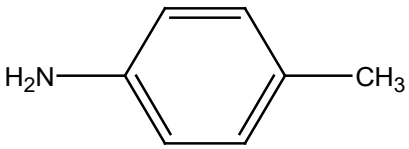
✓ √ ✓ √ ✓ (4)

[10]

VRAAG 5: AROMATIESE VERBINDINGS

5.1 5.1.1

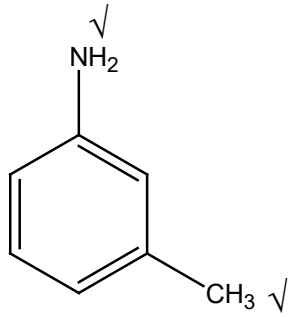
√ √√ √



p-aminotolueen

5.1.2

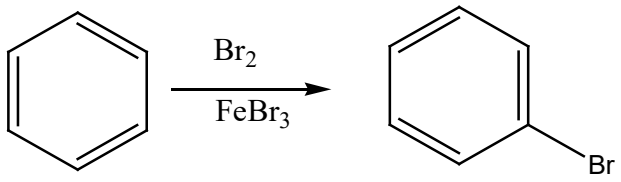
√



m-methylaniline

(2 × 2) (4)

5.2



✓ ✓ ✓ Bromobenseen✓ (4)

5.3 5.3.1 4-nitrotolueen ✓✓
OR 1-metiel-4-nitrobenseen
OR p-nitrotolueen

5.3.2 1-bromo-3-nitrobenseen✓✓
OR m-nitro bromobenseen

(2 × 2) (4)
[12]

VRAAG 6: ALKOHOLE

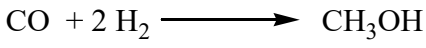
6.1 6.1.1 2-butanol✓
OF butaan-2-ol ; sekondêr ✓

6.1.2 2-metiel-2-butanol ; tersiêr✓✓

6.1.3 1-propanol✓
OF propan-1-ol ; primêr✓

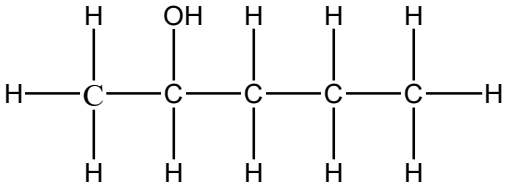
(3 × 2) (6)

6.2



✓ ✓ ✓ (3)

6.3

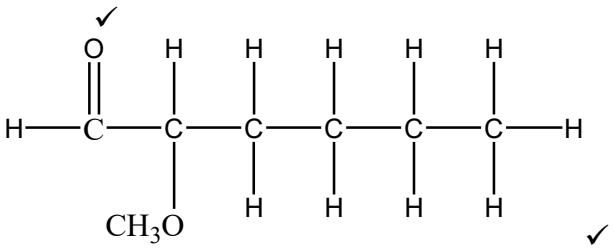


✓ 2-pentanol OF pentan-2-ol✓

(2)
[11]

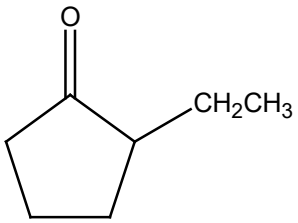
VRAAG 7: ALDEHIEDE EN KETONE

7.1 7.1.1



✓ ✓ ✓ ✓ (3)

7.1.2

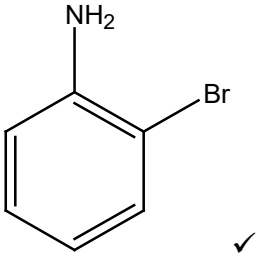


✓ ✓ ✓ (3)

7.2 Aldehied; karboksielsuur✓✓ (2)
[8]

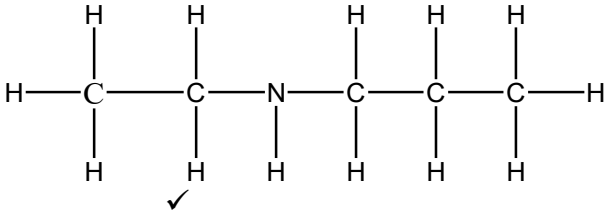
VRAAG 8: AMIENE

8.1 8.1.1



✓ Primêre✓

8.1.2



✓ Sekondêre ✓ (2 × 2) (4)

8.2 $CH_3CH_2CH_2CH_2Cl + NH_3 \longrightarrow CH_3CH_2CH_2CH_2\overset{\oplus}{N}H_3\overset{\ominus}{Cl}$

✓ √ ✓

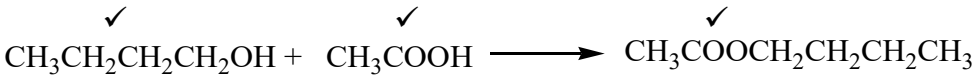
$CH_3CH_2CH_2CH_2\overset{\oplus}{N}H_3\overset{\ominus}{Cl} \xrightarrow{KOH} CH_3CH_2CH_2CH_2NH_2$

√ ✓ (4)
[8]

VRAAG 9: KARBOKSIELSURE

9.1 9.1.1 Bensoësuur
9.1.2 Oktanoësuur
9.1.3 2-chlorobutanoësauur

(3 × 2) (6)

9.2 

Butieletanoaat ✓
OF Butielasetaat (4)
[10]

TOTAAL: 100

Kopiereg voorbehou