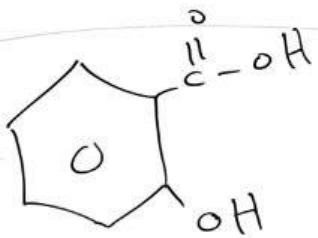
Exper# (7) prep of Aspirin:-



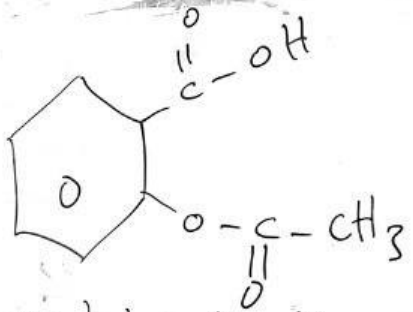
S. A
Salicylicacid
· (5g, M.wt138)

+

A. S
aceticanhydride.
(5ml, d=1.08g/ml
M.wt=102)

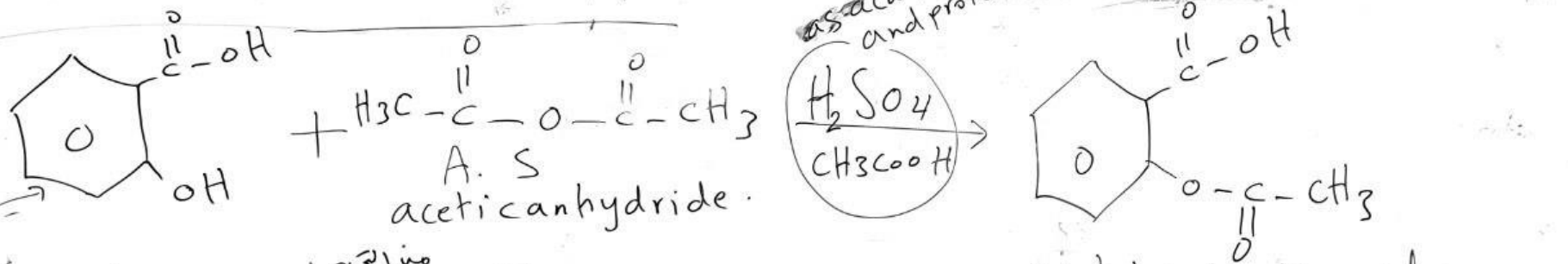
as acatalyst and protonation.

$\xrightarrow[CH_3COOH]{H_2SO_4}$



acetyl salicylic acid.
// Aspirin. //
(M.wt = 180)

Exper#(7) prep of Aspirin (%yeildaspirin)



$$\%\,Aspirin = \frac{\text{actual yeild}}{\text{theor yeild } 6.52} \times 100\%$$

$$\#\,moles\ of\ S.A = \frac{mass}{\mu.mass} = \frac{5}{138} = 0.036\ mol$$

$$\#\,mol\ of\ A.S = \frac{mass}{\mu.mass} = \frac{5.4}{102} = 0.053\ mol$$

$$d = \frac{mass}{V} \Leftrightarrow mass = d \times V \qquad 1.08 \times 5 = 5.4(g)$$

$\therefore$ L.R is S.A

$\#mol\ of\ aspirin = \#mol\ of\ S.A$

$= 0.036\ mol$

$mass\ of\ aspirin = 0.036 \times 180 = 6.52(g)$

Exper#(7) prep of ASpirin (% yeild aspirin)

① 5g of salicylicacid
5mL of aceticanhydride.
4mL CH_3COOH
10 drops of con H_2SO_4

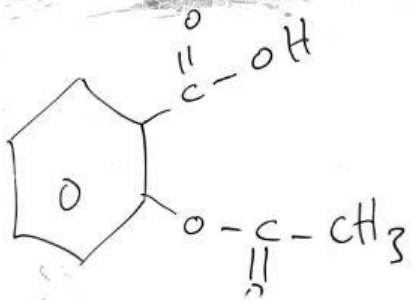
② put The rxn in water Bath.

③ add 40 ml of hot H_2O

④ heat for 2-3min ((direct flame))

as acatylst and protonation.

H_2SO_4 / CH_3COOH



⑤ Cool at R.T

⑥ put inice Bath.

⑦ Suction filtration.

mass actual = 5.85(g)

$\% = \frac{5.85}{6.52} \times 100\% \simeq 90\%$

(1)