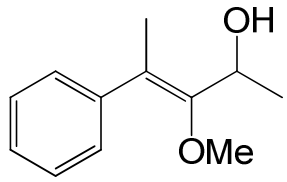
WORKSHEET V_Keys

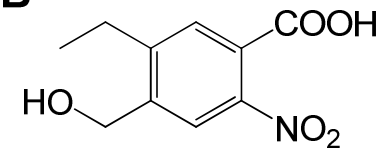
1. Name the following compounds

A



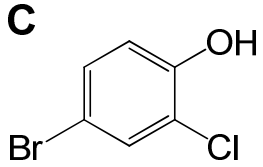
3-methoxy-4-phenylpent-3-en-2-ol

B



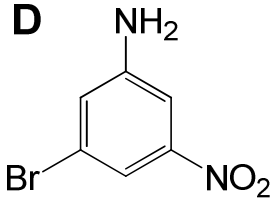
5-ethyl-4-(hydroxymethyl)-2-nitrobenzoic acid

C



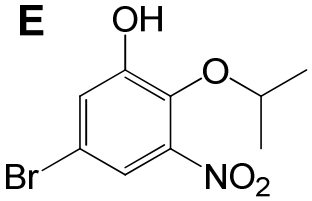
4-bromo-2-chlorophenol

D



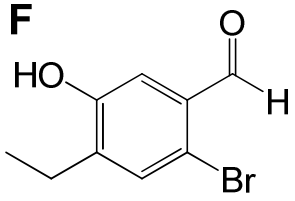
3-bromo-5-nitroaniline

E



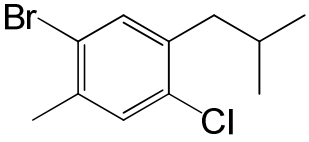
5-bromo-2-isopropoxy-3-nitrophenol

F



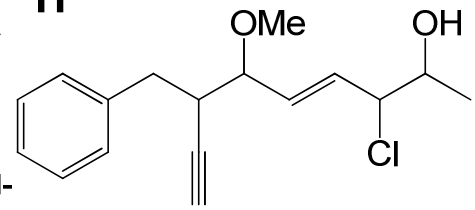
2-bromo-4-ethyl-5-hydroxybenzaldehyde

G



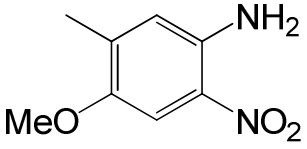
1-bromo-4-chloro-5-isobutyl-2-methylbenzene

H



7-benzyl-3-chloro-6-methoxy non-4-en-8-yn-2-ol

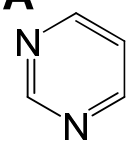
I



4-methoxy-5-methyl-2-nitroaniline

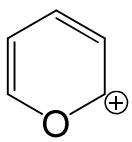
2. Classify the following compounds as aromatic, antiaromatic or nonaromatic

A



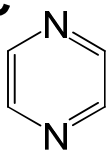
Aromatic

B



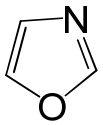
Aromatic

C



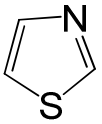
Aromatic

D



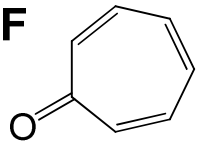
Aromatic

E



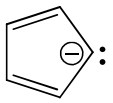
Aromatic

F



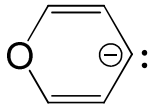
Aromatic

G



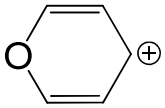
Aromatic

H



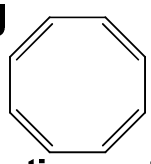
Antiaromatic

I



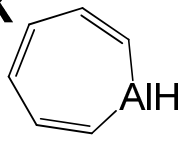
Aromatic

J



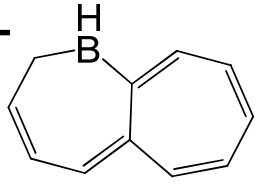
Antiaromatic

K



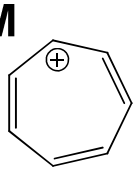
Aromatic

L



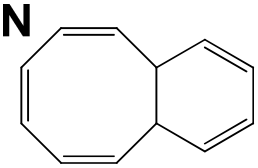
Non-aromatic

M



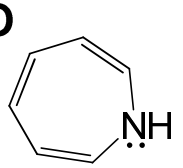
Aromatic

N



Non-aromatic

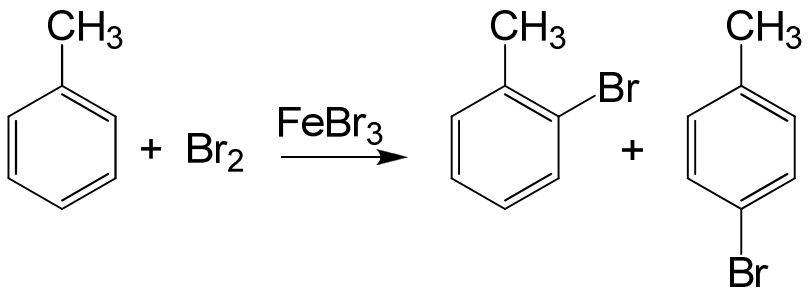
O



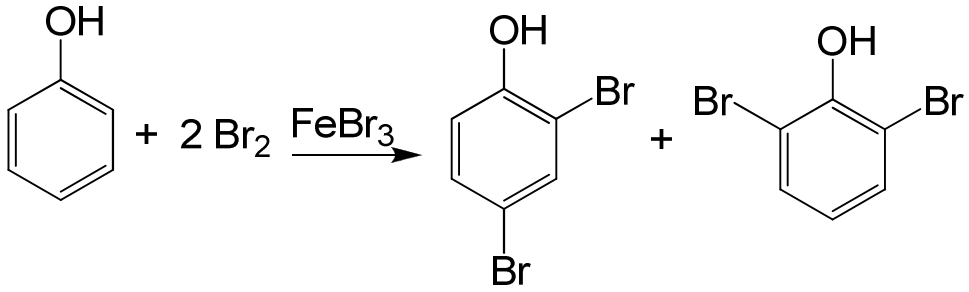
Antiaromatic

3. Give the major product(s) of each of the following reaction

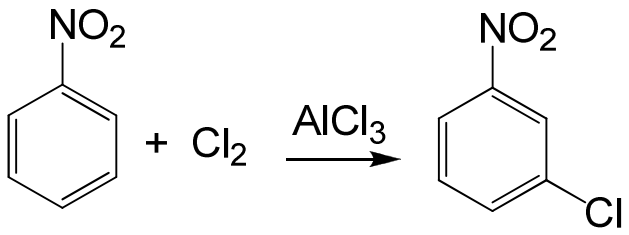
A



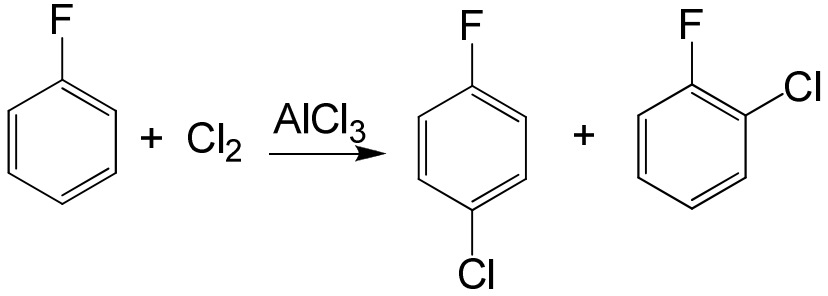
B



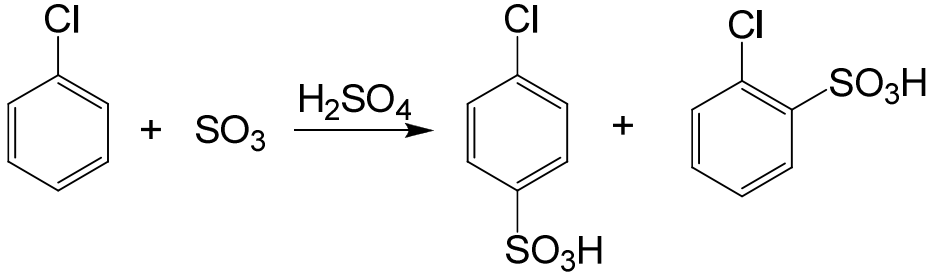
C



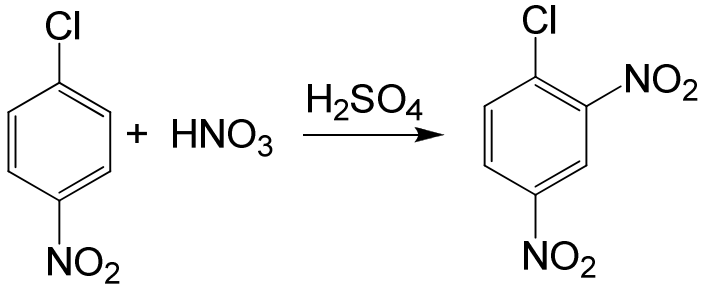
D



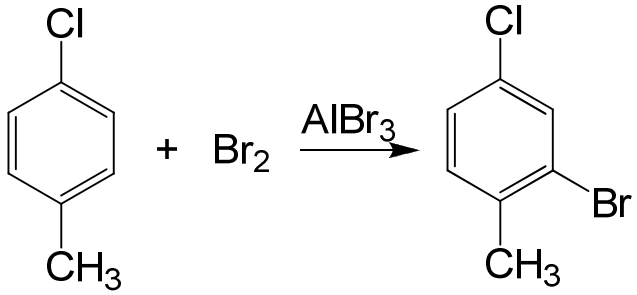
E



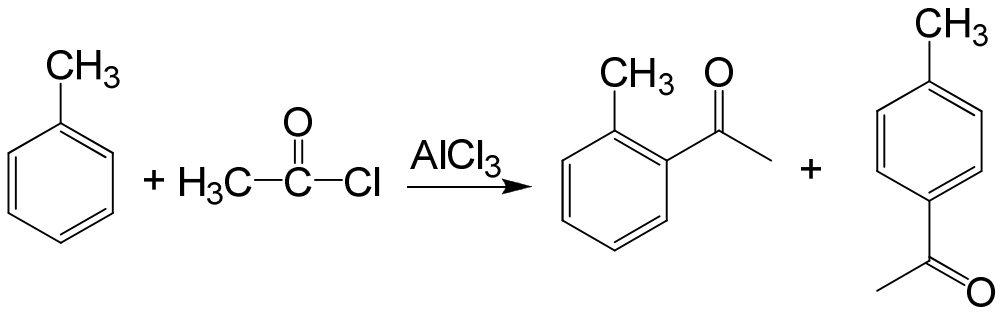
F


Cl
+ HNO3
H2SO4
NO2
Cl
NO2
NO2

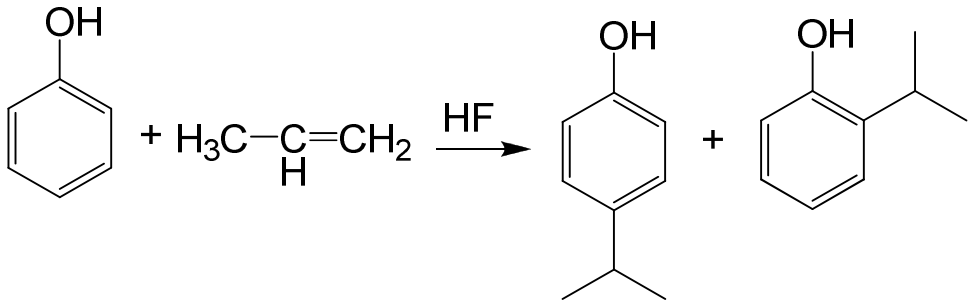
G


Cl
+ Br2
AlBr3
CH3
Cl
Br
CH3

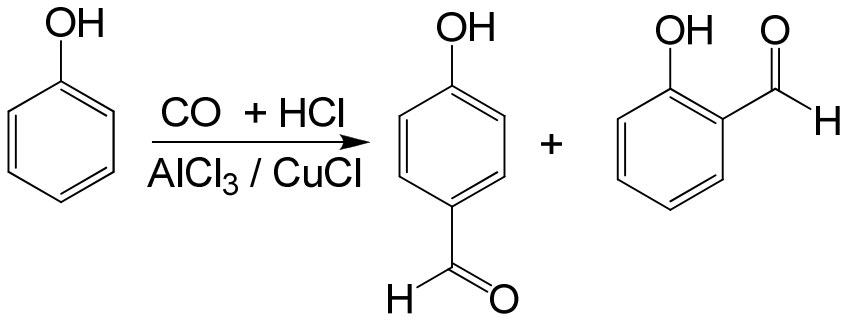
H


CH3
+ H3C—C—Cl
O
AlCl3
CH3
O
+
CH3
O

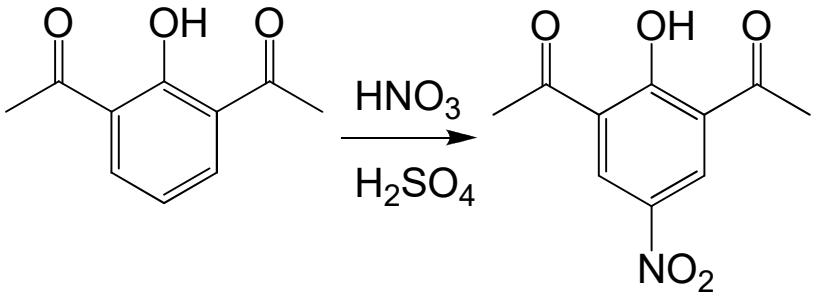
I


OH
+ H3C—C=CH2
H
HF
OH
+
OH

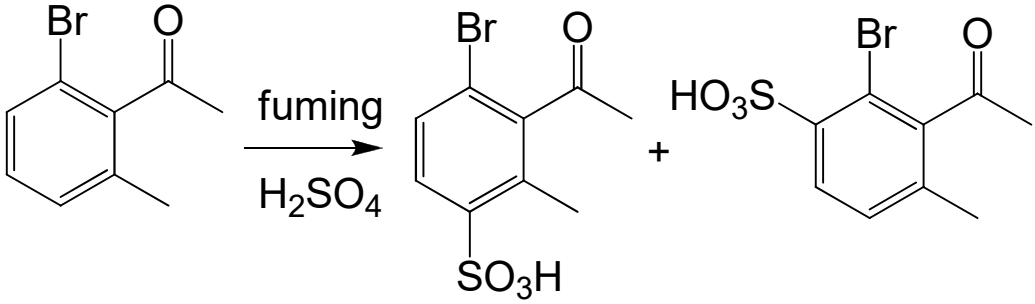
J


OH
CO + HCl
AlCl3 / CuCl
OH
H
O
+
OH
O
H

K

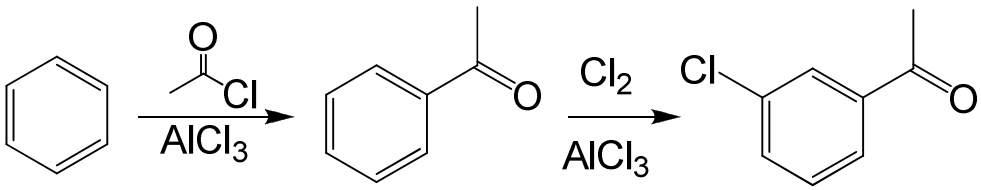


L

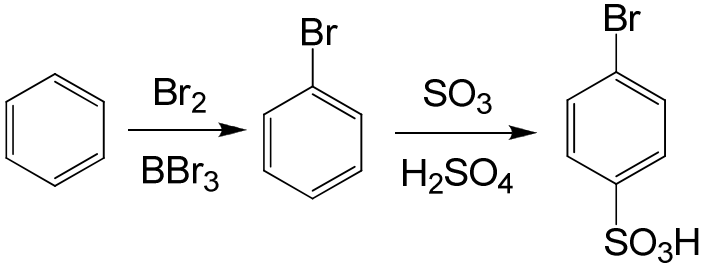


4. Show how you would synthesize these compounds from benzene (you should list all the reactants and the proper reaction conditions)

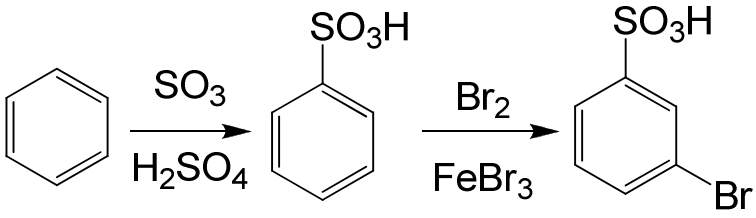
A



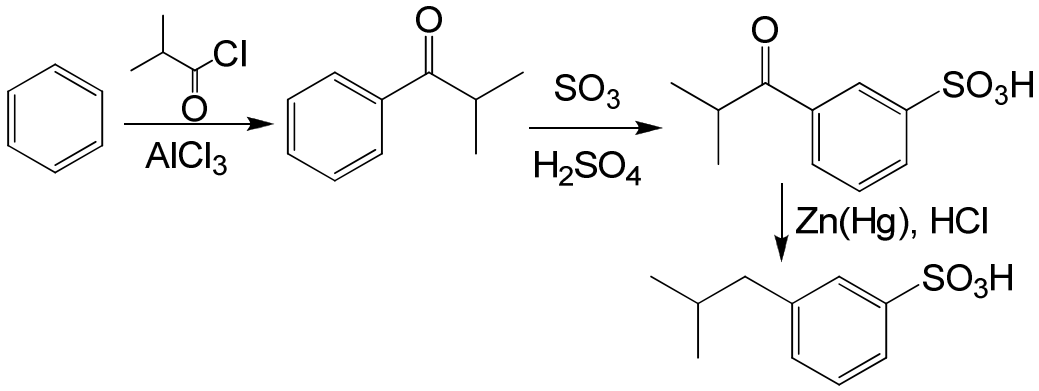
B



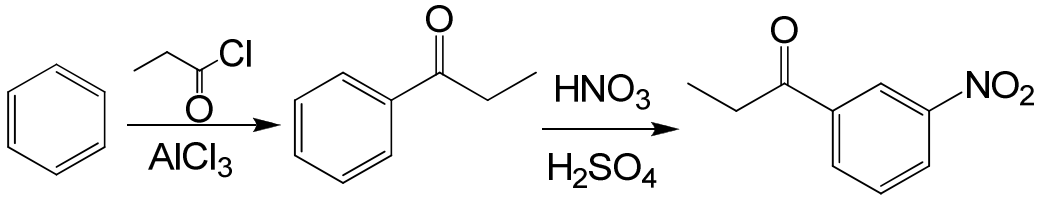
C



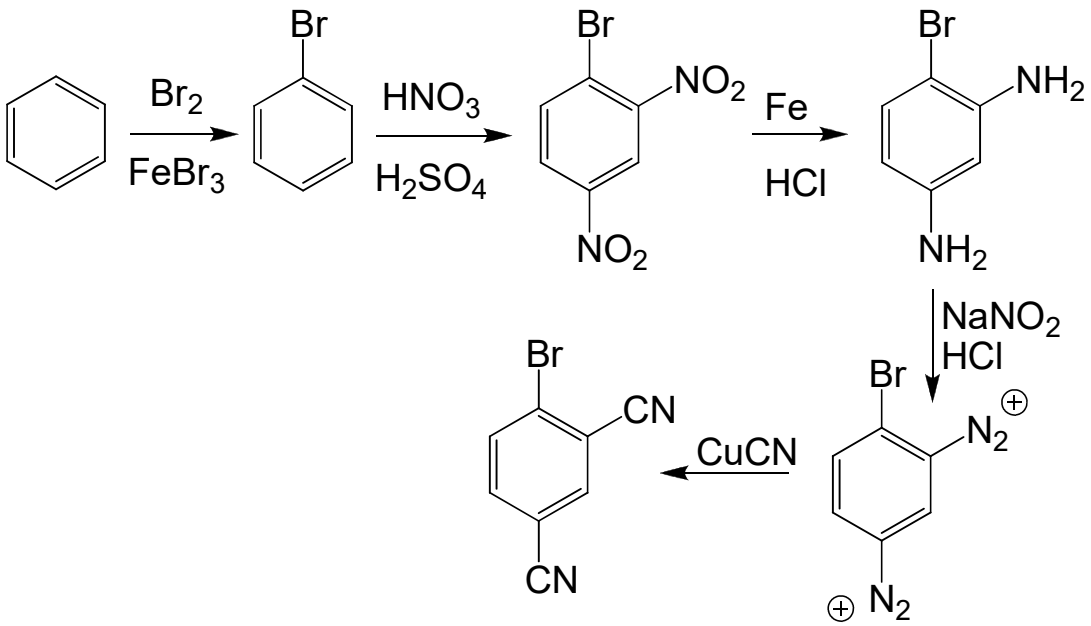
D


Cl
O
AlCl3
O
SO3
H2SO4
O
SO3H
Zn(Hg), HCl
SO3H

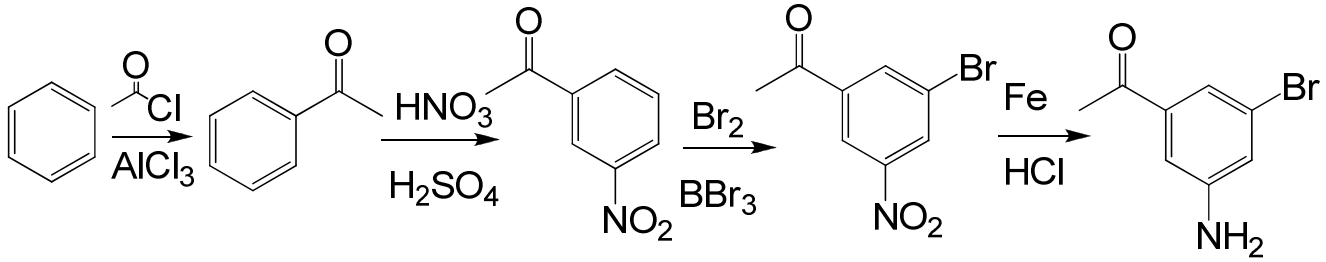
E


Cl
O
AlCl3
O
HNO3
H2SO4
O
NO2

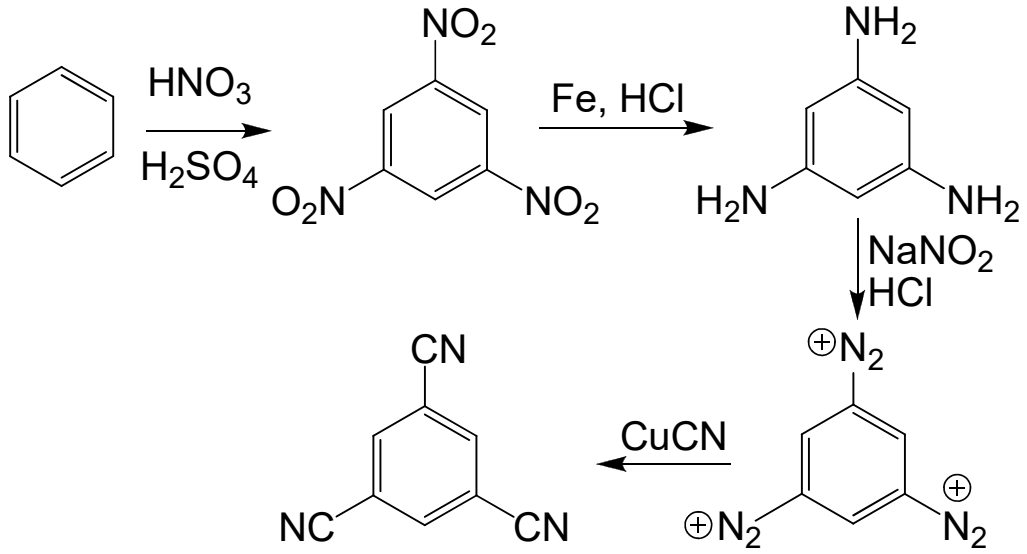
F


Br
Br2
FeBr3
Br
HNO3
H2SO4
NO2
NO2
Fe
HCl
Br
NH2
NH2
NaNO2
HCl
Br
N2
N2
CuCN
Br
CN
CN

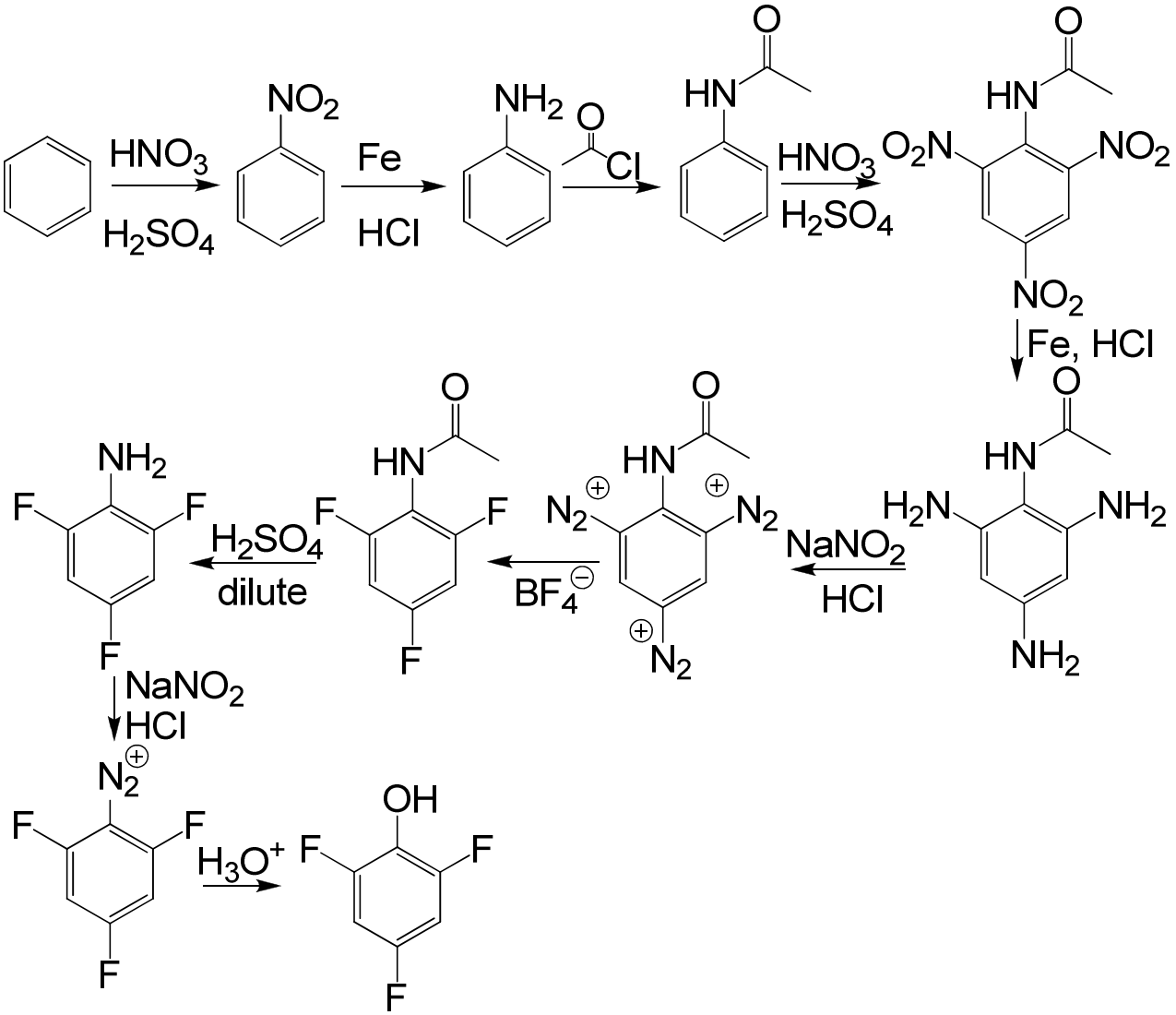
G


O
Cl
AlCl3
O
HNO3
H2SO4
O
NO2
Br2
BBr3
O
Br
NO2
Fe
HCl
O
Br
NH2

H

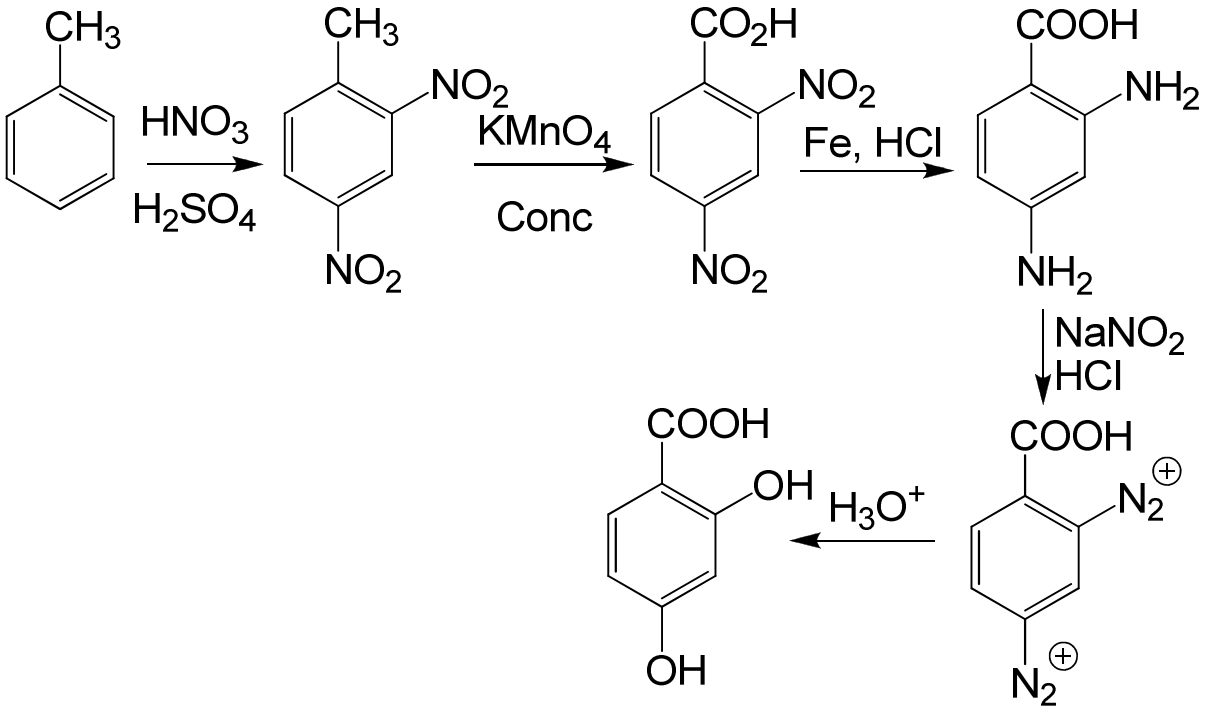

HNO3
H2SO4
NO2
O2N
NO2
Fe, HCl
NH2
H2N
NH2
NaNO2
HCl
⊕N2
⊕N2
⊕N2
CuCN
CN
NC
CN

I


HNO3
H2SO4
NO2
Fe
HCl
NH2
O
Cl
HN
O
HNO3
H2SO4
HN
O2N
NO2
NO2
Fe, HCl
HN
H2N
NH2
NH2
NaNO2
HCl
HN
N2⊕
N2⊕
⊕N2
BF4⊖
HN
F
F
F
H2SO4
dilute
NH2
F
F
F
NaNO2
HCl
N2⊕
F
F
F
H3O+
OH
F
F
F

5. Suggest a good synthetic method for preparing each of the following compounds from the given starting material (s)

A



B