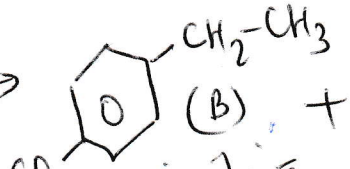
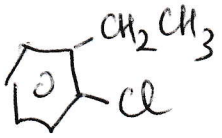
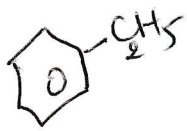
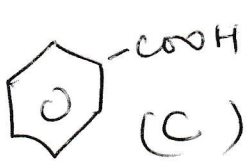
Série de TD n°4
corrigé

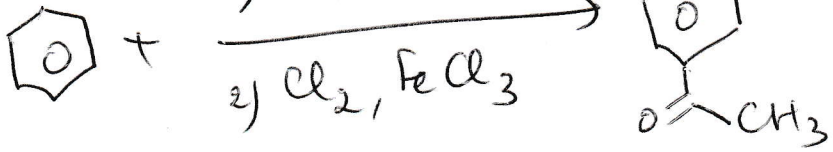
Exo 1 :

1- $C_6H_5-CH_2-CH_3 \xrightarrow[\Delta]{Cl_2/hv} C_6H_5-\underset{Cl}{CH}-CH_3$ (A) ; substitution radicalaire sur chaine latérale

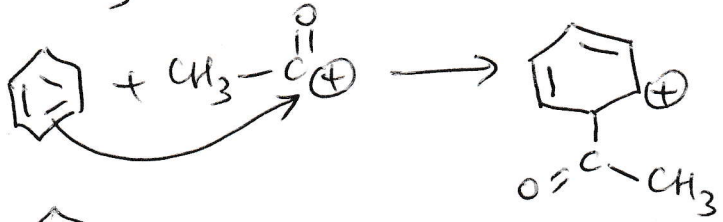
2- $C_6H_5-CH_2-CH_3 \xrightarrow[AlCl_3]{Cl_2}$  (B) majoritaire + 

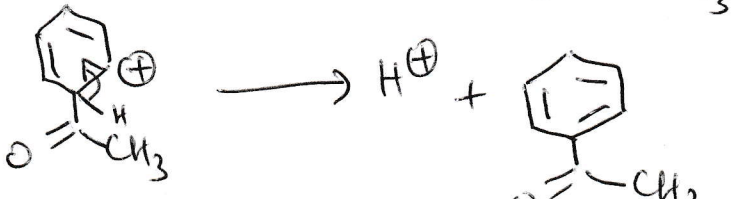
3-  $\xrightarrow[fort]{oxydant}$  (C)

Exo 2 :

1- 

2-a). 

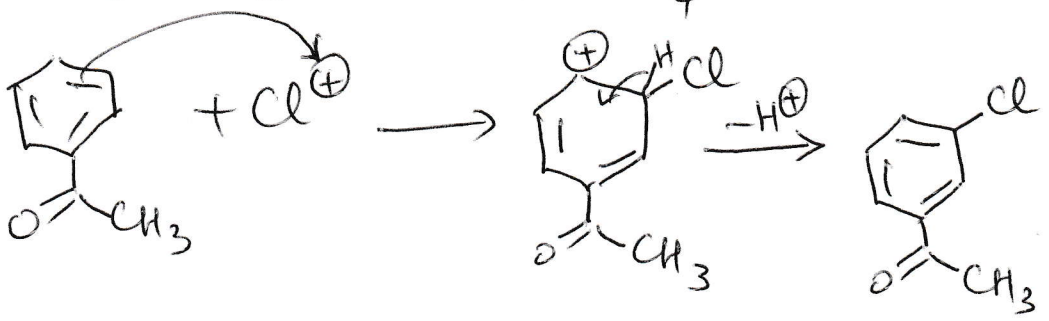
b). 



c) $H^{\oplus} + AlCl_4^{\ominus} \longrightarrow HCl + AlCl_3$

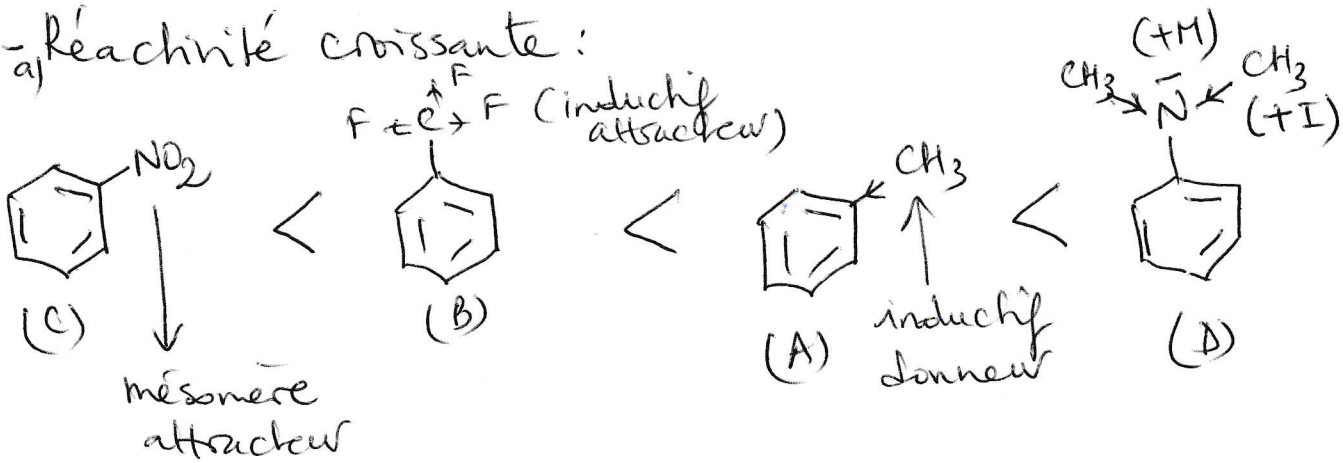
2). a). $FeCl_3 + Cl_2 \rightarrow Cl^{\oplus} + FeCl_4^{\ominus}$

b).



c). $H^{\oplus} + FeCl_4^{\ominus} \longrightarrow HCl + FeCl_3$

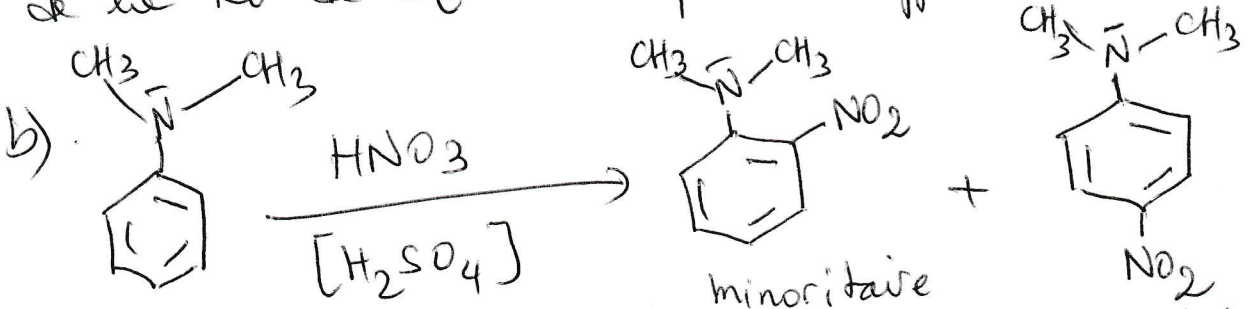
3-a) Réactivité croissante :



C < B < A < D

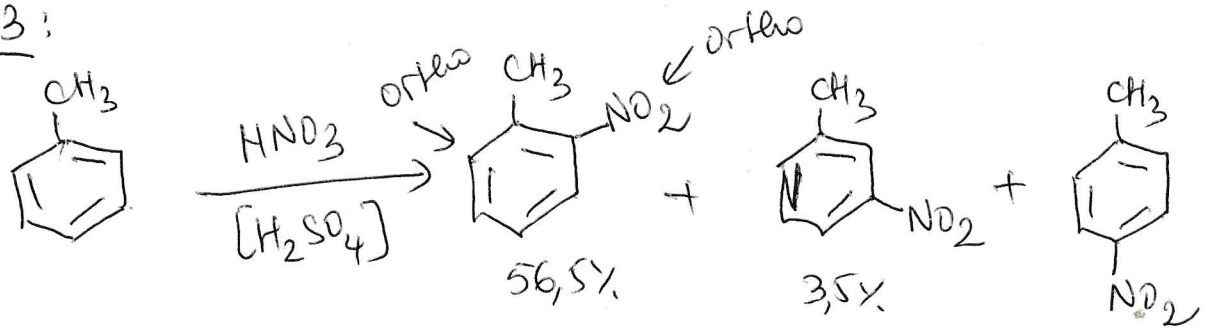
Les effets attracteurs désactivent le cycle vis-à-vis de la RS de SE alors que les effets donneurs d'activen

b)



plus stable car les 2 groupements sont plus éloignés (moins d'encombrement stérique).

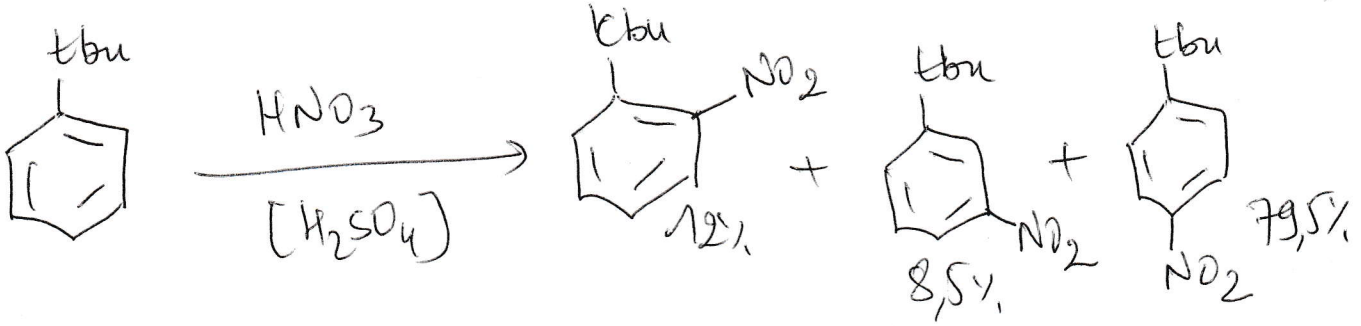
Exo3 :



$V_R = \frac{V_{C_6H_5R_1}}{C_6H_6} = 24 > 1 \Rightarrow V_{Benzène} < V_{C_6H_5-CH_3}$

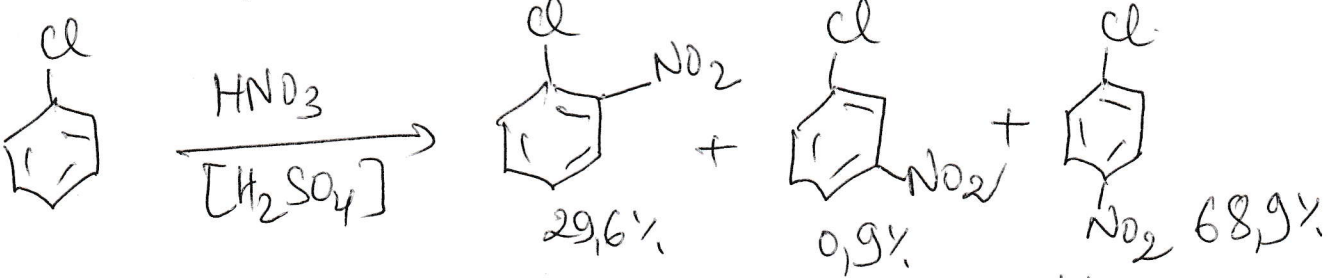
car $-CH_3$ ($+I$) : activant.

Position : ortho (2 fois statistiquement) mais position para plus (active) (encombrement)



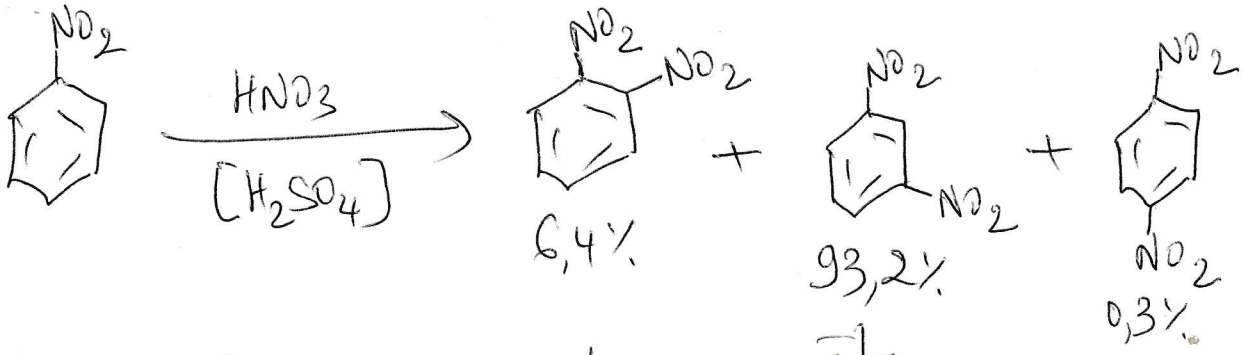
tbu : très encombré
position para nettement plus active.

$V_R = 16 > 1$ tbu : donneur activant.



$V_R \ll 1$ Cl : effet inductif attractif : désactivant

Cl : (+M) $\Rightarrow$ oriente en ortho et para mais à cause de l'encombrement Para est majoritaire.



$-NO_2$ $(-\eta)$: oriente en méta.

$v_R = 10^{-7} \ll 1$ car NO_2 $(-\eta)$: très désactivant car il appauvrit le cycle en e^- /benzène