Date _____

Expt. No. 08

Page No. 23

Aim :-

To identify the extra element and the functional group present in the given sample (salicylic acid).

Reference :-

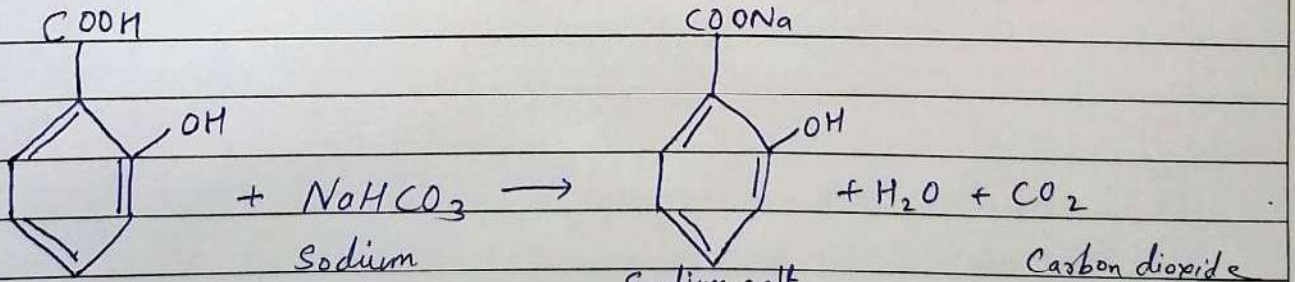
Requirement :-

Ignition tube, Pair of tongs, test tube holder, China dish, tripod stand, wire gauze, funnel and filter paper.

Theory :-

Sodium bicarbonate test :

Place a little of the substance in a test tube and add 2 ml of 5% aqueous sodium bicarbonate solution. The acids form their corresponding sodium salts with the liberation of carbon dioxide.



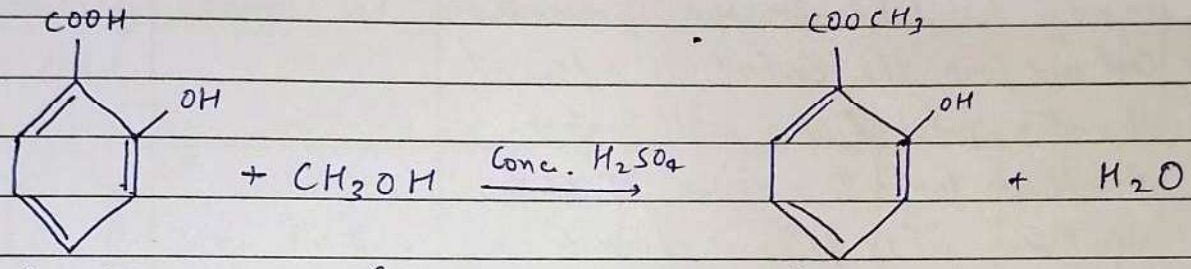
Salicylic acid

Sodium salt of salicylic acid

Teacher's Signature _____

Ester test :-

Heat about 0.5 g of the sample with 1 ml of methyl ~~alcohol~~ alcohol and a few drops of concentrated H_2SO_4 in a dry test tube for about a minute. Cool and pour the contents to a few ml of water contained in a small beaker. Salicylic acid can be identified by the colour of wintergreen oil.



Salicylic acid — Methyl alcohol — Methyl salicylate, odour of wintergreen oil

Concentrated H_2SO_4 checks the reversibility of the reaction and acts as a dehydrating agent.

Acriflavine test:

Appearance of yellow or Brown yellow precipitate confirms the presence of COOH group.

Ferric chloride test:

This test is carried out in a ~~control~~ neutral solution. Put about 0.5 g of the substance in a boiling test tube and add dilute ammonia solution until the contents are just alkaline

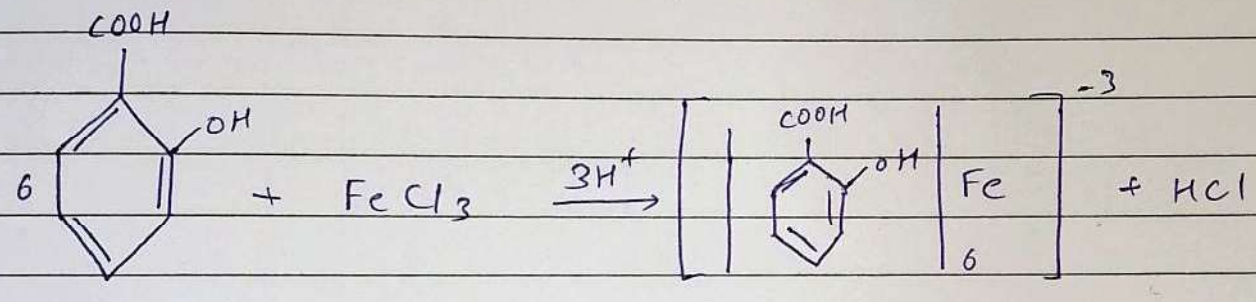
Tests for Carboxylic Acids

S.No	Experiment	Observation	Inference
1.	Sodium bicarbonate test - Place a little of the substance in a test tube and add 2 ml of 5% aqueous sodium bicarbonate sol^n.		
2.	Ester formation - Heat about 0.5g of the sample with 1ml of methyl alcohol and add a few drops of conc. H_2SO_4 in a dry test tube for about a minute. Cool and pour the contents to a few ml of water contained in a small beaker.		
3.	Acriflavine test - To a mixture of 0.1% acriflavine and 1% potassium chromate solution add a few drops of aqueous solution of the given sample.		
4.	Ferric Chloride Test - Put about 0.5g of the substance in a boiling test tube and add dilute ammonia solution until the contents are just alkaline to litmus paper. Boil the solution gently until the odour of ammonia is not there. To cold solution add few drops of ferric chloride solution..		
5.	Benzylthiouronium test - Dissolve about 0.5g of the sample in minimum volume of water. Add 5% sodium hydroxide sol^n until the solution is just alkaline to methyl orange. Add a drop of dilute HCl. In another test tube dissolve 0.8g of benzylthiouronium chloride in 2ml of water. Mix the 2 solutions, Cool in ice bath.		

to litmus paper. Boil the solution gently until the odour of ammonia is ~~not~~ not there. To the cold solution add few drops of ferric chloride solution. A violet colour indicates the presence of salicylic acid.

Benzylthiouronium Test

Benzylthiouronium salt of the acid separates out. (Chemistry same as previous experiment).



Salicylic acid	Ferric chloride	Violet coloured complex	Hydrochloric acid.

Result:-

The given organic compound has been studied successfully in the laboratory.

Teacher's Signature _____