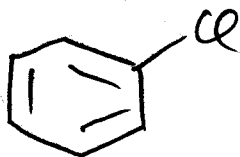


# CHEM 30C: Problem Set 2

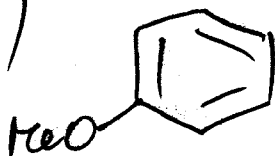
## 1. Reactions

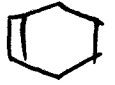
a)



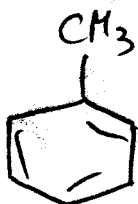
- 1) NaOH, heat, pressure
- 2)  $\text{CO}_2$ , NaOH, heat  
pressure  $\rightarrow$
- 3) LiAlH<sub>4</sub>
- 4) MeI, NaH (2 eq.)
- 5) H<sub>2</sub>, Pd-C

b)

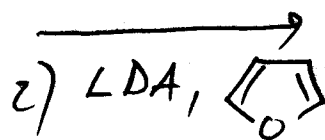


- 1) , H<sup>+</sup>  
 $\rightarrow$
- 2) O<sub>2</sub>, light
- 3) H<sup>+</sup>
- 4) CrO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>

c)



- 1) Br<sub>2</sub>/Fe

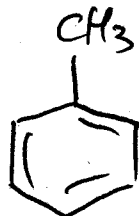


d)

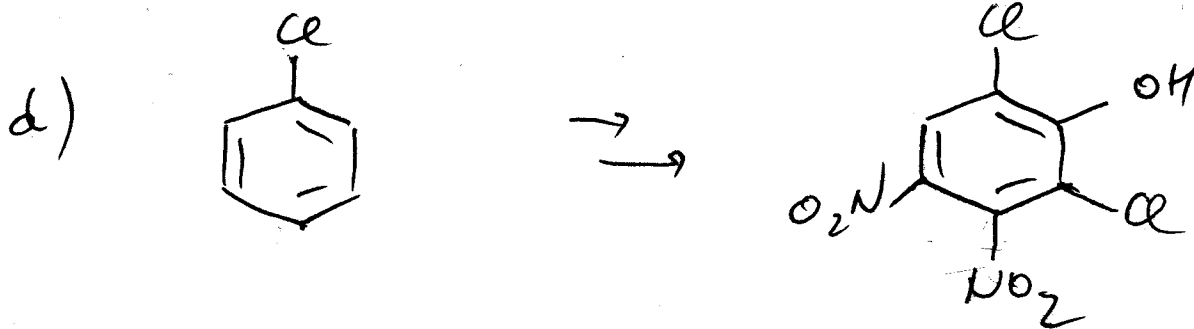
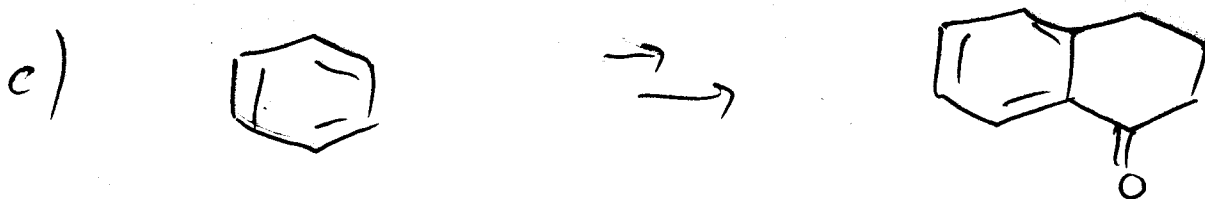
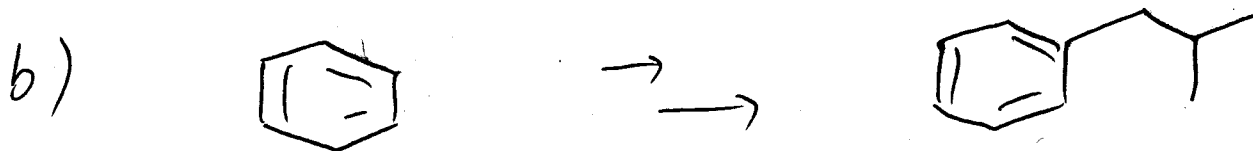
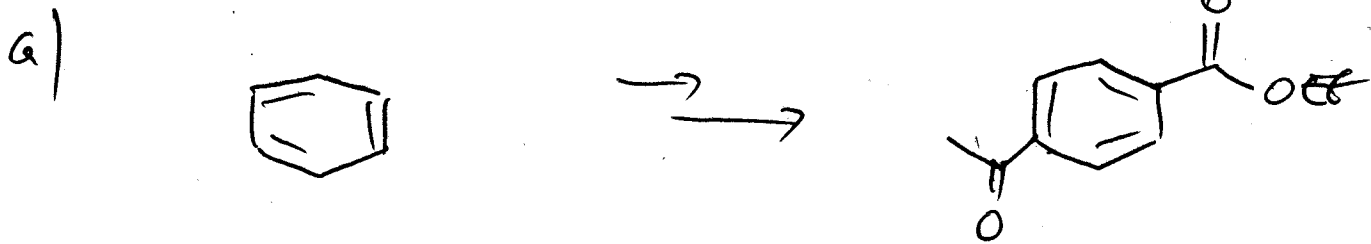


- 1) HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>
- 2) Br<sub>2</sub>, Fe  
 $\rightarrow$
- 3) NH<sub>3</sub>
- 4) NaNO<sub>2</sub>, HCl
- 5) HBF<sub>4</sub>, then heat

e)



- 1) HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>
- 2) H<sub>2</sub>/Pd-C
- 3) NaNO<sub>2</sub>, HCl  
 $\rightarrow$
- 4) Cu<sub>2</sub>O
- 5) CO<sub>2</sub>, NaOH, pressure

2. Synthesis3. Mechanism