59-235

TEST #1 - SUGGESTED SOLUTIONS

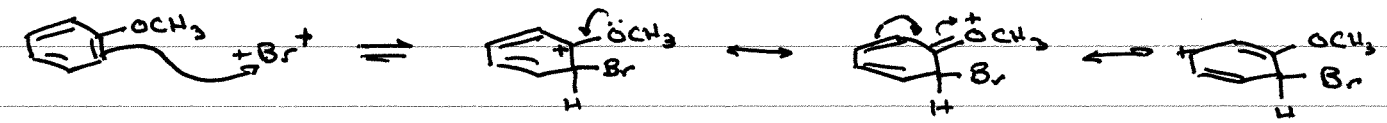
W 2011

1a) $Br-Br + FeBr_3 \rightleftharpoons Br-Br \rightarrow FeBr_3$ OR $Br^+ \; FeBr_4^-$

$\updownarrow$

$Br-\overset{+}{Br}-\overset{-}{FeBr_3}$

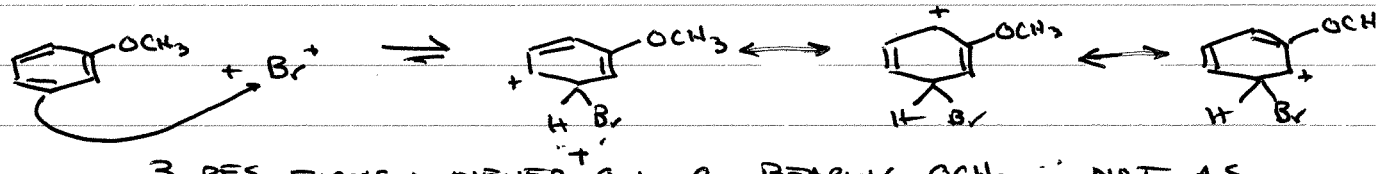
ORTHO-



4 IMPT RESONANCE FORMS

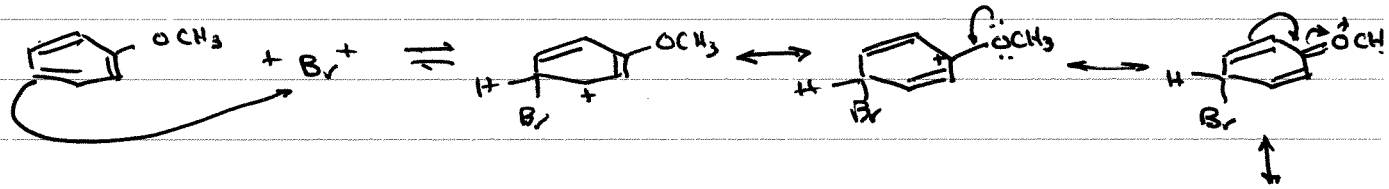
GOOD ∴ SIGNIFICANT PRODUCT (2ND MAJOR)

META



3 RES. FORMS; NEVER ON C BEARING OCH_3 ∴ NOT AS GOOD

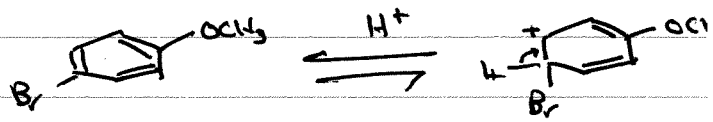
PARA



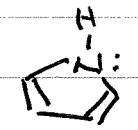
4 IMPT RESONANCE FORMS

- ALSO GOOD

∴ SIGNIFICANT PRODUCT (MAJOR)

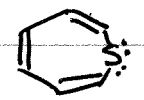


2.



$6\pi e^-$ AROMATIC

$4\pi e^-$ ANTIAROMATIC

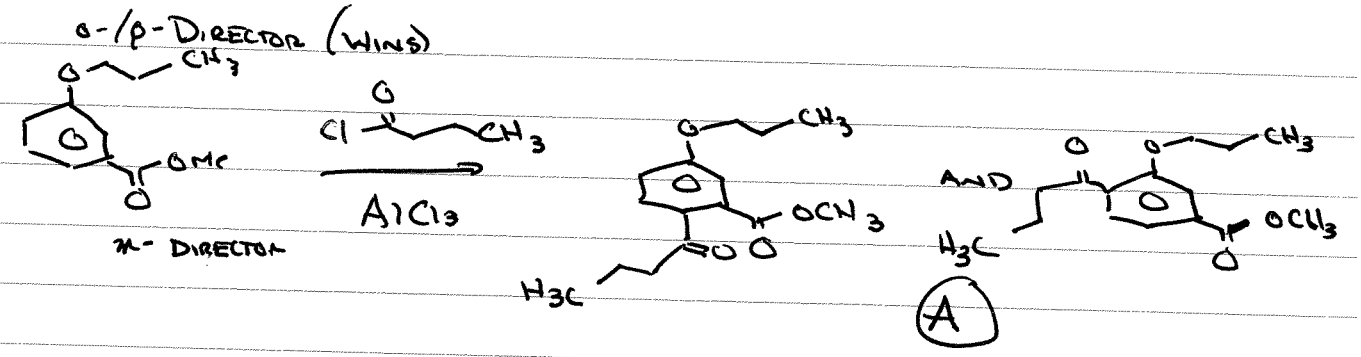


$8\pi e^-$ ANTIAROMATIC

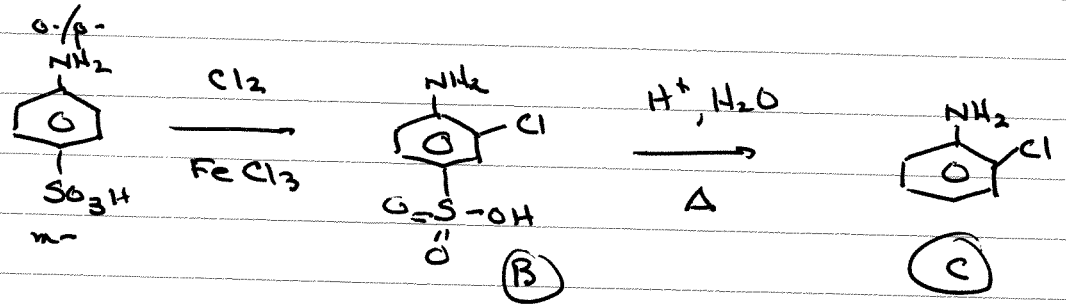
$6\pi e$ AROMATIC

$10\pi e^-$ AROMATIC

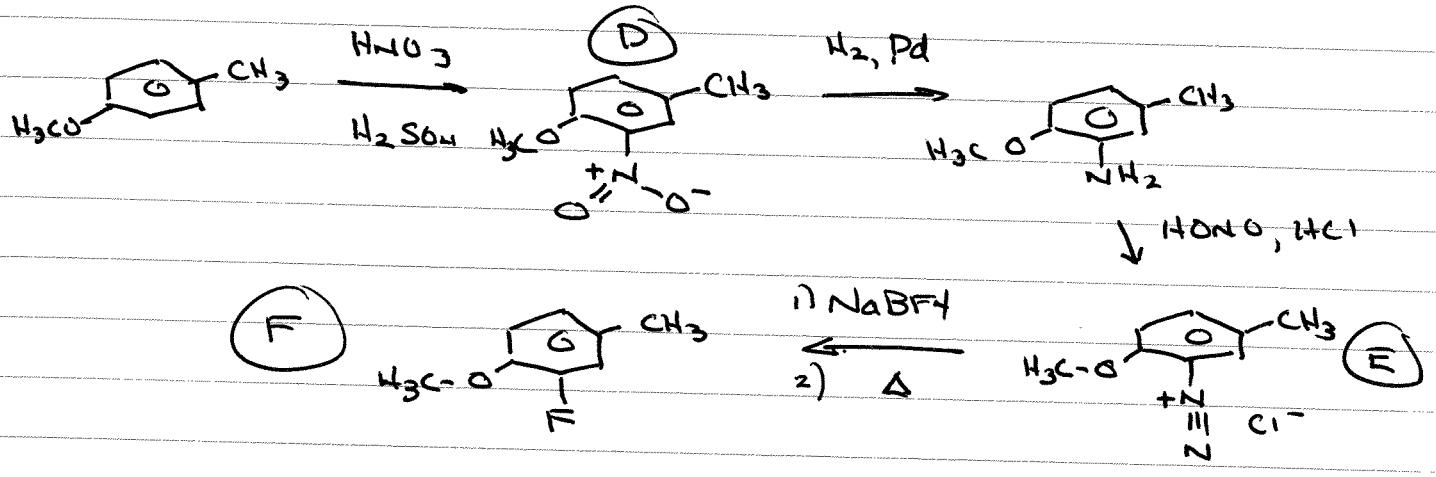
3a)


o-/p-DIRECTOR (WINS)
m- DIRECTOR
AlCl3
AND
A

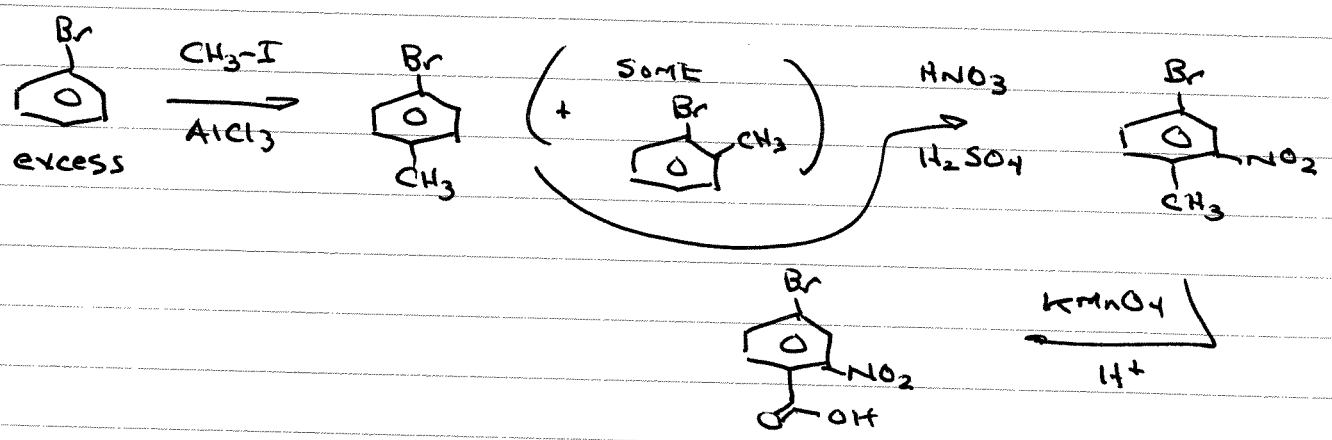
b)


o-/p-
m-
Cl2
FeCl3
H+, H2O
Δ
B
C

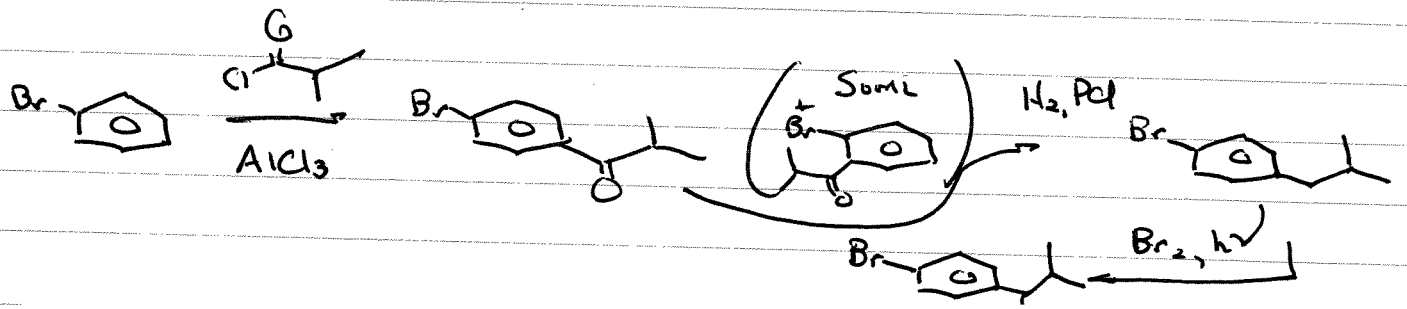
c)


HNO3
H2SO4
D
H2, Pd
HONO, HCl
F
1) NaBF4
2) Δ
E

3. a)


excess
CH3-I
AlCl3
SOME
HNO3
H2SO4
KMnO4
H+

b)


AlCl3
SOME
H2, Pd
Br2, hν