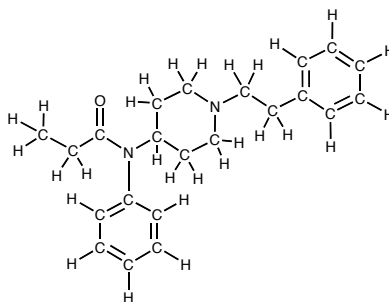


CHIMIE ORGANIQUE

Solutions Exercice I

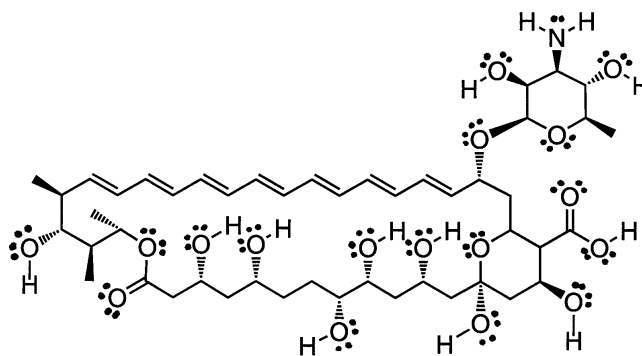
1. a) MEDECINE
b) Amide (8), acide carboxylique (5), thiol (1), sulfure (1), amine (1).
c) **c** : sp^3 , **d** : sp^2 .
d) **a** : $\sim 120^\circ$, **b** : $\sim 109^\circ$.

2. a)



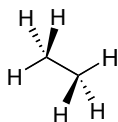
b) $C_{22}H_{28}N_2O$, c) 336,47

3. a) Alcool (9), alcène (7), lactone (1, = ester cyclique), acide carboxylique (1), amine (1), hémiacétal (1), acétal (1).
b) 35 (voir figure), c) $C_{47}H_{73}NO_{17}$

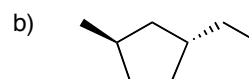
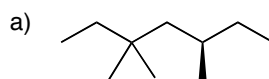


4. a) $1s^2 2s^2 2p^2$ b) $1s^2 2s^2 2p^4$ c) $1s^2 2s^2 2p^1$
d) $1s^2 2s^2 2p^6 3s^2 3p^6$

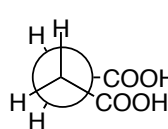
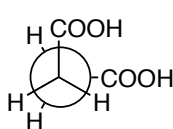
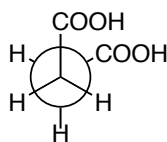
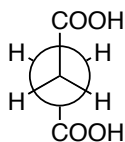
5.



6.



7.



La stabilité décroît de gauche à droite

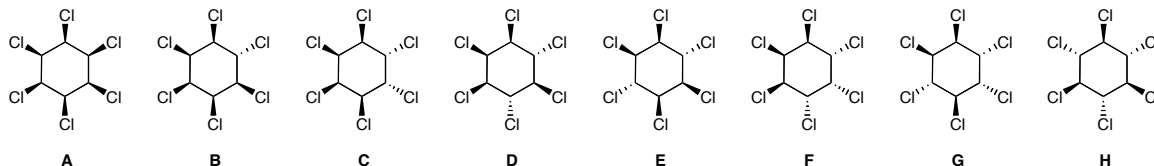
8. E

CHIMIE ORGANIQUE

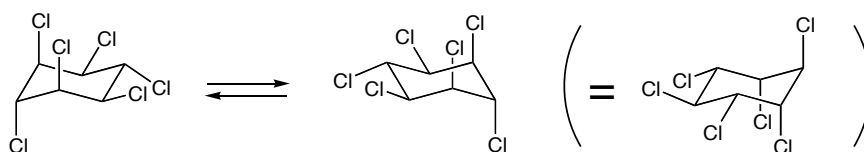
Solutions Exercice II



2.



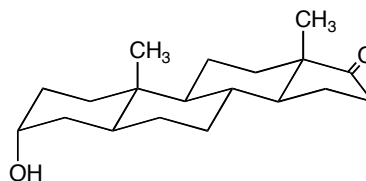
3.



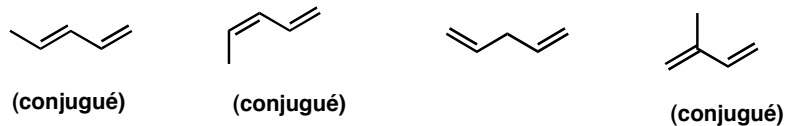
Chacune des deux structures possède trois substituants chlore en équatorial et trois autres en axial. Ces deux conformères sont donc énergétiquement équivalents.

4.

- a) Cétone (1), alcool (1).
b) C₁₉H₃₀O₂
c) -OH : axiale, -CH₃ : 2 x axiale.



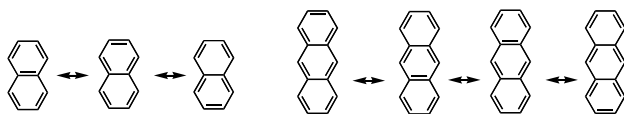
5.



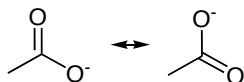
6.

(Z)-5, (Z)-7, (Z)-9, (Z)-11, (E)-13

7.



8.



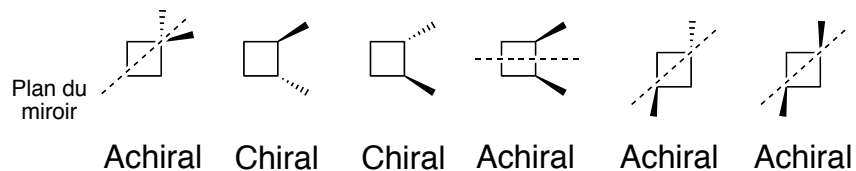
9. D

10. + - - -

CHIMIE ORGANIQUE

Solutions Exercice III

1.



2. 2 : 2*S*,3*S*, 3 : 2*R*,3*S*, 4 : 2*R*,3*R*, 5 : 2*S*,3*S*.

2-3 : diastéréoisomères

2-4 : énantiomères

2-5 : identiques

3-4 : diastéréoisomères

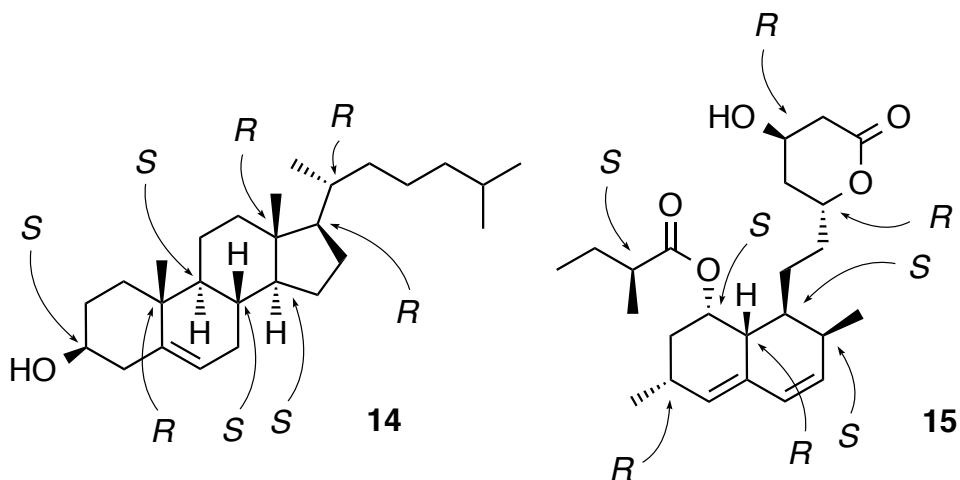
3-5 : diastéréoisomères

4-5 : énantiomères

3. 6 : méso, 7 : (*RR*), 8 : (*SS*).

4. 10

5.



6. 16

7. B

CHIMIE ORGANIQUE

Solutions Exercice IV

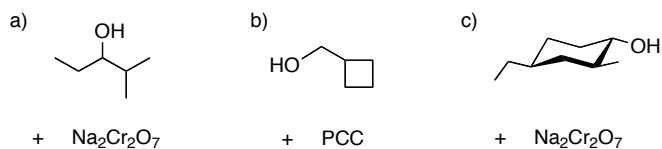
1. i) $A > B > C$. ii) Valine et isoleucine

2. a) $2 > 4 > 3 > 1$

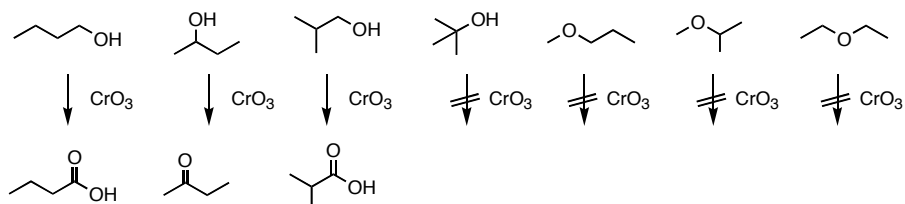
b) 2, 3, 4

3. Non

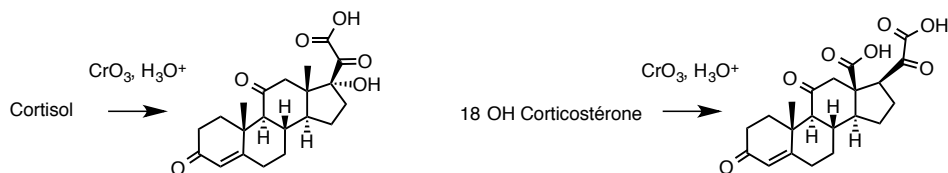
4.



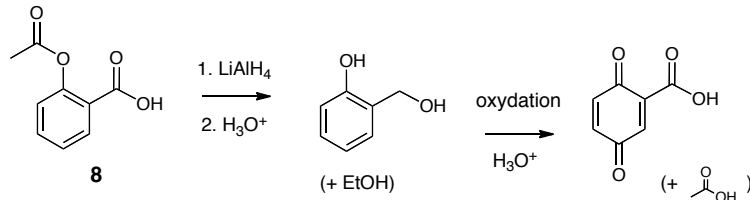
5.



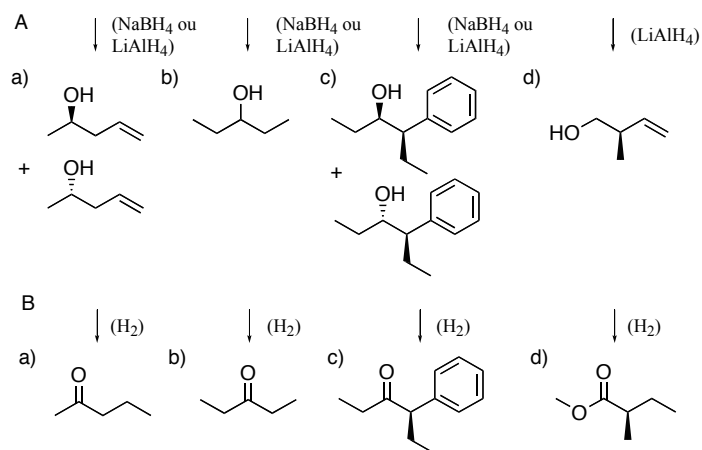
6.



7.



8.



9.
10.

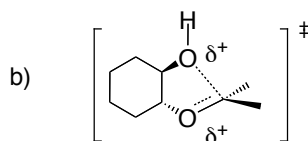
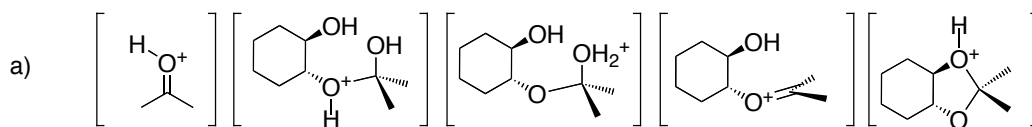
E
C

CHIMIE ORGANIQUE

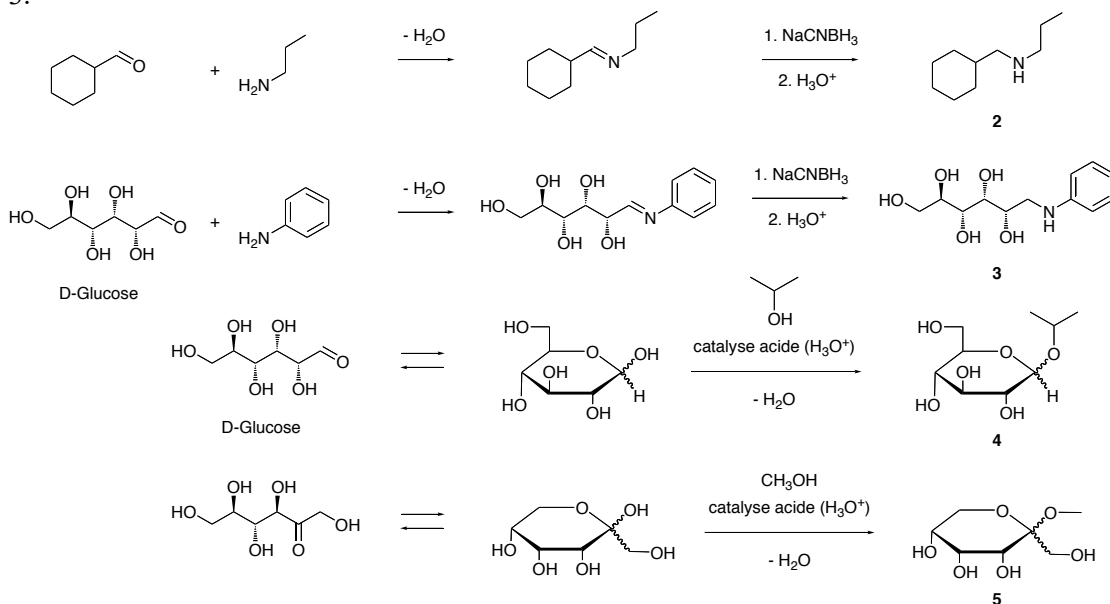
Solutions Exercice V

1. C

2.



3.

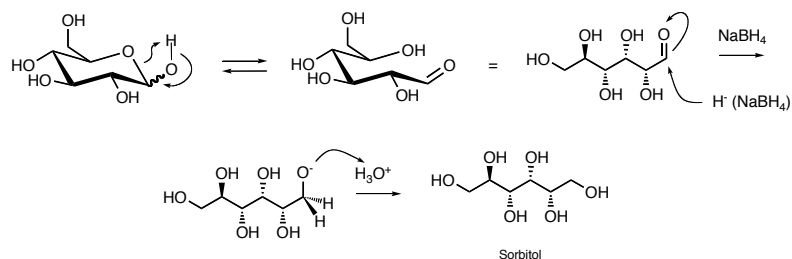
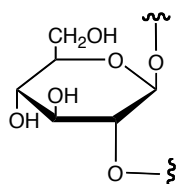


4. **A : R, B : R, C : S.**

5. a) **A : oui, B : non, C : oui.** b) **A : L, B : -, C : Y.** c) **A : non, B : non, C : oui.**

6. a) β -D-glucopyranose. b)

7.

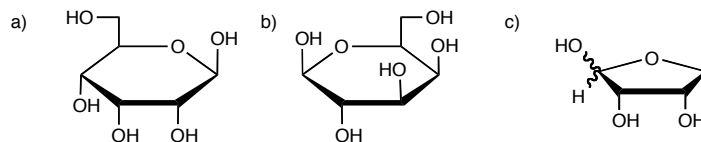


8. + + - +

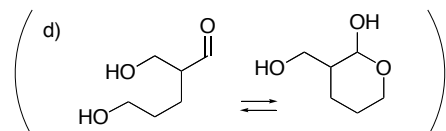
CHIMIE ORGANIQUE

Solutions Exercice VI

1.



2. - - - +



3. a) H⁻ (NaBH₄), b) H₂O, c) NH₂CH₃, d) CH₃SH

4.

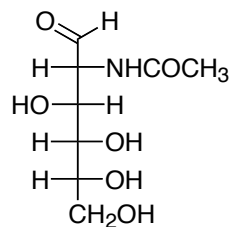
A ; α-D-glucopyranose, avec -NHCOCH₃ à la place de -OH en position 2.

B ; β-D-galactopyranose.

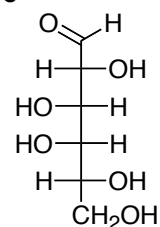
C ; α-D-galactopyranose.

D ; α-L-galactopyranose, avec -H à la place -OH en position 6.

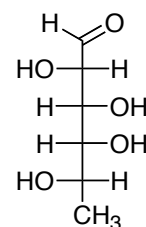
A



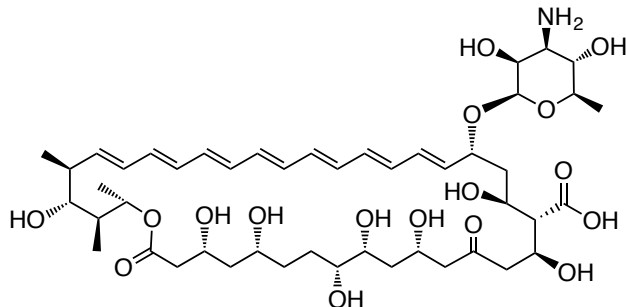
B=C



D



5.

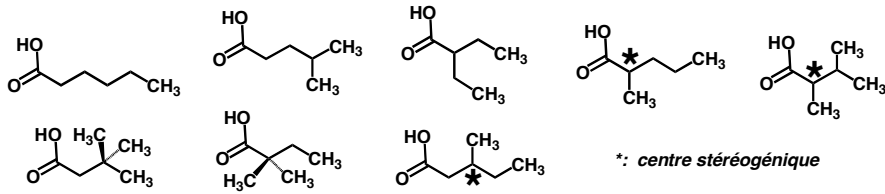


6. B

CHIMIE ORGANIQUE

Solutions Exercice VII

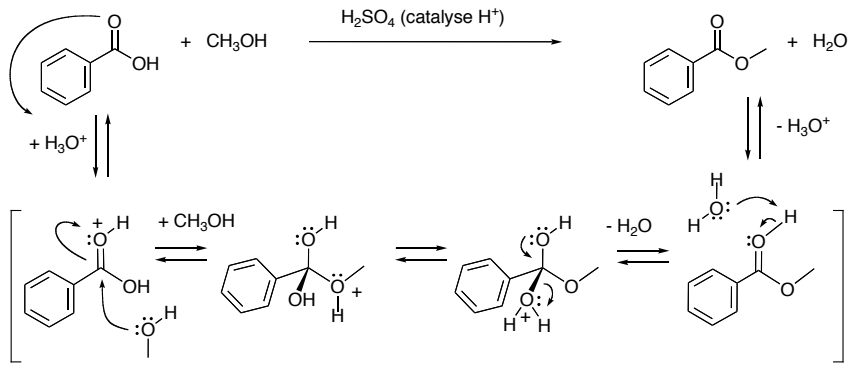
1.



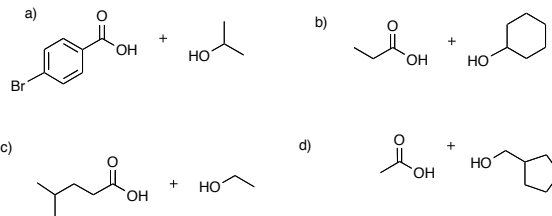
2.

1 et 4 3. a) l'acide tartrique. b) cyclohexanol < phénol < acide acétique ≈ acide benzoïque

4.



5.



6. 9 > 11

7. - - + +

8. A est correct.

