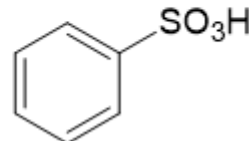
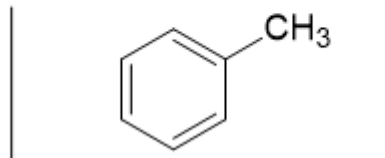
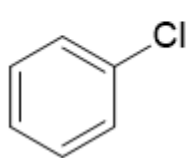
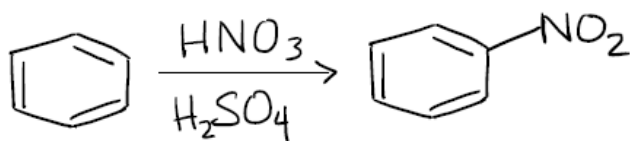




- 1 Provide the reagents needed to convert benzene into each of the given target compounds.



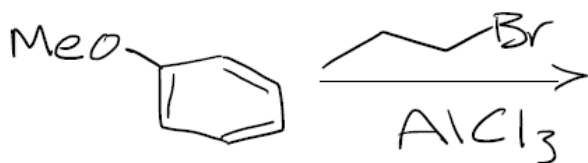
- 2 Which of the following is NOT a likely step in the mechanism of the following reaction?



3

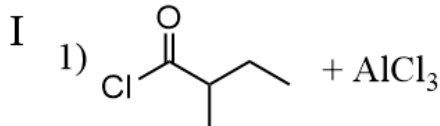
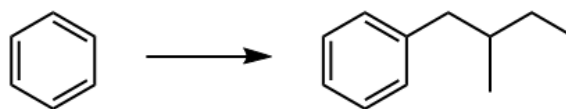
Predict the major product and provide a mechanism for the following reaction.

4



5

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



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

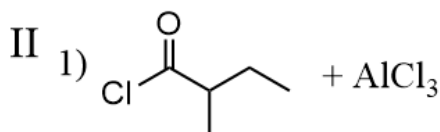
A) I only

B) II only

C) III only

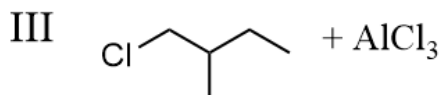
D) I and II only

E) I, II and III



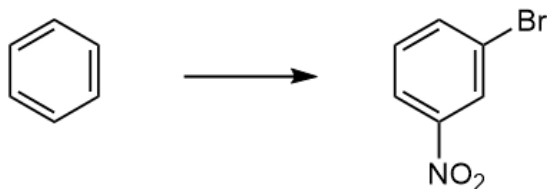
2) $\text{NH}_2\text{NH}_2, \text{TsOH}$

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



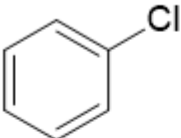
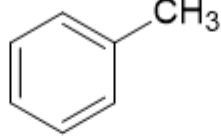
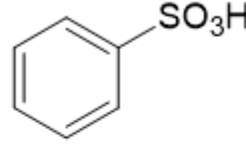
6

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



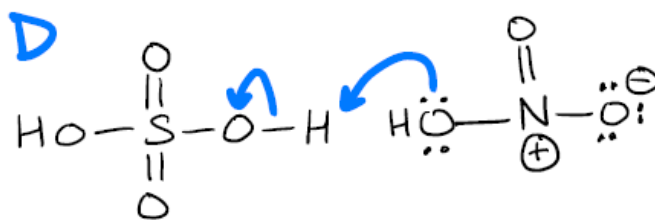
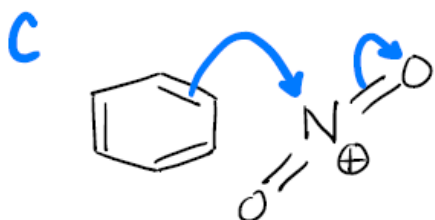
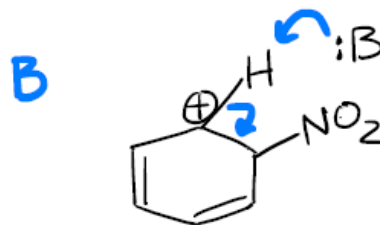
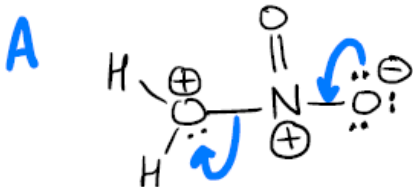
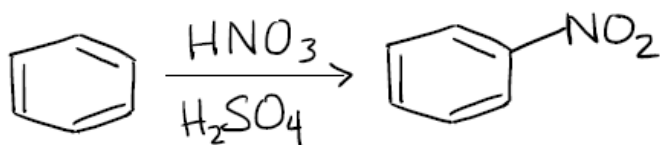
1

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

		
A) $\text{Cl}_2, \text{FeCl}_3$	MeMgBr	$\text{HNO}_3, \text{H}_2\text{SO}_4$
B) $\text{Cl}_2, \text{FeCl}_3$	$\text{MeI}, \text{AlCl}_3$	$\text{SO}_3, \text{H}_2\text{SO}_4$
C) HCl, NaCl	MeMgBr	$\text{SO}_3, \text{H}_2\text{SO}_4$
D) HCl, NaCl	$\text{MeI}, \text{AlCl}_3$	$\text{HNO}_3, \text{H}_2\text{SO}_4$
E) HCl, NaCl	$\text{MeI}, \text{AlCl}_3$	$\text{SO}_3, \text{H}_2\text{SO}_4$

2

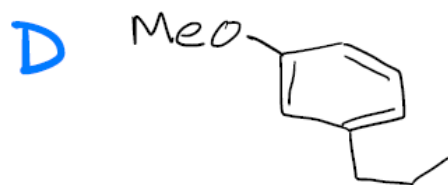
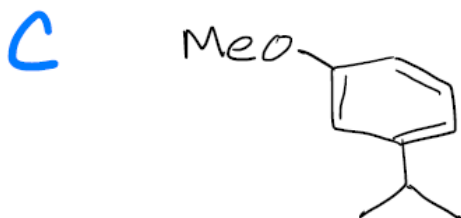
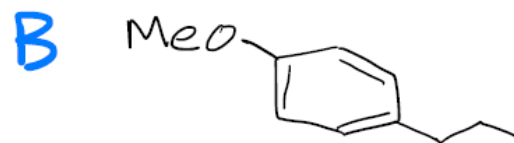
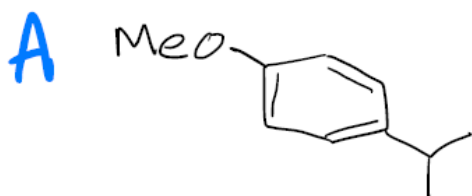
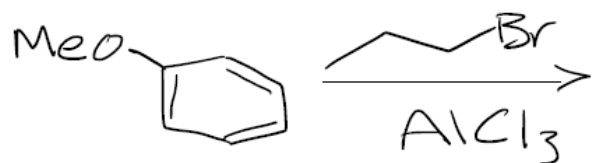
Which of the following is NOT a likely step in the mechanism of the following reaction?



E None of the above (all represent valid mechanism steps).

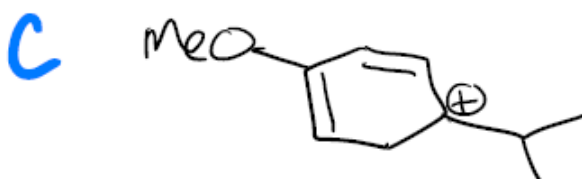
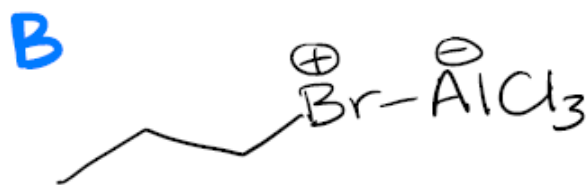
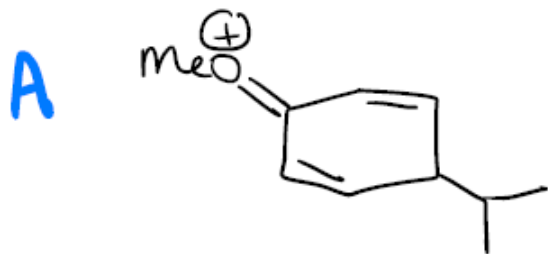
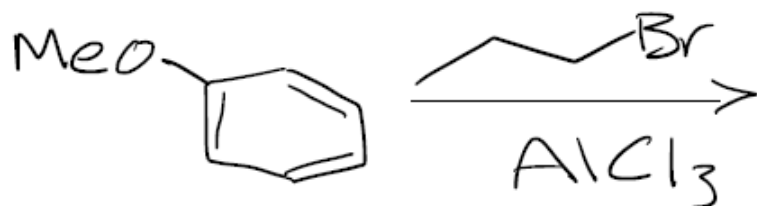
3

Predict the major product for the following reaction.



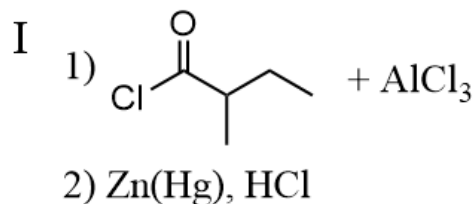
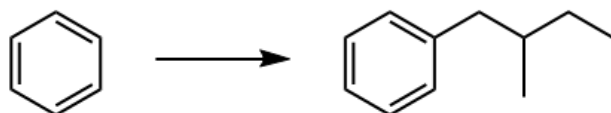
4

Which of the following is NOT a likely intermediate in the mechanism of the following reaction?



5

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



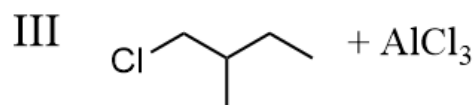
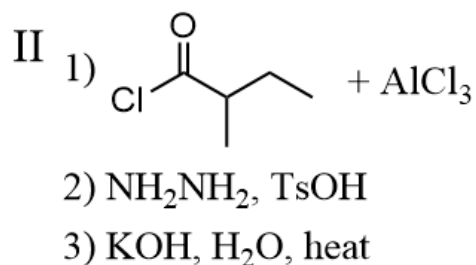
A) I only

B) II only

C) III only

D) I and II only

E) I, II and III



6

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

