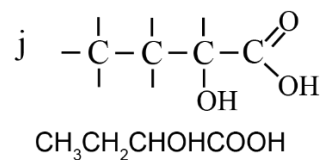
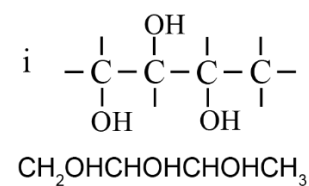
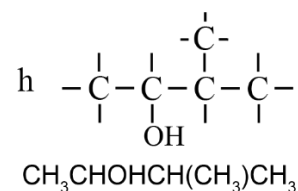
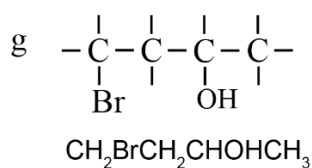
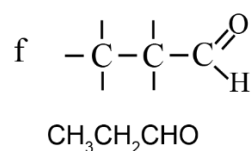
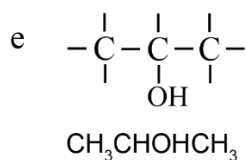
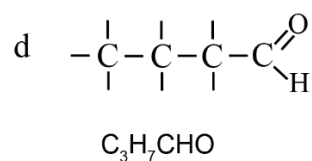
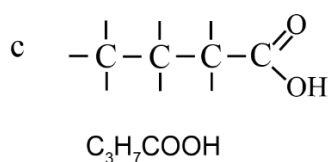
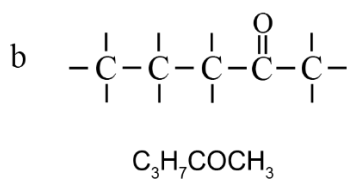
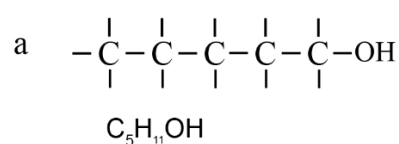


Opgave 1

Teken de structuurformules van:

- a $C_5H_{11}OH$
- b $C_3H_7COCH_3$
- c C_3H_7COOH
- d C_3H_7CHO
- e $CH_3CHOHCH_3$
- f CH_3CH_2CHO
- g $CH_2BrCH_2CHOHCH_3$
- h $CH_3CHOHCH(CH_3)CH_3$
- i $CH_2OHCHOHCHOHCH_3$
- j $CH_3CH_2CHOHCOOH$

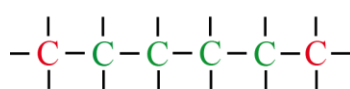


Opgave 2

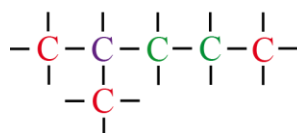
De naam van het eenvoudigste alkaan met in het molecuul ten minste één primair, secundair, tertiair en quaternair C-atoom: 2,2,3-trimethylpentaan

Opgave 3

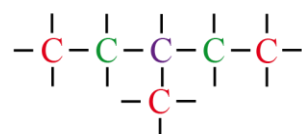
Geef de structuren en namen van alle structuurisomeren van hexaan (5) en wijs hierin de primaire, secundaire, tertiaire en quaternaire C-atomen aan.



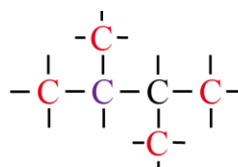
hexaan



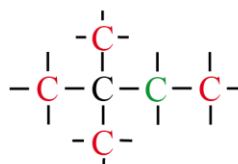
2-methylpentaan



3-methylpentaan



2,3-dimethylbutaan

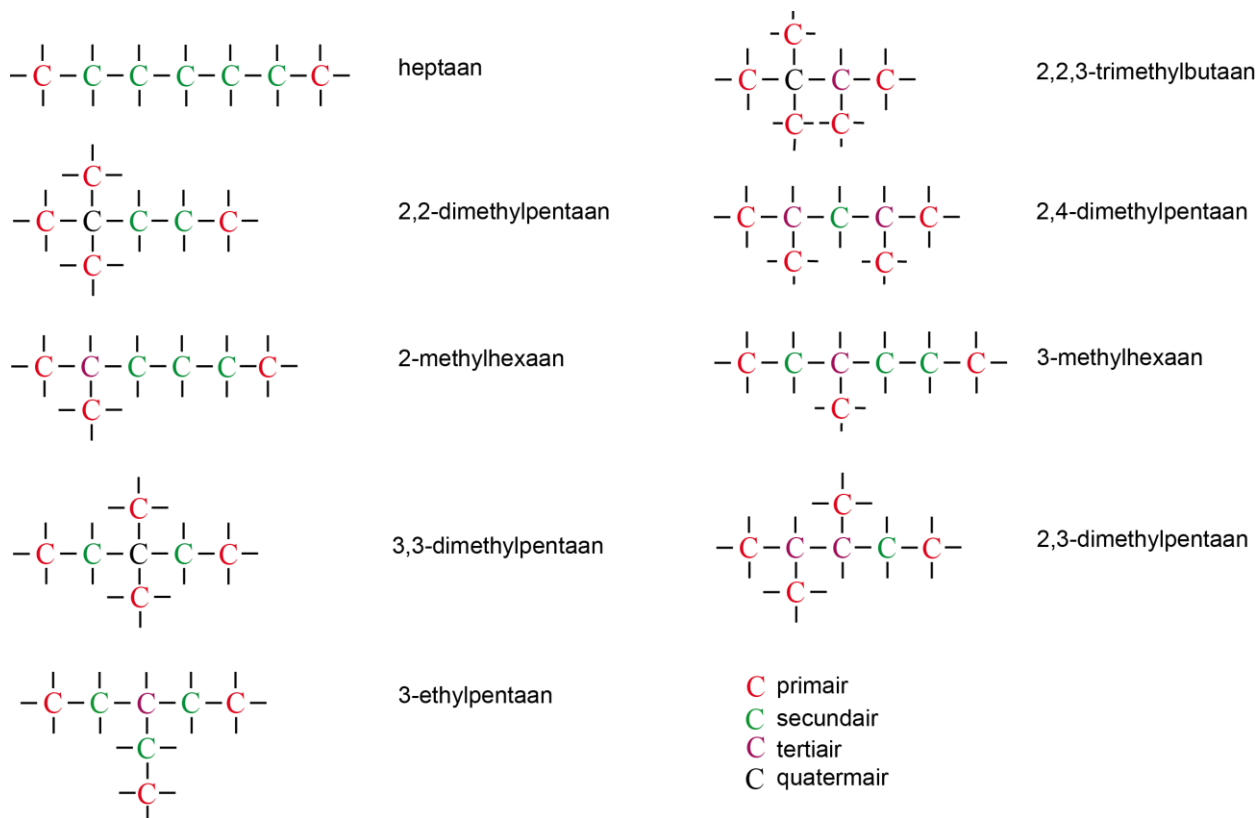


2,2-dimethylbutaan

C primair
C secundair
C tertiair
C quaternair

Opgave 4

Geef namen en structuren van alle structuurisomeren van heptaan (9) en wijs hierin de primaire, secundaire, tertiaire en quaternaire C-atomen aan.



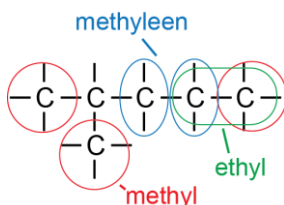
Opgave 5

Hoeveel methylgroepen, ethylgroepen en methyleengroepen bevat 2-methylpentaan?

methylgroepen: 3

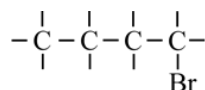
ethylgroep: 1

methyleengroepen: 2

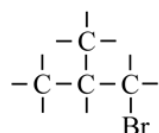


Opgave 6

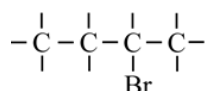
Geef de structuren en namen van alle vier de structuurisomeren van C_4H_9Br .



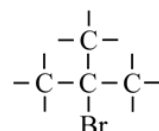
1-broombutaan



1-broom-2-methylpropaan



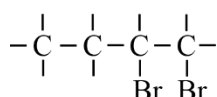
2-broombutaan



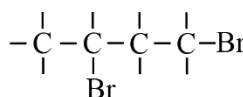
2-broom-2-methylpropaan

Opgave 7

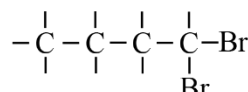
Geef de structuren en namen van alle negen de structuurisomeren van: $C_4H_8Br_2$.



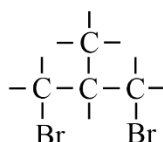
1,2-dibroombutaan



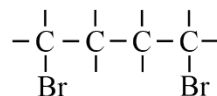
1,3-dibroombutaan



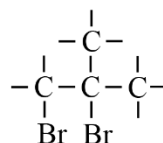
1,1-dibroombutaan



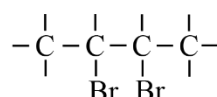
1,3-dibroom-2-methylpropaan



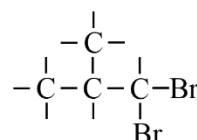
1,4-dibroombutaan



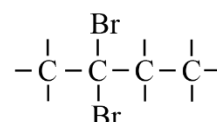
1,2-dibroom-2-methylpropaan



2,3-dibroombutaan



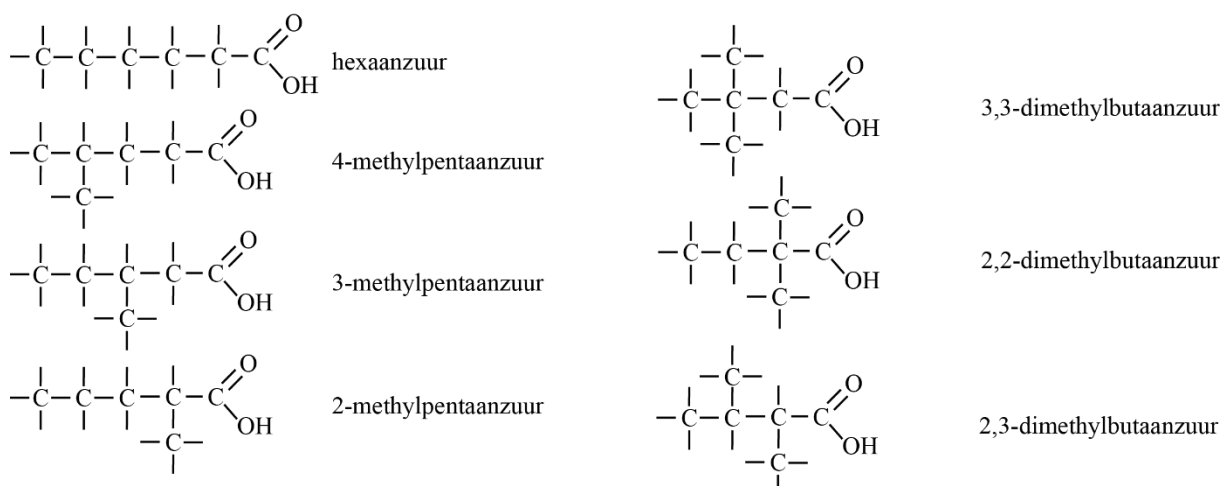
1,1-dibroom-2-methylpropaan



2,2-dibroombutaan

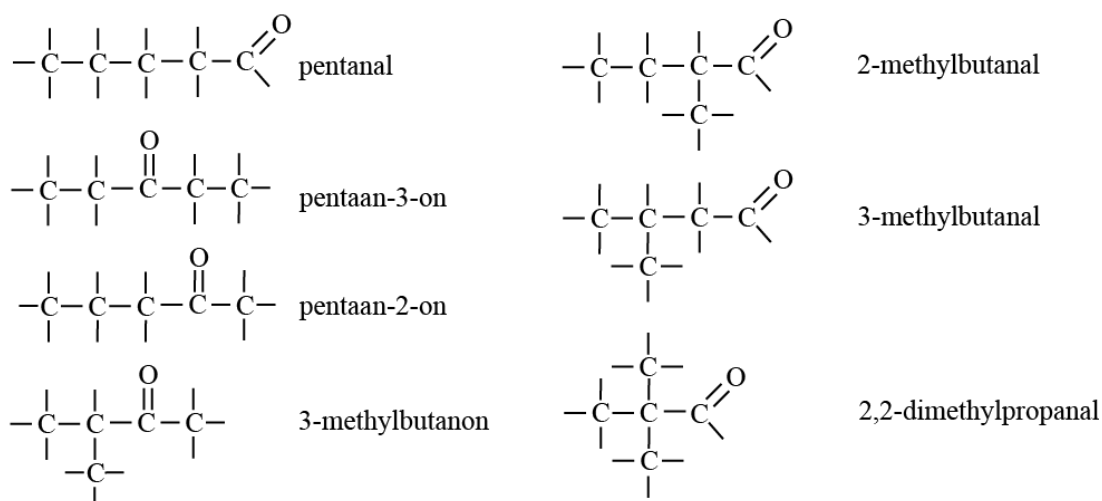
Opgave 8

Geef de structuren en namen van alle alkaanzuren met de formule C_5H_9COOH (7).



Opgave 9

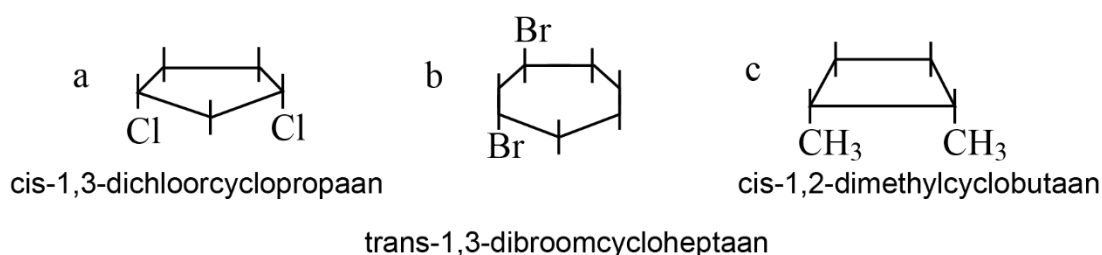
Geef de structuren en namen van alle aldehyden en ketonen met de formule $C_5H_{10}O$ (7).



Opgave 10

Teken de ruimtelijke structuren van:

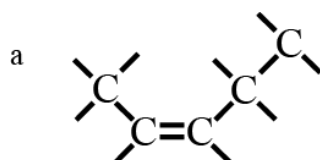
- cis*-1,3-dichloorcyclopentaan
- trans*-1,3-dibroomcycloheptaan
- cis*-1,2-dimethylcyclobutaan



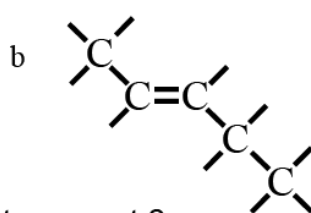
Opgave 11

Teken de ruimtelijke structuren van:

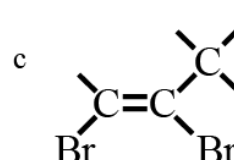
- a *cis*-pent-2-een
- b *trans*-pent-2-een
- c *cis*-1,2-dibroompropeen



cis-pent-2-een



trans-pent-2-een



cis-1,2-dibroompropeen

Opgave 12

Propan-1-ol is in alle verhoudingen mengbaar met water, van pentaan-1-ol lost bij kamertemperatuur slechts 2,3 g per 100 ml water op. Hoe zou dit komen?

Propan-1-ol heeft een apolair deel van 3 C-atomen. Pentaan-1-ol heeft 5 C-atomen. Het molecuul pentaan-1-ol is daardoor meer apolair dan propanol.

Opgave 13

Propanon kookt bij 56,5 °C (normale druk), terwijl propan-2-ol bij 82,3 °C kookt. Kun je uitleggen waardoor dit komt?

Propan-2-ol-moleculen vormen onderling waterstofbruggen, propanon-moleculen niet.

Opgave 14

Kun je uitleggen waardoor het kookpunt in het volgende rijtje stoffen oploopt?

stof	kookpunt (°C)
C ₅ H ₁₂	36
C ₄ H ₉ Cl	78
C ₄ H ₉ OH	118
C ₃ H ₇ COOH	162

Kijk of het molecuul een dipool heeft, dit verhoogt het kookpunt. Kijk of het molecuul H-bruggen kan vormen, dit verhoogt het kookpunt nog sterker.

stof	dipool	H-brug
C_5H_{12}	-	-
C_4H_9Cl	+	-
C_4H_9OH	++	+
C_3H_7COOH	++	++

Opgave 15

Plaats het volgende rijtje in de volgorde van toenemende oplosbaarheid in water:

	dipool?	H-bruggen?
a propaan-1-ol	+	+
b propanon	+	-
c propaanzuur	+	++
d 1-chloorpropaan	+/-	-

d b a c

--toenemend oplosbaar-->