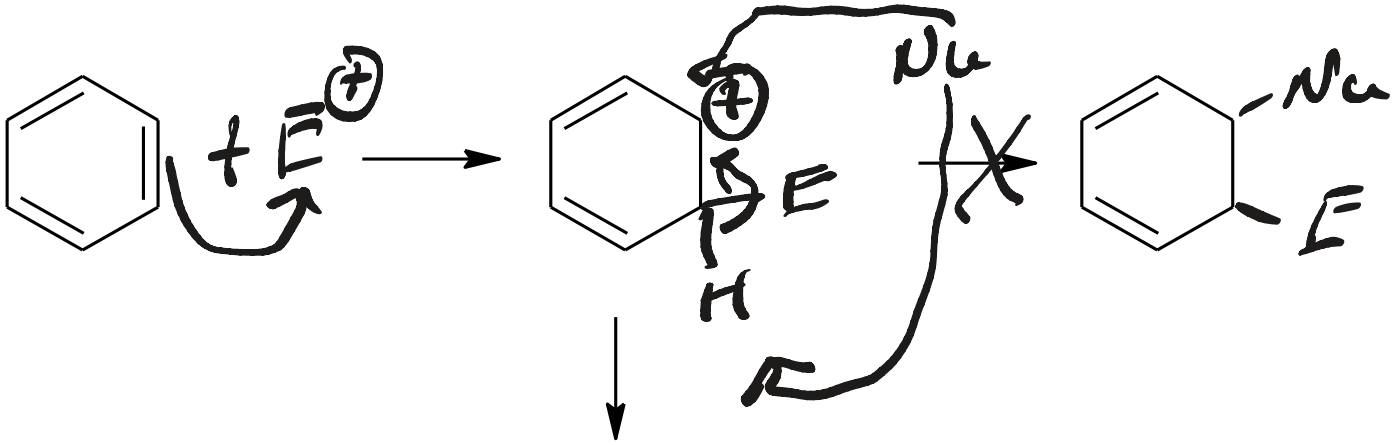
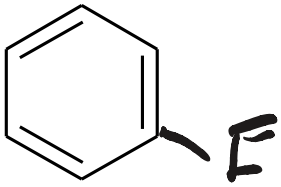
Electrophilic Aromatic Substitution

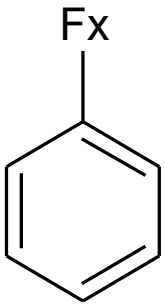
128L

10/22/26





+NuH

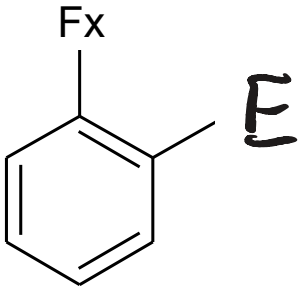


1. Rate

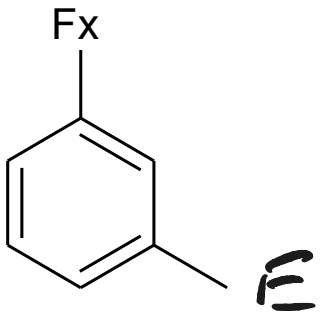
e⊖ withdrawing ring deactivators m directors

e⊖ donating ring activators o,p directors

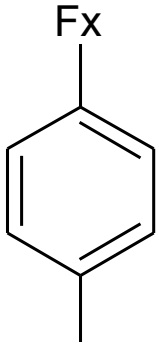
2. directional



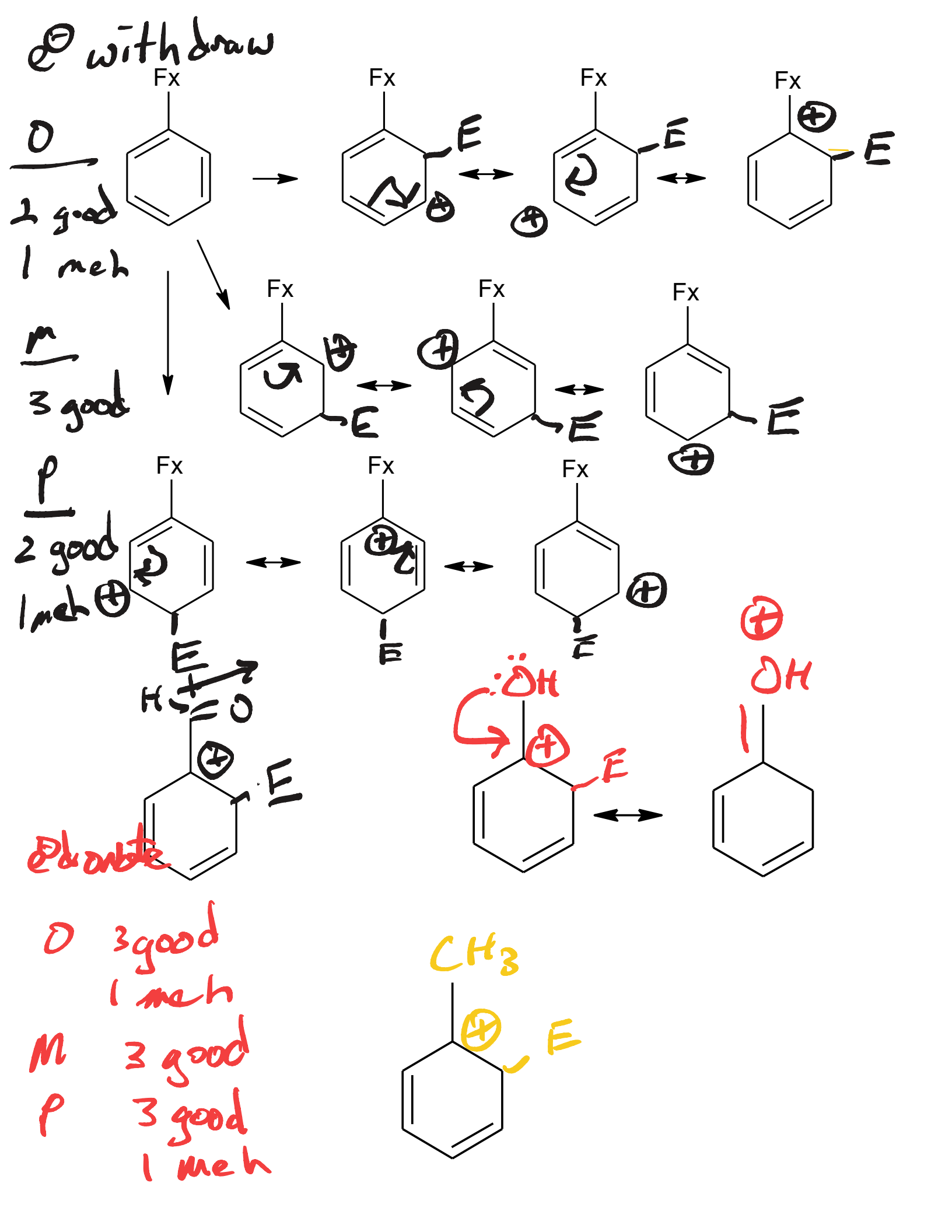
ortho



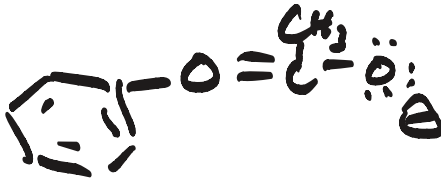
Meta



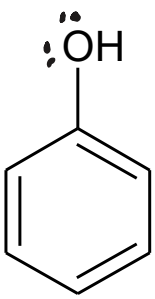
para


e⊖ withdraw
O
2 good
1 meh
M
3 good
P
2 good
1 meh
Fx
E
double
O 3good
1 meh
M 3 good
P 3 good
1 meh
CH3

Relative Rates of Bromination

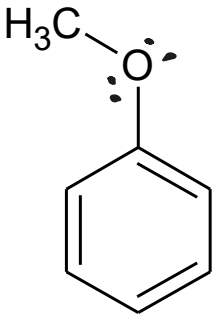


Part 1



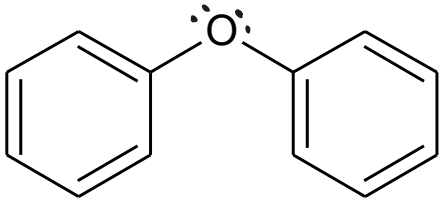
Phenol

1



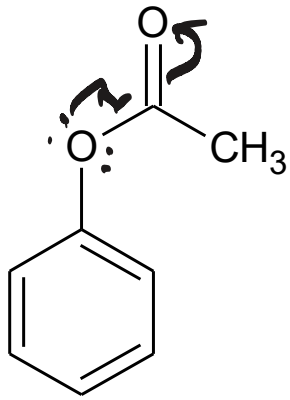
Anisole

2



Diphenyl Ether

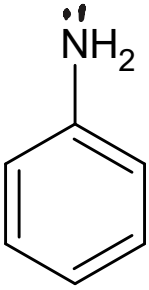
3



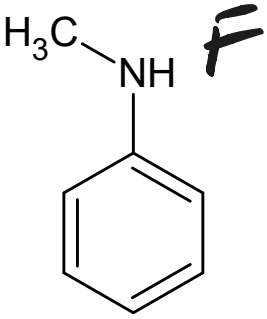
Phenyl Acetate

4

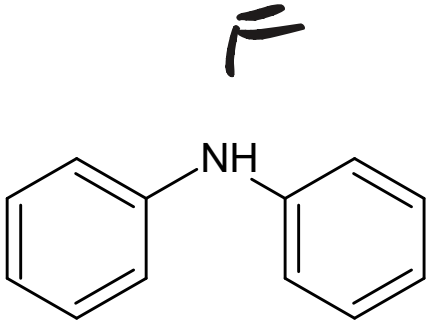
Part 2



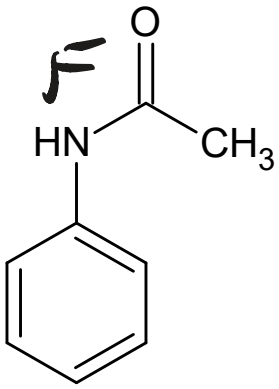
Aniline



N-Methylaniline



N,N-Diphenylamine



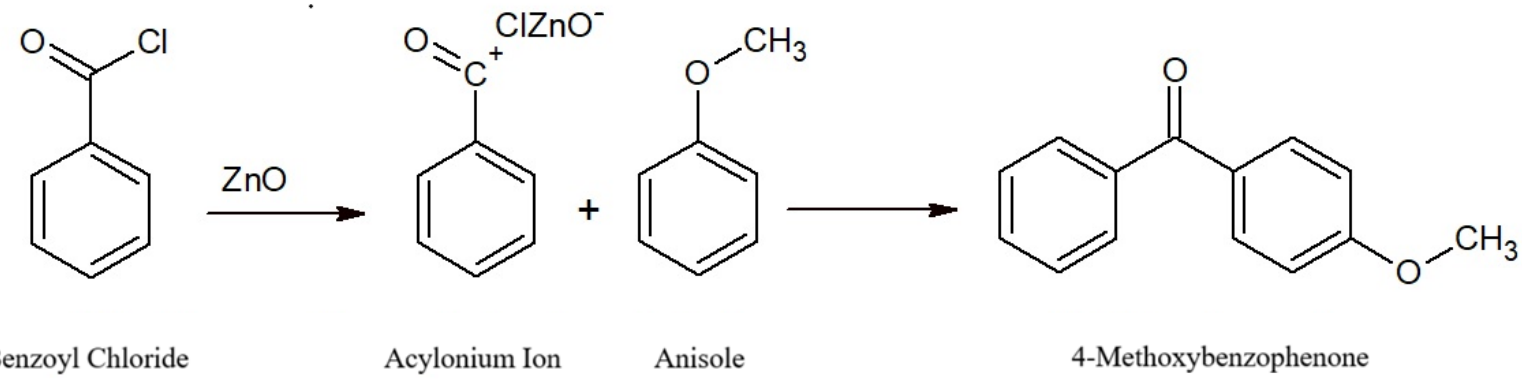
Acetanilide

-70°C 2

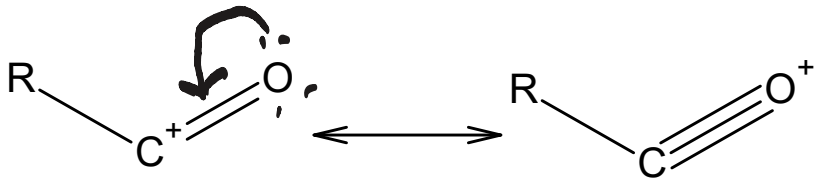
3

4

Acylation of Anisole



Benzoyl Chloride Acylonium Ion Anisole 4-Methoxybenzophenone



MP, IR, % yield