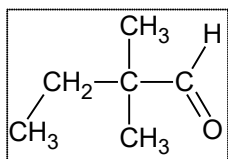
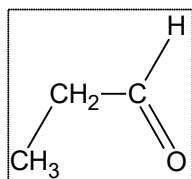
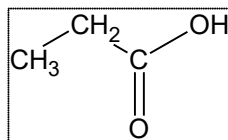
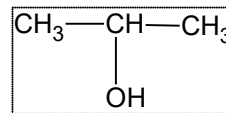
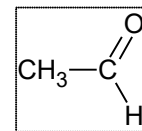
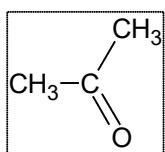
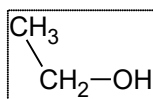
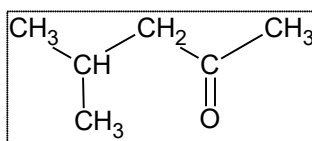
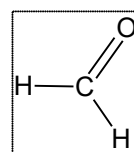
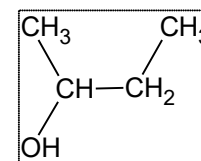
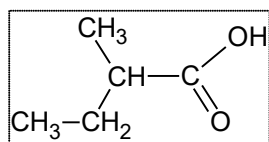
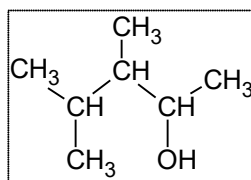
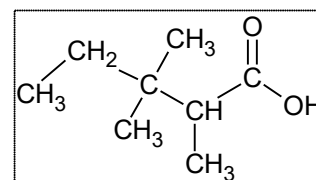
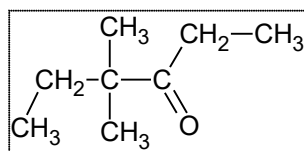
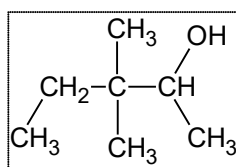
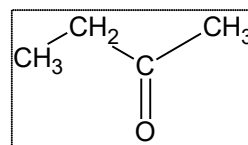
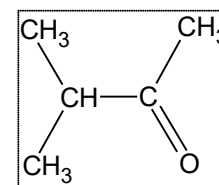
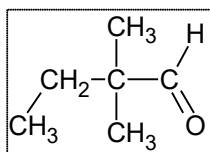
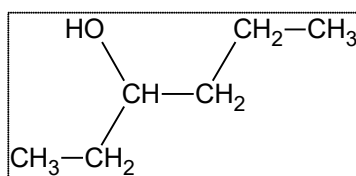
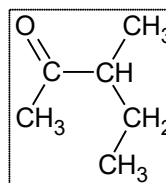
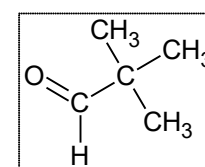
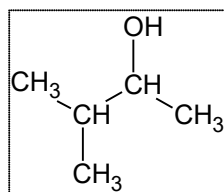
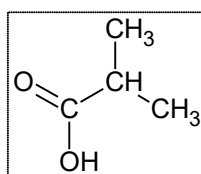
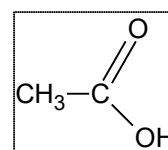
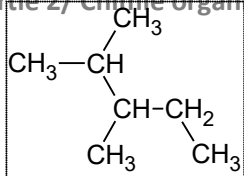


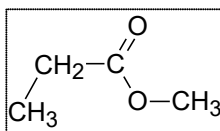
## Les réactions chimiques

### Exercice 1

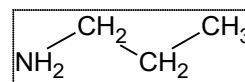
**(1)** 2,2-diméthylbutanal**(2)** propanal**(3)** acide propanoïque**(4)** propan-2-ol**(5)** éthanal**(6)** propanone**(7)** Ethanol**(8)** 4-méthylpentan-2-one**(9)** Méthanal**(10)** Butan-2-ol**(11)** Acide 2-méthylbutanoïque**(12)** 3,4-diméthylpentan-2-ol**(13)** Acide 2,3,3-triméthylpentanoïque**(14)** 4,4-diméthylhexan-3-one**(15)** 3,3-diméthylpentan-2-ol**(16)** Butanone**(17)** Méthylbutanone**(18)** 2,2-diméthylbutanal**(19)** Hexan-3-ol**(20)** 3-méthylpentan-2-one**(21)** Diméthylpropanal**(22)** 3-méthylbutan-2-ol**(23)** Acide méthylpropanoïque**(24)** Acide éthanoïque



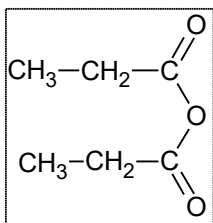
(25) 2,3-diméthylpentane



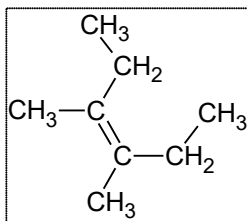
(26) propanoate d'éthyle



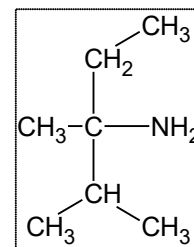
(27) propan-1-amine



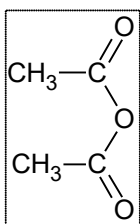
(28) anhydride propanoïque



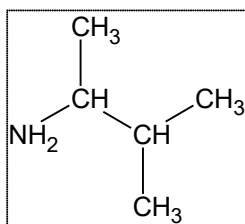
(29) 3,4-diméthylhex-3-ène



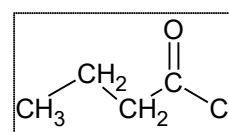
(30) 2,3-diméthylpentan-3-amine



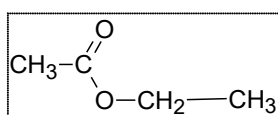
(31) anhydride éthanoïque



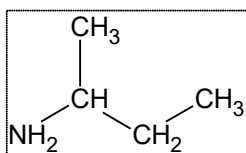
(32) 3-méthylbutan-2-amine



(33) Chlorure de butanoyle

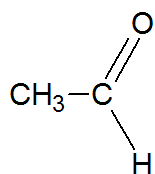


(34) Ethanoate d'éthyle

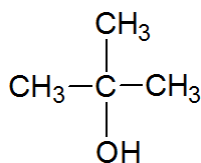


(35) butan-2-amine

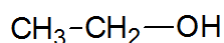
## Exercice 2



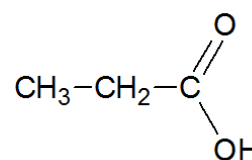
(1) éthanal



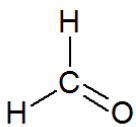
(2) 2-méthylpropan-2-ol



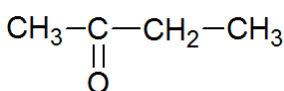
(3) éthanol



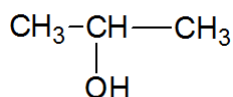
(4) acide propanoïque



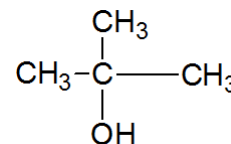
(5) méthanal



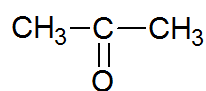
(6) butanone



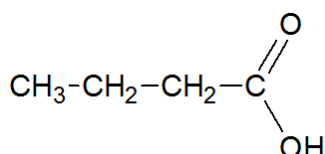
(7) propan-2-ol



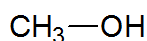
(8) méthylpropan-2-ol



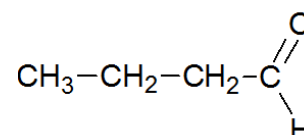
(9) propanone



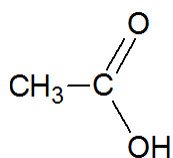
(10) acide butanoïque



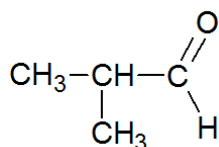
(11) méthanol



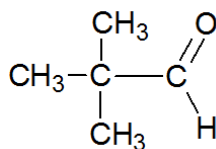
(12) butanal



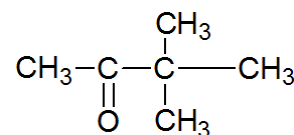
(13) acide éthanoïque



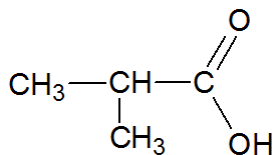
(14) 2-méthylpropanal



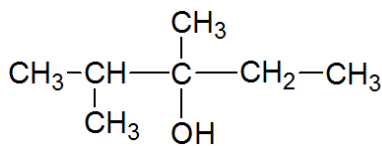
(15) diméthylpropanal



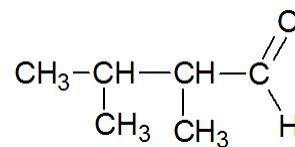
(16) diméthylbutanone



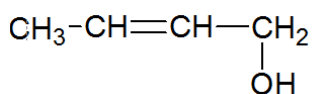
(17) acide méthylpropanoïque



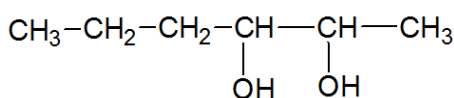
(18) 2,3-diméthylpentan-3-ol



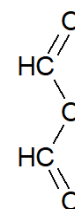
(19) 2,3-diméthylbutanal



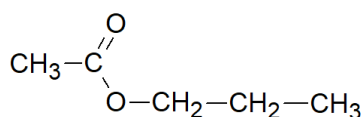
(20) but-2-èn-1-ol



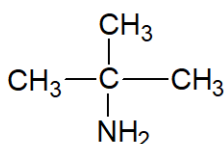
(21) hexan-2,3-diol



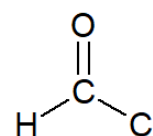
(22) Anhydride méthanoïque



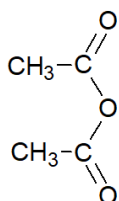
(23) ethanoate de propyle



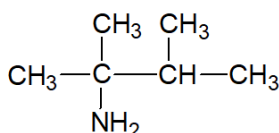
(24) 2- méthylpropan-2-amine



(25) chlorure de méthanoyle



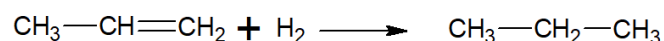
(26) anhydride éthanoïque



(27) 2,3-diméthylbutan-2 amine

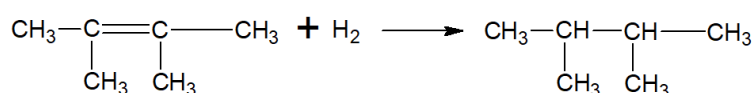
### Exercice 3

1) Hydrogénation du propène : On obtient du **propane**

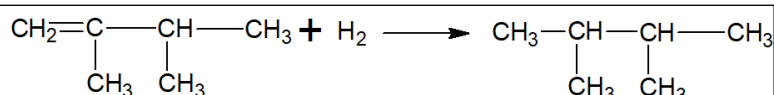


2) Formation du 2,3-diméthylbutane

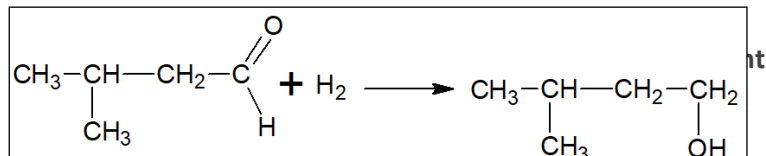
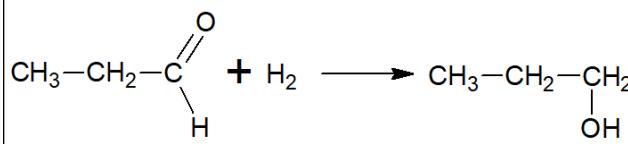
A partir de l'hydrogénation du  
**2,3-diméthylbut-2-ène**



A partir de l'hydrogénation du  
**2,3-diméthylbut-1-ène**

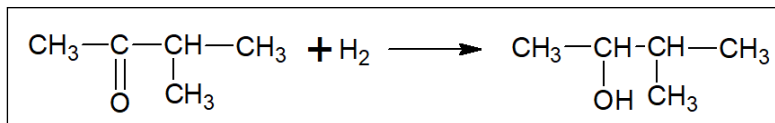
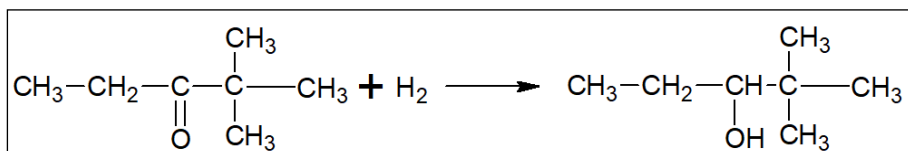
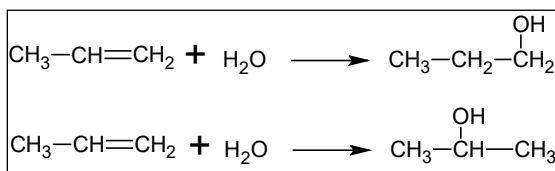


3) Hydrogénation du propanal : On obtient du  
**propan-1-ol**



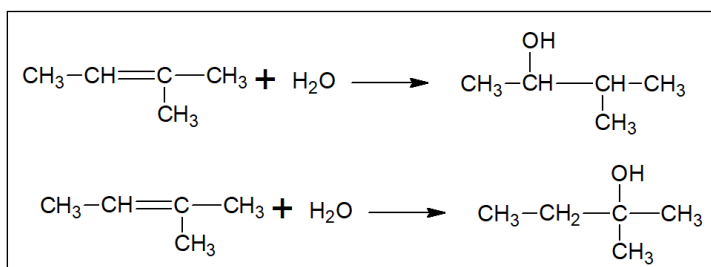
**4) Formation du 3-méthylbutan-1-ol :**

A partir de l'hydrogénation du **3-méthylbutanal**

**5) Hydrogénation de la 3-méthylbutan-2-one :** On obtient le **3-méthylbutan-2-ol****6) Formation du 2,2-diméthylpentan-3-ol :** A partir de la **2,2-diméthylpentan-3-one****Exercice 4****1) Hydratation du propène**

L'hydratation du propène donne

- soit du **propan-1-ol**,
- soit du **propan-2-ol**

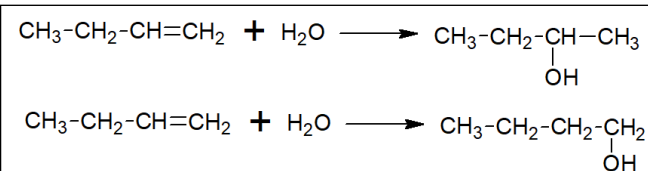
**2) Hydratation du 2-méthylbut-2-ène**

L'hydratation du 2-méthylbut-2-ène donne

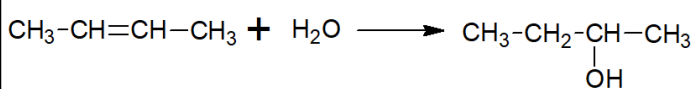
- soit du **3-méthylbutan-2-ol**,
- soit du **2-méthylbutan-2-ol**

**3) Formation du butan-2-ol**

On peut obtenir du butan-2-ol à partir de l'hydratation du **but-1-ène** et du **but-2-ène**.



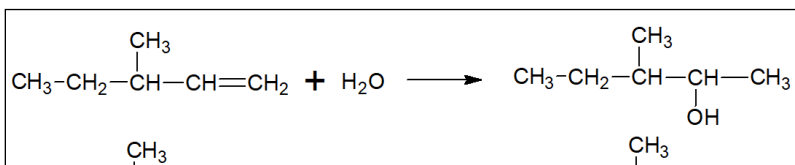
L'hydratation du but-1-ène peut former également du **butan-1-ol**



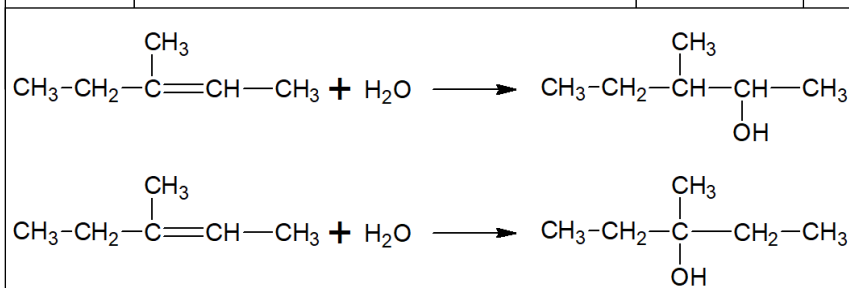
L'hydratation du but-2-ène ne forme que du butan-2-ol

**4) Formation du 3-méthylpentan-2-ol**

On peut obtenir du 3-méthylpentan-2-ol à partir de l'hydratation du **3-méthylpent-1-ène** et du **3-méthylpent-2-ène**



L'hydratation du  
3-méthylpent-1-ène forme  
également du  
**3-méthylpentan-1-ol**

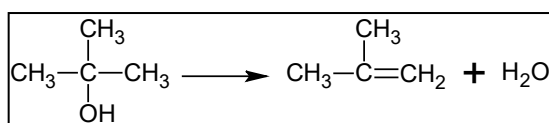


L'hydratation du  
3-méthylpent-2-ène  
forme également du  
**3-méthylpentan-3-ol**

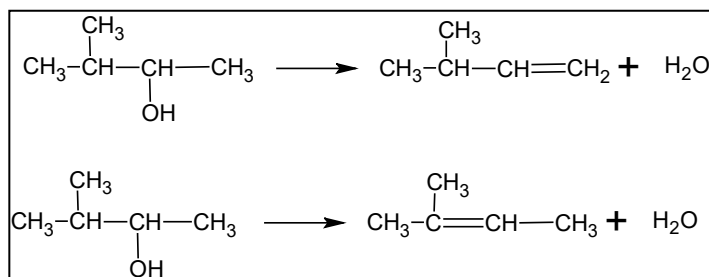
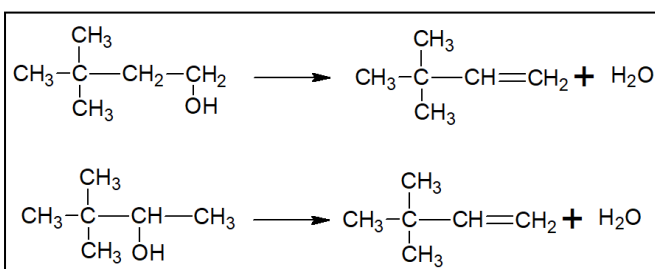
### Exercice 5

#### 1) Déshydratation du 2-méthylpropan-2-ol

La déshydratation du 2-méthylpropan-2-ol conduit à la formation du **2-méthylprop-1-ène** (= méthylpropène)



#### 2) Déshydratation du 3-méthylbutan-2-ol : On obtient du **3-méthylbut-1-ène** ou du **2-méthylbut-2-ène**



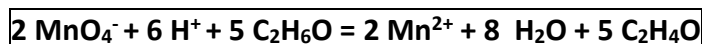
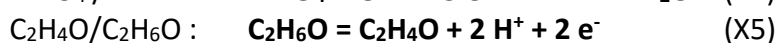
#### 3) Formation du 3,3-diméthylbut-1-ène

A partir de la déshydratation du **3,3-diméthylbutan-1-ol** ou du **3,3-diméthylbutan-2-ol**

### Exercice 6

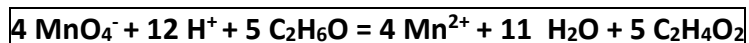
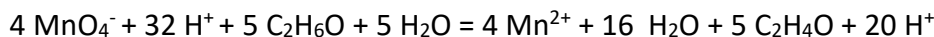
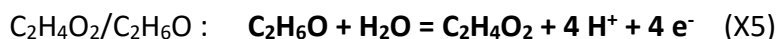
Ethanol	Ethanal	Acide éthanoïque
$\text{CH}_3-\text{CH}_2-\text{OH}$	$\text{CH}_3-\overset{\text{O}}{\parallel}{\text{C}}-\text{H}$	$\text{CH}_3-\overset{\text{O}}{\parallel}{\text{C}}-\text{OH}$
$\text{C}_2\text{H}_6\text{O}$	$\text{C}_2\text{H}_4\text{O}$	$\text{C}_2\text{H}_4\text{O}_2$

#### Oxydation de l'éthanol en éthanal



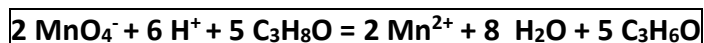
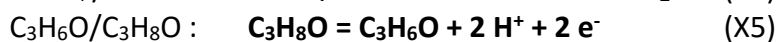
#### Oxydation de l'éthanol en acide éthanoïque



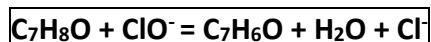
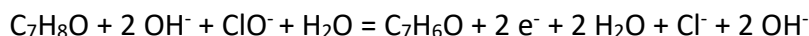
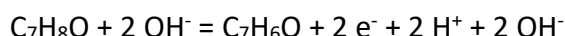
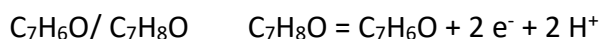
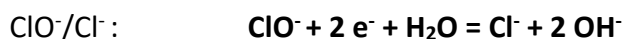


Propan-2-ol	propanone
$\begin{array}{c} \text{OH} \\   \\ \text{CH}_3-\text{CH}-\text{CH}_3 \end{array}$	$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\ \diagdown \quad / \\ \text{C} \\    \\ \text{O} \end{array}$
C <sub>3</sub> H <sub>8</sub> O	C <sub>3</sub> H <sub>6</sub> O

Oxydation du propan-2-ol par la solution de permanganate de potassium

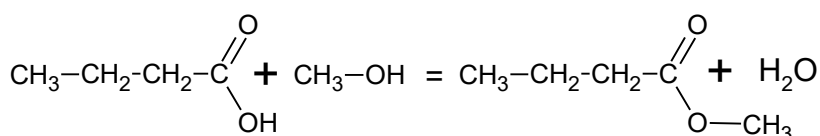


Oxydation de l'alcool benzylique par l'ion hypochlorite en milieu basique

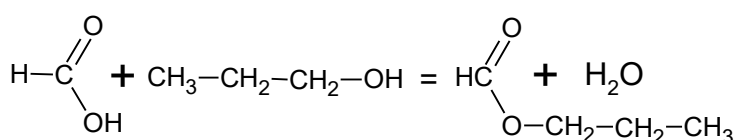


### Exercice 7

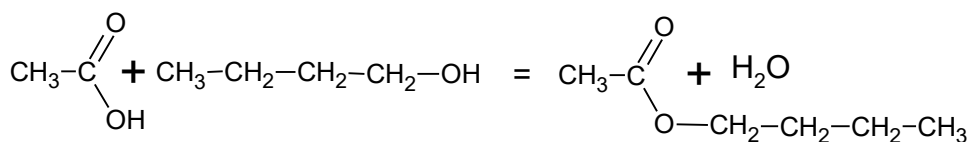
Réaction d'estérification entre l'acide butanoïque et le méthanol : il se forme du **butanoate de méthyle**



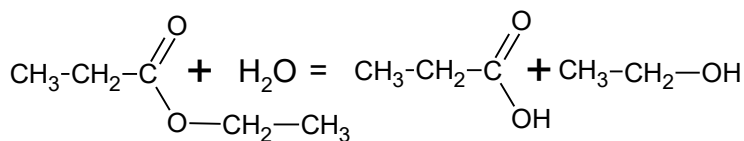
Réaction d'estérification entre l'acide méthanoïque et le propan-1-ol : il se forme du **méthanoate de propyle**



Réaction qui permet de synthétiser l'éthanoate de butyle : à partir de l'acide éthanoïque et du **butan-1-ol**



Réaction d'hydrolyse du propanoate d'éthyle : il se forme de l'**acide propanoïque** et de l'**éthanol**



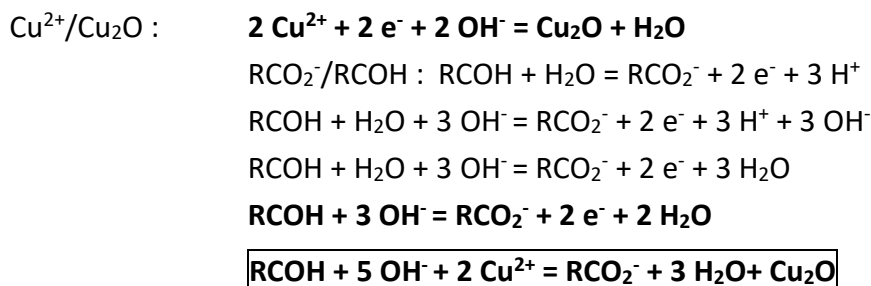
### Exercice 8

#### Test à la liqueur de Fehling

La liqueur de Fehling, contenant les ions  $\text{Cu}^{2+}$ , réagit avec une substance réductrice : donc elle contient une substance oxydante.

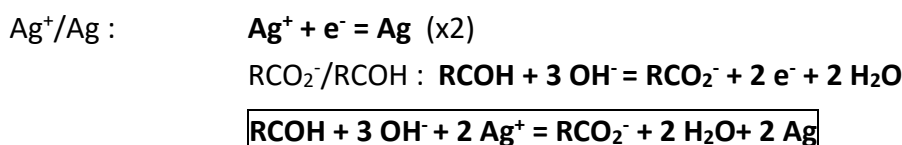
Couple oxydant/réducteur :  $\text{Cu}^{2+}/\text{Cu}_2\text{O}$

Equation de la réaction en milieu basique



#### Test au réactif de Tollens

Equation de la réaction en milieu basique



### Exercice 9

- |                              |                               |
|------------------------------|-------------------------------|
| (1) Réaction de substitution | (7) Réaction d'addition       |
| (2) Réaction d'élimination   | (8) Réaction d'élimination    |
| (3) Réaction d'addition      | (9) Réaction de substitution  |
| (4) Réaction d'addition      | (10) Réaction de substitution |
| (5) Réaction d'addition      |                               |
| (6) Réaction de substitution |                               |