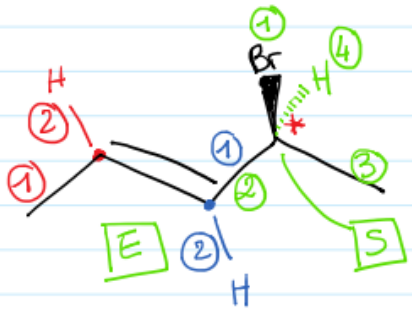
Exercice 10

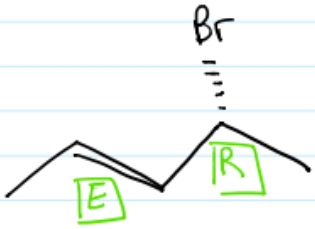
a $H_3C-\overset{H}{C}=CH-\overset{*}{C}HBr-CH_3$ (1 2 3 4 5)

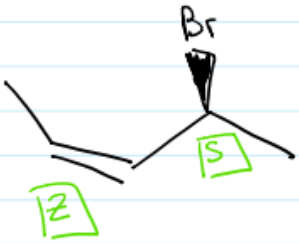
4 - bromo - pent - 2 - ène

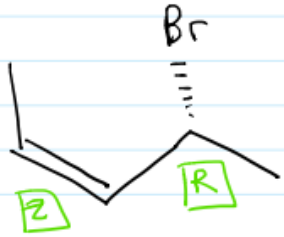
Z/E

R/S

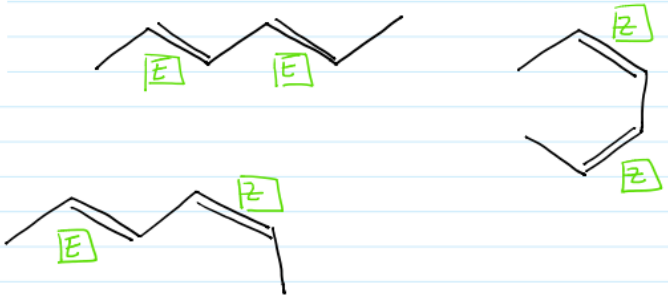








b hexa-2,4-diène

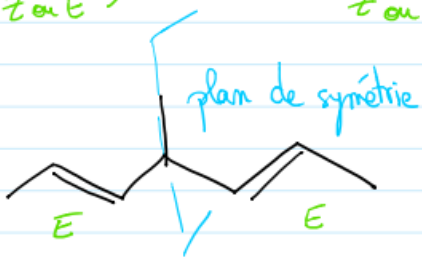


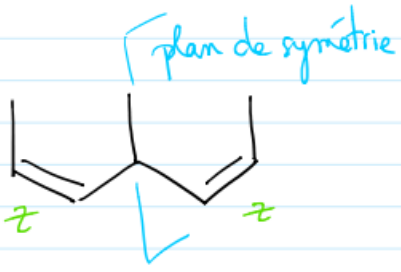
d $H_3C-\overset{H}{C}=\overset{H}{C}-\overset{CH_3}{CH}-\overset{H}{C}=\overset{H}{C}-CH_3$

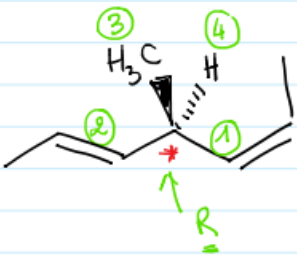
4 - méthyl - hept - 2, 5 - diène

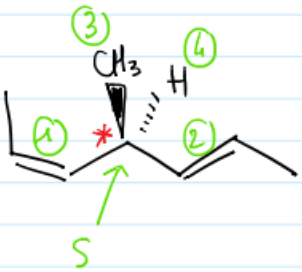
Z ou E

Z ou E

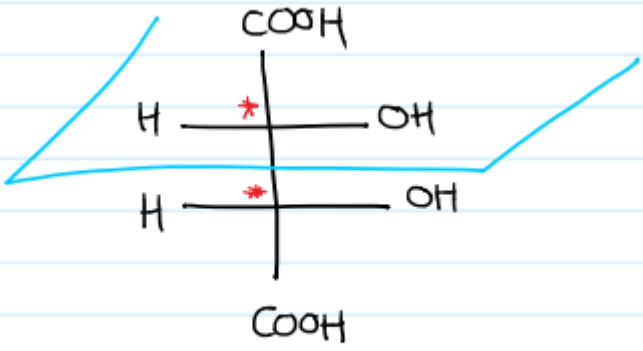








Exercice 11



plan de symétrie

↳ pas d'activité optique

méso

Exercice 12

Rappels

$$[\alpha]_D = \frac{\alpha}{l \times C}$$

loi de Biot

$[\alpha]_D$: pouvoir rotatoire spécifique

α : angle de déviation (en °)

l : longueur de la cuve (en dm)

C : concentration (en g/mL)

lévogyre ⇒ déviat° de la lumière polarisée vers la gauche ($\alpha < 0$)

dextrogyre ⇒ " " " droite ($\alpha > 0$)

$C = 50\ g/L = 50\ g/1000\ mL = 0{,}05\ g/mL$

$l = 20\ cm = 2\ dm$

$\alpha = -9{,}2° \Rightarrow \alpha < 0$, composé lévogyre

$$[\alpha]_D = \frac{-9{,}2}{2 \times 0{,}05} = \frac{-9{,}2}{0{,}1} = -92$$

$[\alpha]_D = -92\ (c = 0{,}05)$

Exercice 13

1) $\alpha_R = -\alpha_S$ mélange équimolaire $\Rightarrow$ $\boxed{\alpha = 0}$

(mélange racémique, 50% R + 50% S)

2) $[\alpha]_D = \dfrac{\alpha}{l \times C}$ $\quad [\alpha]_D(S) = +15,9 \quad \Rightarrow \alpha_S = +15,9°$

l : 1 dm, C : 1 g/mL

$\alpha = \Sigma_i x_i \alpha_i$ $\quad x_i$ = fraction molaire $= \dfrac{n_i}{n_t}$ $\quad \Sigma x_i = 1$

$$\boxed{\alpha_{mélange} = x_R \alpha_R + x_S \alpha_S}$$

25% R et 75% S $\Rightarrow$ $x_R = 0,25$ et $x_S = 0,75$

$\alpha_S = +15,9° \Rightarrow \alpha_R = -15,9°$ (car $\alpha_S = -\alpha_R$)

A.N $\alpha_{mélange} = -0,25 \times 15,9 + 0,75 \times 15,9$

$\boxed{\alpha_{mélange} = 7,95°}$