

Exercices Complémentaires

Chapitre 1 : Etude structurale des molécules organiques

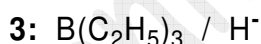
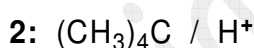
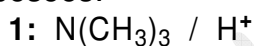
1.1 Exercice 1.1

Quel est le nombre d'électrons de valence des atomes suivants : fluor, silicium, bore, soufre, phosphore ?

CORRECTION Exo 1.1 (page 3)

1.2 Exercice 1.2

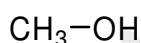
Indiquer, pour chacun des trois cas ci-dessous, s'il est possible d'établir une liaison de covalence dative entre les entités proposées:



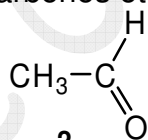
CORRECTION Exo 1.2 (page 3)

1.3 Exercice 1.3

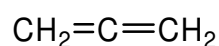
Indiquer l'hybridation des carbones et des hétéroatomes des composés suivants :



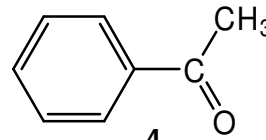
1



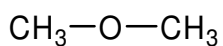
2



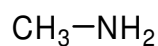
3



4



5



6

CORRECTION Exo 1.3 (page 3)

1.4 Exercice 1.4

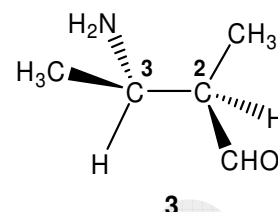
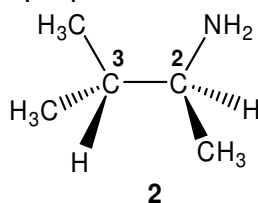
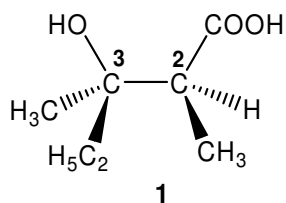
Représenter selon Newman toutes les conformations décalées et éclipsées des molécules suivantes :

- 1-bromo-2-chloroéthane
- 2,2-dichloropropanol (axe C1-C2)

CORRECTION Exo 1.4 (page 4)

1.5 Exercice 1.5

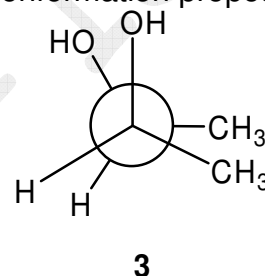
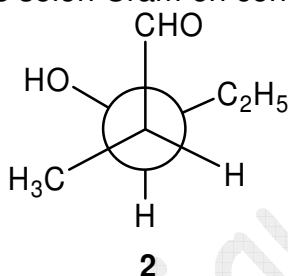
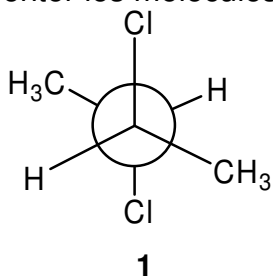
Représenter pour les molécules **1**, **2** et **3** en représentation de Newman selon l'axe de visée C2-C3 en conservant les conformations proposées :



CORRECTION Exo 1.5 (page 5)

1.6 Exercice 1.6

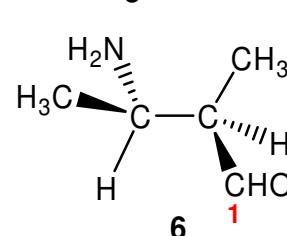
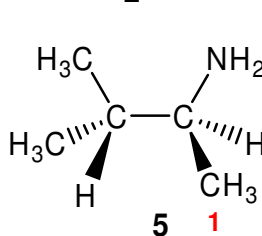
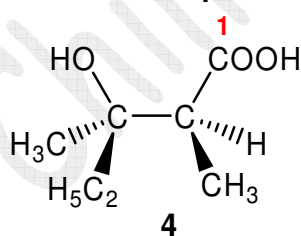
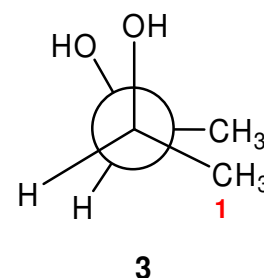
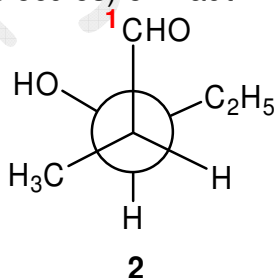
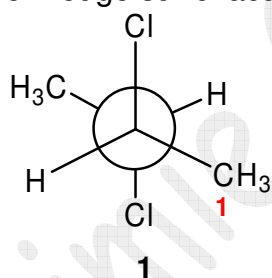
Représenter les molécules suivantes selon Cram en conservant la conformation proposée :



CORRECTION Exo 1.6 (page 5)

1.7 Exercice 1.7

Représenter les molécules suivantes selon Fischer en positionnant le carbone d'indice 1 (indiqué en rouge sur chacune des molécules) en haut :



CORRECTION Exo 1.7 (page 6)

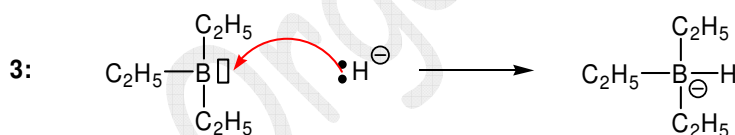
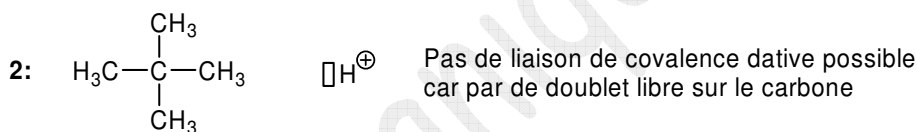
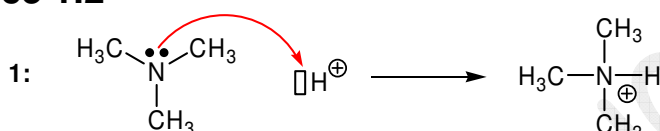
Correction des exercices complémentaires

Chapitre 1: Etude structurale des molécules organiques

1.1 Exercice 1.1

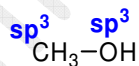
Nombre d'électrons de valence : fluor (7), silicium (4), bore (3), soufre (6), phosphore (5).

1.2 Exercice 1.2

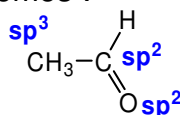


1.3 Exercice 1.3

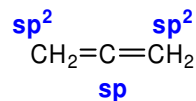
Hybridation des carbones et des hétéroatomes :



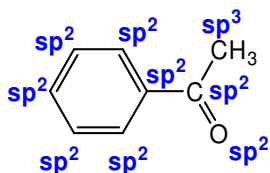
1



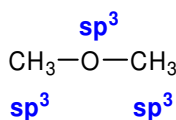
2



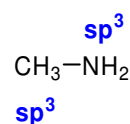
3



4



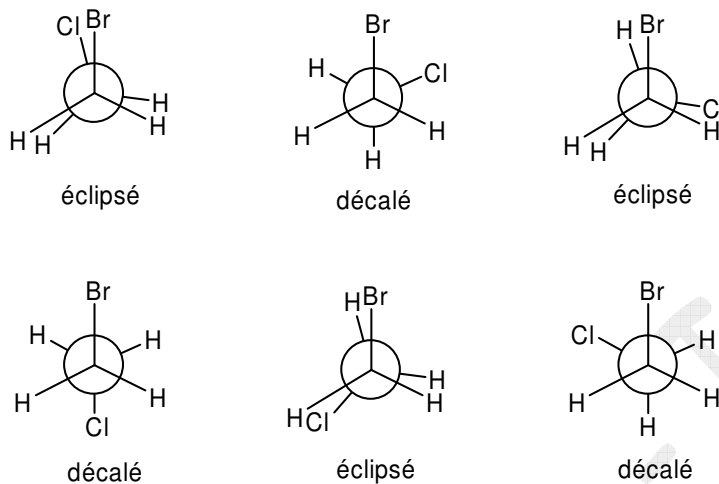
5



6

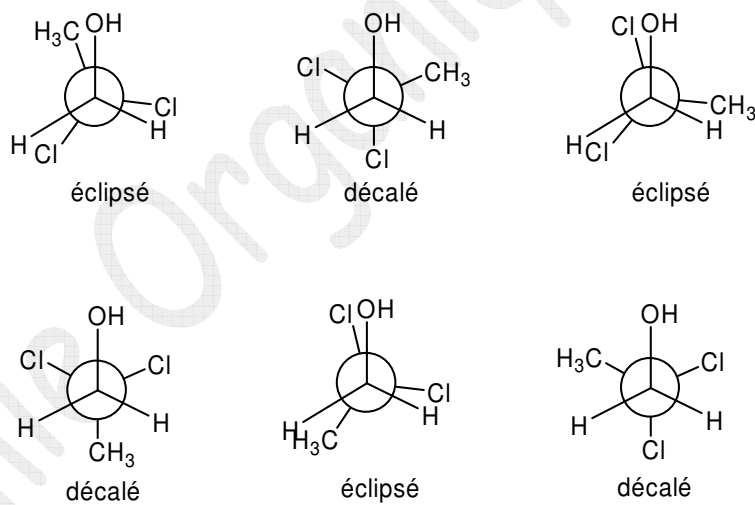
1.4 Exercice 1.4

a) 1-bromo-2-chloroéthane :

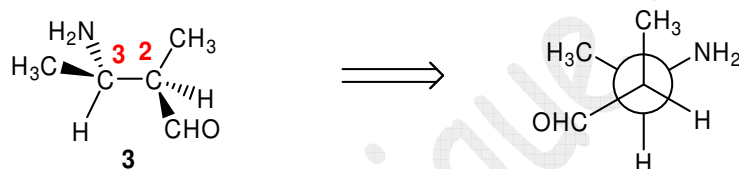
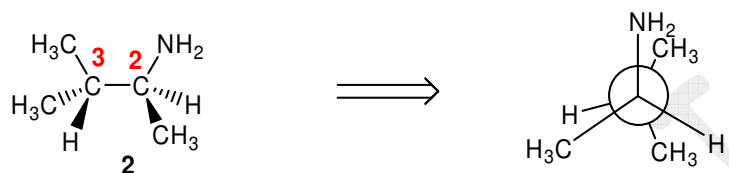
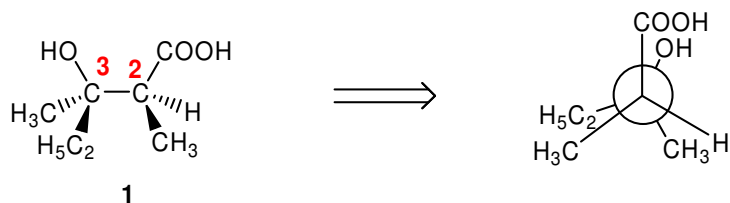


Pour la clarté du schéma, dans les conformations éclipsées les atomes ne sont pas représentés exactement les uns derrière les autres.

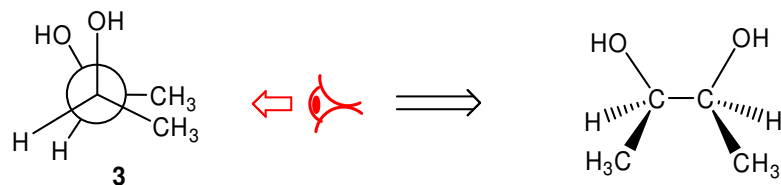
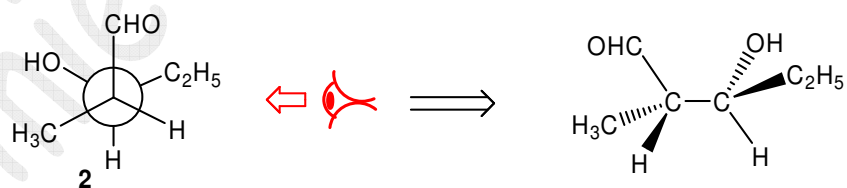
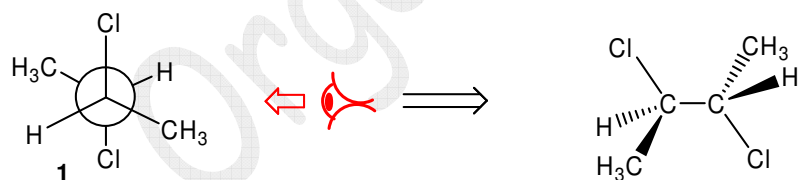
b) 2,2-dichloropropanol :



1.5 Exercice 1.5



1.6 Exercice 1.6



Dans cette correction, on a choisi arbitrairement de « regarder » les molécules par la gauche, on aurait pu également choisir de les « regarder » par la droite.

1.7 Exercice 1.7

