higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NASIENRIGLYN

NASIONALE SERTIFIKAAT

CHEMIE N5

25 November 2022

Hierdie nasienriglyn bestaan uit 7 bladsye.

Kopiereg voorbehou

VRAAG 1

1.1 1.1.1 Onwaar.✓ Propyn is onversadig.√ Dit bevat 'n drievoudige binding.√

1.1.2 Onwaar.✓ Asikliese verbindings is organiese verbindings waarin die koolstofatome in oop√ kettings√ rangskik word.

1.1.3 Waar.✓ Metaan het vier enkelbindings√ wat aan waterstof gebind√ is, wat dit sp^3 maak.

1.1.4 Waar.✓ Asetoon en propanaal het dieselfde√ molekulêre formule maar verskillende√ strukture.

1.1.5 Waar.✓ Kookpunt styg√ met toename in koolstofgetal.√

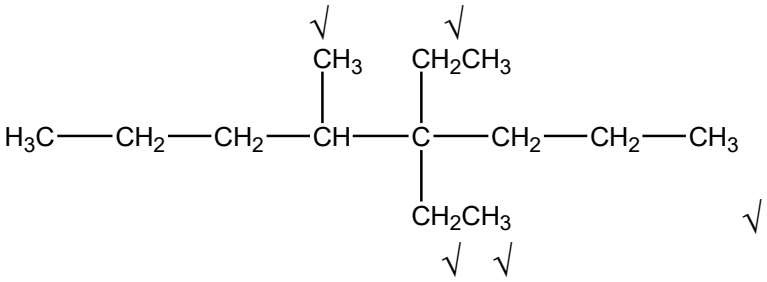
(5 × 2) (10)

1.2 A – Benseenring
B – Amied
C – Karboniel
D – Amien
E – Karboksiel

(5 × 1) (5)
[15]

VRAAG 2: ALKANE

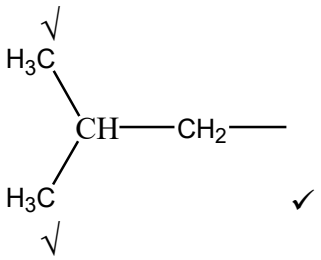
2.1 2.1.1



(3)

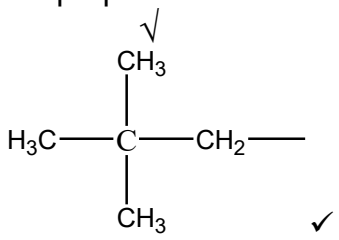
2.1.2 $C_{13}H_{28}$✓ (1)

2.2 2.2.1 Isopropiel



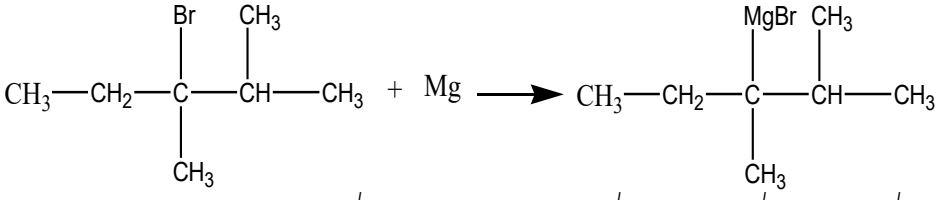
(2)

2.2.2 Neopentiel of 2,2-dimetielpropiel



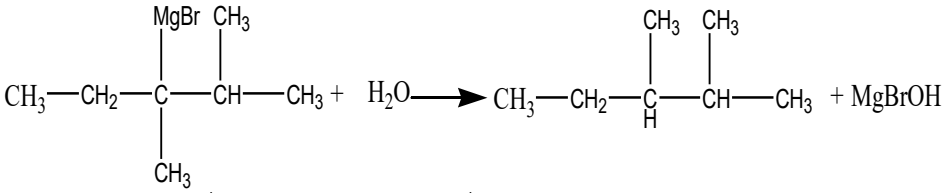
√ √ ✓ (2)

2.3 2.3.1



✓ √ √ √ √ (3)

2.3.2



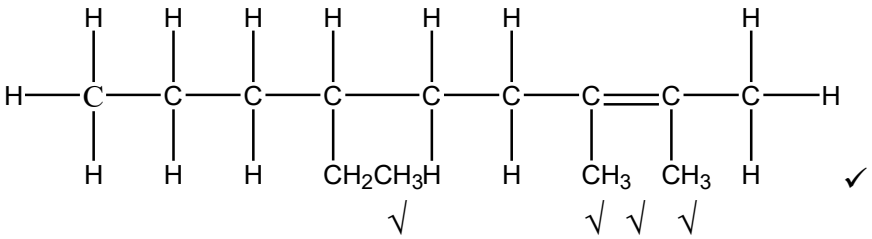
√ √ ✓ (2)

2.3.3 2,3√-dimetielpentaan√ (1)

[14]

VRAAG 3: ALKENE

3.1

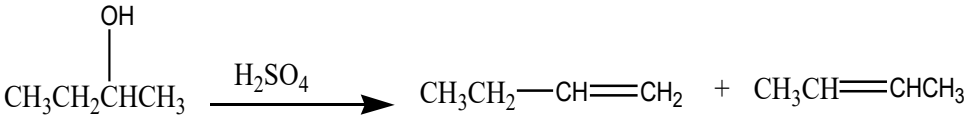


√ √ √ √ ✓ (3)

3.2 3.2.1 Reël van Saytseff: In 'n eliminasiereaksie√√ oorheers√ die alkeen√ met die grootste√ aantal alkielsubstituente√ (d.w.s. die mees hoogs gesubstitueerde alkene).

Alternatiewe antwoord: Wanneer twee alkene√ 'n enkele alkohol kan vorm, is die alkeen√ wat oorheers√ die een met die meeste√ alkielsubstituente√ op die dubbelbinding.√ (3)

3.2.2 ✓ ✓ √ √

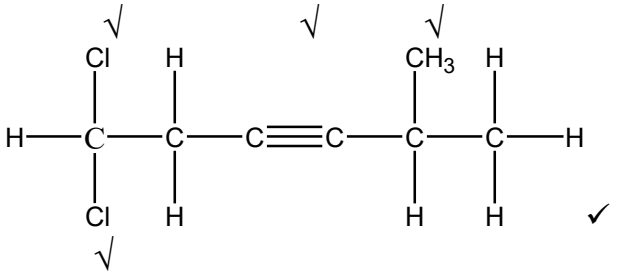


Byproduk 1-buteen √ Hoofproduk 2-buteen√ (4)

[10]

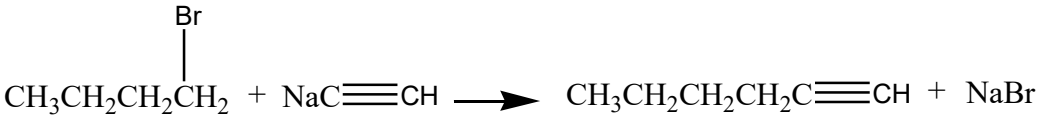
VRAAG 4: ALKYNE

4.1 Struktuurformule van 1,1-dichloor-5-metiel-3-heksyn.



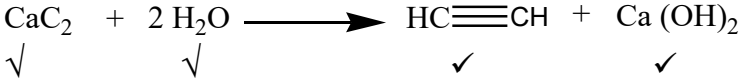
√ √ √ ✓ √ (3)

4.2



✓ ✓ ✓ ✓ (4)

4.3



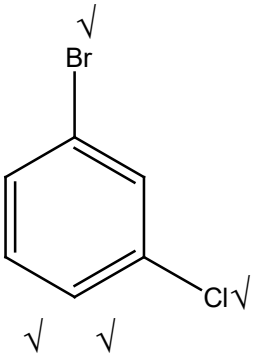
√ √ ✓ ✓

Etyn/asetileen✓ (4)

[11]

VRAAG 5: AROMATIESE VERBINDINGS

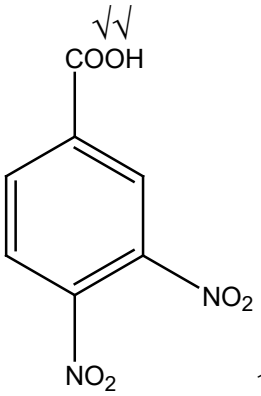
5.1 5.1.1



√ √ √ √

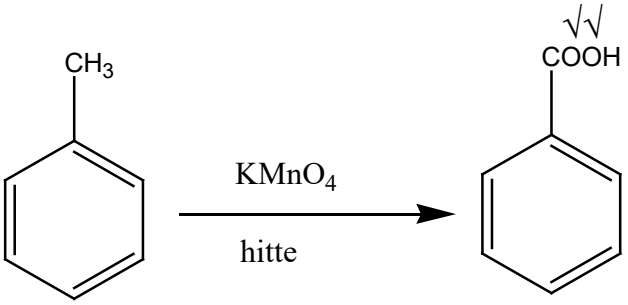
m-broomchloorbenseen (2)

5.1.2



3,4-dinitrobensoësuur (3)

5.2



Bensoësuur√√ (2)

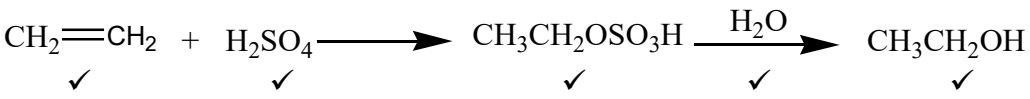
5.3 Nitrasie✓✓ (2)

5.4 sp^2✓ (1)

[10]

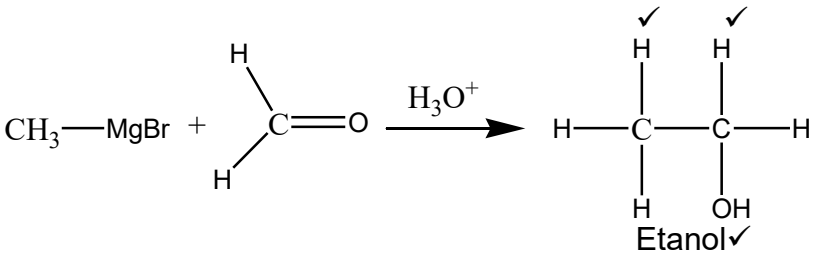
VRAAG 6: ALKOHOLE

6.1



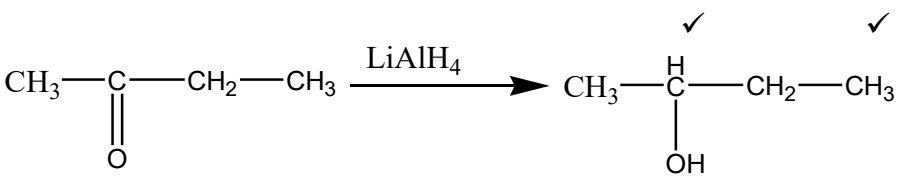
(5)

6.2 6.2.1



Etanol✓ (3)

6.2.2



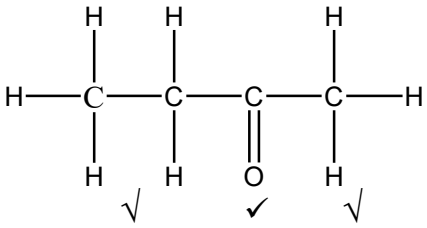
2-butanol✓ (3)

[11]

VRAAG 7: ALDEHIEDE EN KETONE

7.1 Asetoon✓ (1)

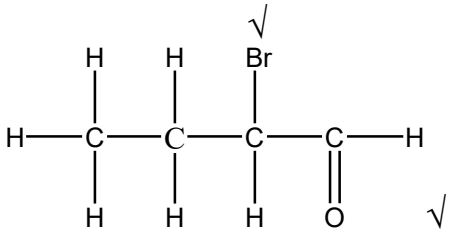
7.2 7.2.1



√ ✓ √

Etielmetielketoon

7.2.2

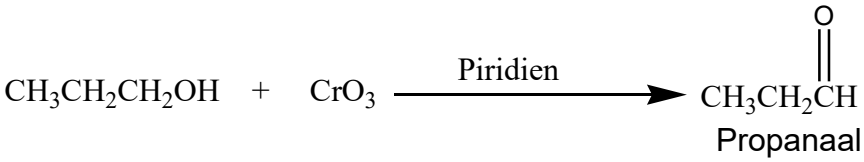


√

2-broombutanaal ✓

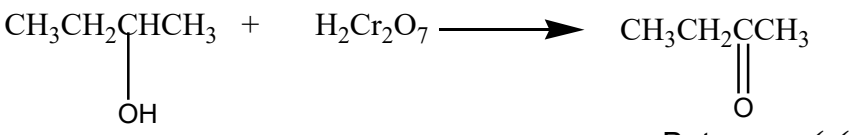
(2 × 2) (4)

7.3 7.3.1



Propanaal✓✓

7.3.2

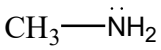


Butanoon✓✓

(2 × 2) (4)
[9]

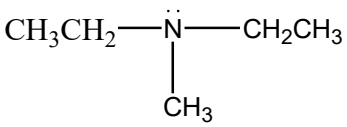
VRAAG 8: AMIENE

8.1 8.1.1



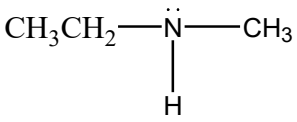
Metielamien✓ Primêre amien✓

8.1.2



Diëtielmetielamien✓ Tersiêre amien✓

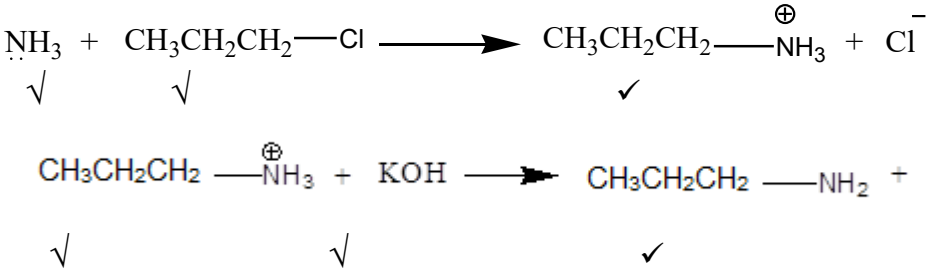
8.1.3



Etielmetielamien✓ Sekondêre amien✓

(3 × 2) (6)

8.2



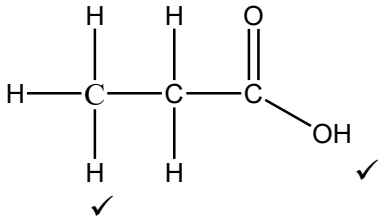
(4)

8.3 Amiene kan as Lewis-basisse geklassifiseer word omdat hulle 'n elektronpaar√√ kan skenk.✓
Alternatiewe antwoord: Amiene kan as Lewis-basisse geklassifiseer word omdat hulle enkel-/vry√ elektronpaar√√ het wat hulle kan weggee.√ (2)

[12]

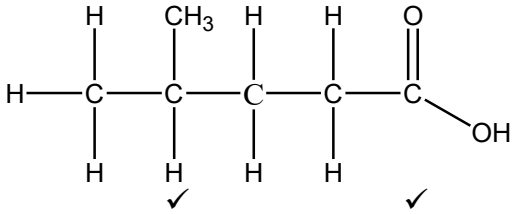
VRAAG 9: KARBOKSIELSURE

9.1 9.1.1



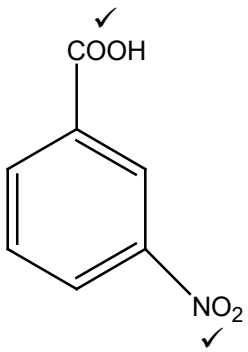
Propanoësuur

9.1.2



4-metielpentanoësuur

9.1.3



m-nitrobensoësuur

(3 × 2) (6)

9.2 Metielmetanoaat of metielformiaat✓✓ (2)

[8]

TOTAAL: 100

Kopiereg voorbehou