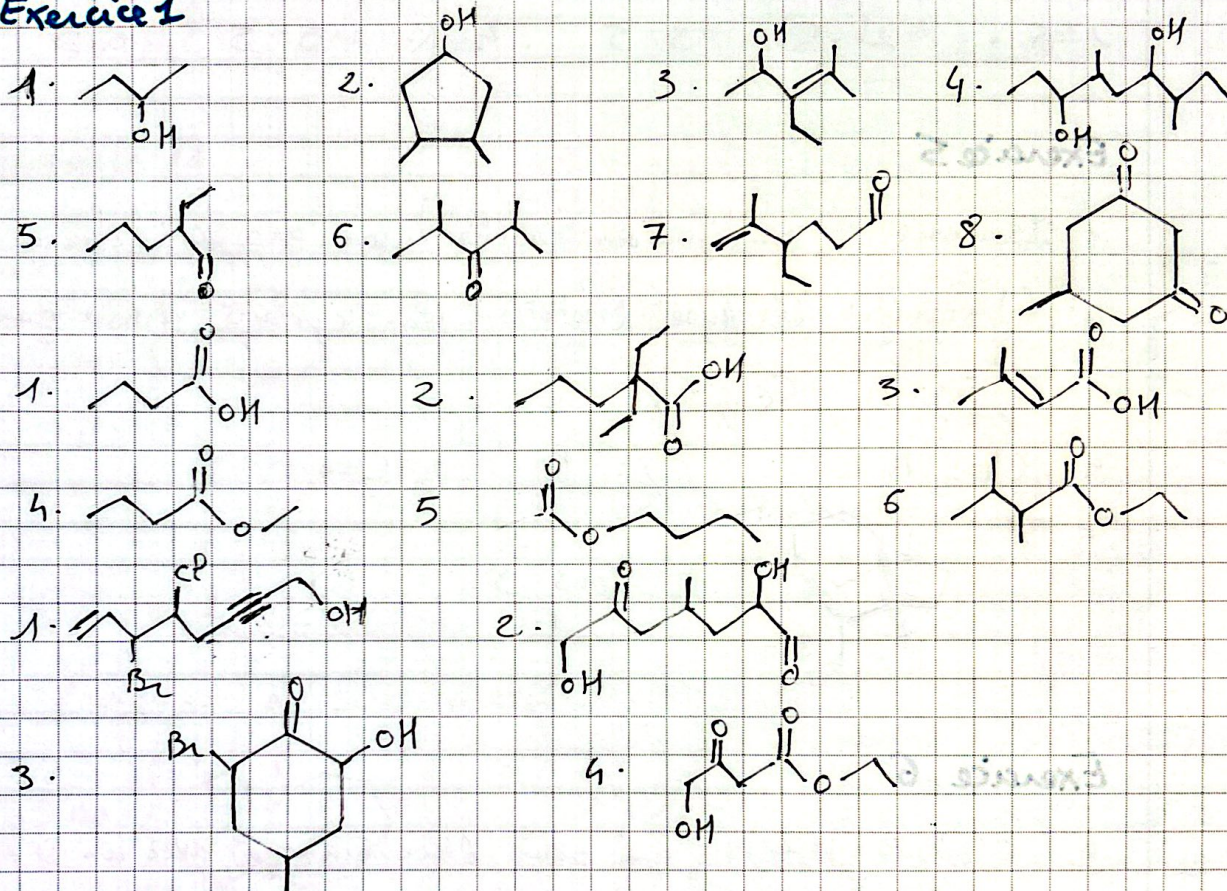


Partie 4: analyse en chimie organique

* Uniquement s'il s'agit d'un examen.

Exercice 1



Exercice 2

1. $C_x H_y O_3$

$$\%C = x \frac{M_C}{M} \Rightarrow x = \frac{\%C \times M}{M_C} = \frac{0,7303 \times 230,3}{12} = 14$$

$$\%H = y \frac{M_H}{M} \Rightarrow y = \frac{0,2085 \times 230,3}{1} = 14$$

$$z = 3$$

$$\Rightarrow C_{14}H_{14}O_3$$

2. $H_6Cl_2N_2Pt$

3. $C_{13}H_{10}O_9N_4S_2Li_2$

N°

.../...

Il est interdit aux candidats de signer leur composition ou d'y mettre un signe quelconque pouvant indiquer sa provenance.

Exercice 3

mol.	1	2	3	4	5	6	7	8	9	10
chiral?	Non	Oui	Non	Oui	Non	Oui	Oui	Non	Oui	Non

↳ plan sym

Exercice 4

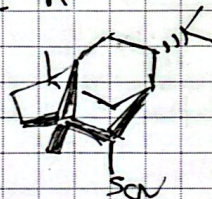
1. E 2. X 3. Z 4. E 5. E-Z 6. Z
7. X-Z-E 8. Z

1. S 2. R 3. S 4. R 5. S 6. S 7. S

Exercice 5

1. Isomérie de constitution (position) car grp SCN change de place
2. (-) signifie Lévogyre (rotation plan de polaris^g vers la gauche)
3. C₁; C₂; C₃; C₆; C₇; C₉
4. C₁: R C₂: R C₇: R

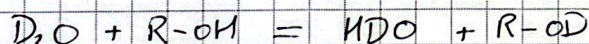
5.



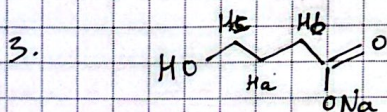
Tous S.

Exercice 6

1. C'est le H de OH qui peut être échangé avec un D de D₂O



2. $3320\text{ cm}^{-1} \Rightarrow O-H$ $2950\text{ cm}^{-1} \Rightarrow C-H$ $1560\text{ cm}^{-1} \Rightarrow C=O$



Exercice 7

Conjugaison + étendue azobenzène > aminoazobenzène > pseudocinnoline

$\Rightarrow \lambda \uparrow$ pour le max d'absorption

Exercice 8

A $\rightarrow$ C' (ν à 1671 cm^{-1}) B $\rightarrow$ A' (ν à 1755 cm^{-1}) C $\rightarrow$ B' (ν à 3321 cm^{-1})

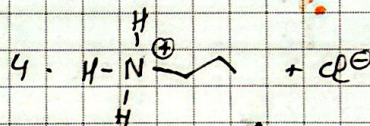
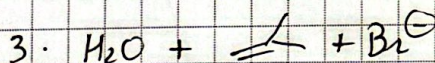
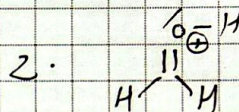
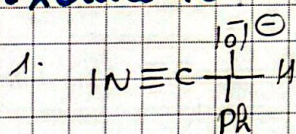
N°
.../...

ne rien
écrire
dans

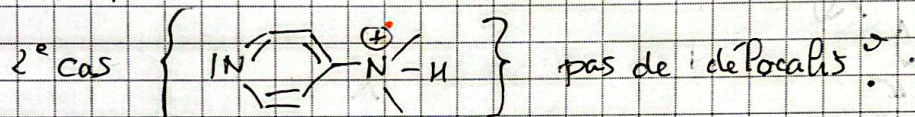
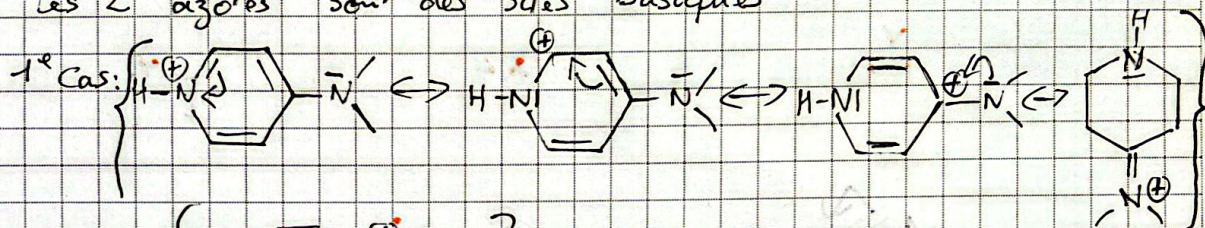
la
partie
barrée

Exercice 9

1. Régiosélectivité
2. diastéréosélectivité
3. Énantiosélectivité
4. chimiosélectivité

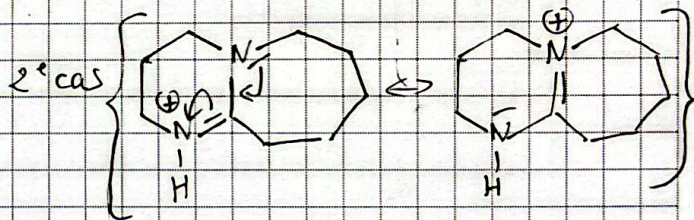
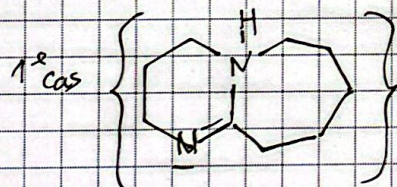
Exercice 10**Exercice 11**

1. Les 2 azotes sont des sites basiques

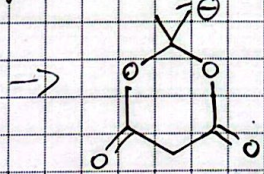
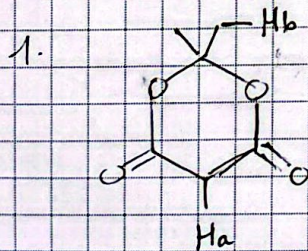


$\Rightarrow$ 1^{er} site plus basique

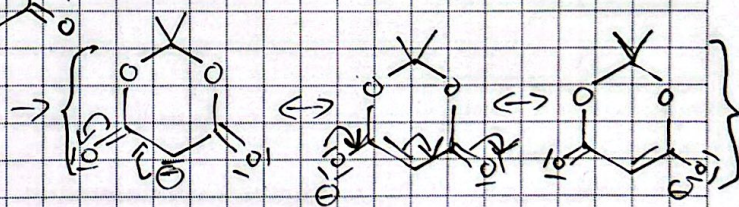
2. 2 azotes en sites possibles.



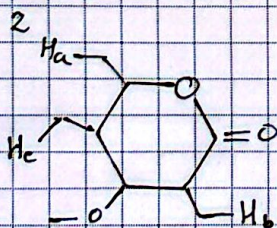
2^{ème} site le plus basique



pas de délocalisation



$\Rightarrow$ 2^{ème} H le plus acide



$\text{H}_a \rightarrow 4$ formes mésomères

$\text{H}_b \rightarrow 3$ " "

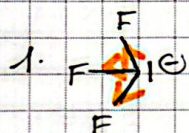
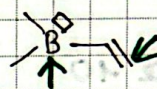
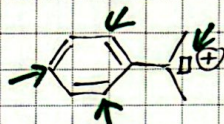
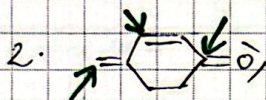
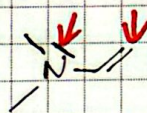
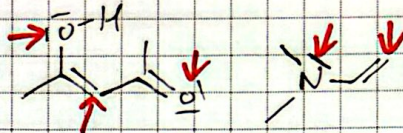
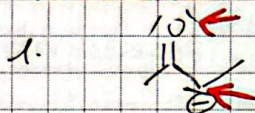
$\text{H}_c \rightarrow 2$ " "

$\text{H}_a \oplus$ acide

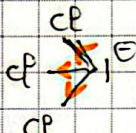
N°

.../...

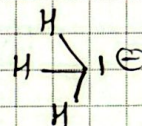
Exercice 12



>



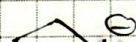
>



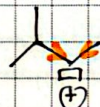
>



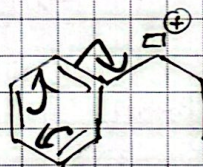
>



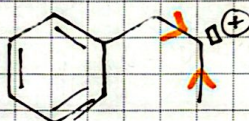
>



>



>



>



Exercice 13

1. $\text{H}_2\text{S} > \text{H}_2\text{O}$ car S $\oplus$ polarisable que O

2. $\text{MeO}^\ominus > \text{MeOH}$ du fait de la charge portée par $\text{O}^\ominus$

3. $\text{NH}_2^\ominus > \text{HO}^\ominus$ car azote moins électro-négatif que O

4. $>$ à cause de l'encombrement stérique

5. $>$ car carboxylate stabilisé par délocalisation de charge

ne rien
écrire
dans

la
partie
barrée

N°

.../...