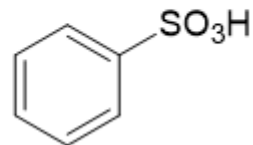
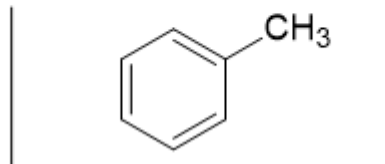
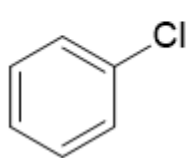
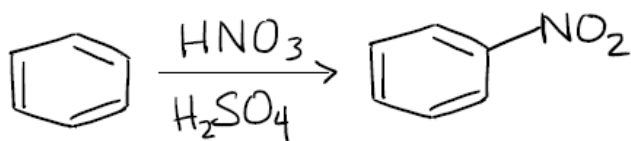




- 1 Provide the reagents needed to convert benzene into each of the given target compounds.



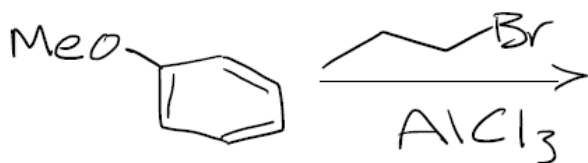
- 2 Which of the following is NOT a likely step in the mechanism of the following reaction?



3

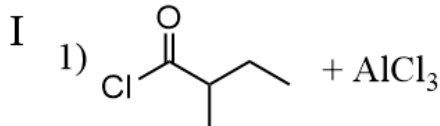
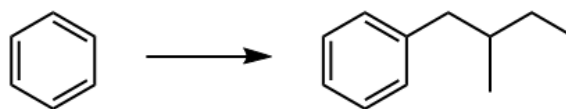
Predict the major product and provide a mechanism for the following reaction.

4



5

Provide the reagents necessary to transform the given starting material into the desired product.



2) $\text{Zn}(\text{Hg}), \text{HCl}$

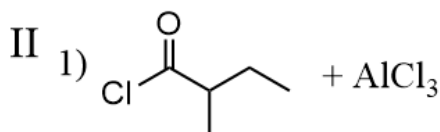
A) I only

B) II only

C) III only

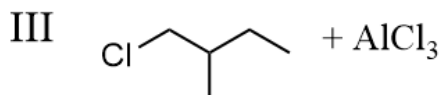
D) I and II only

E) I, II and III



2) $\text{NH}_2\text{NH}_2, \text{TsOH}$

3) $\text{KOH}, \text{H}_2\text{O}, \text{heat}$



6

Provide the reagents necessary to transform the given starting material into the desired product.

