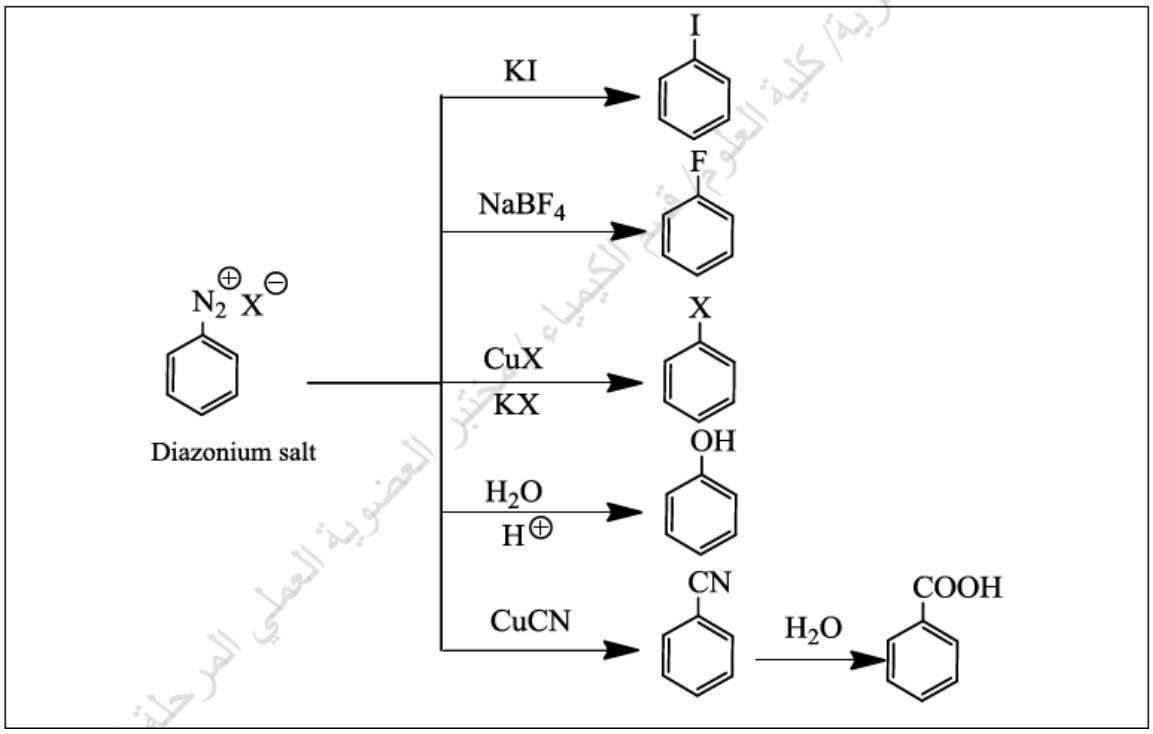
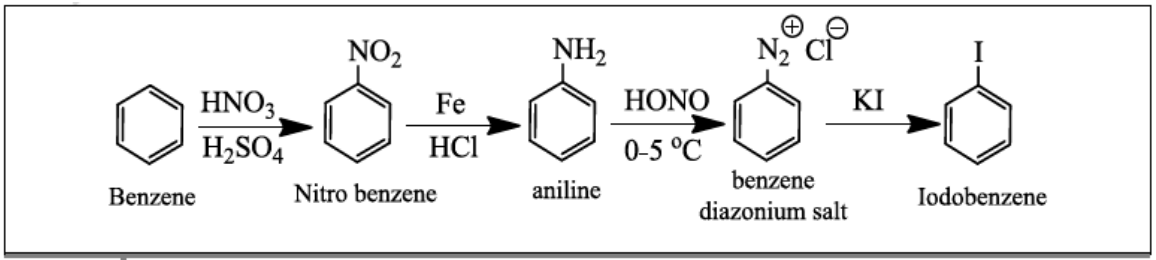
Experiment 3

Preparation of Iodobenzene

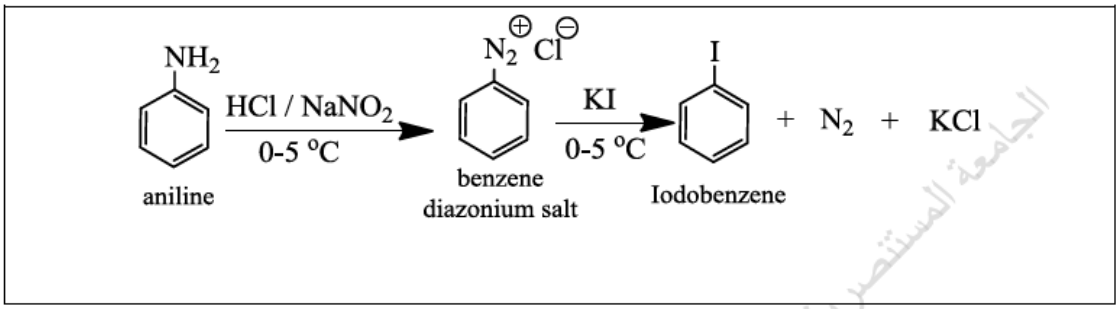
Theoretical part:

Aryl Iodides and fluorides cannot generally be prepared by direct halogenations. Replacement of diazonium group is the best general way of introducing (F, Cl, I, CN, OH, and H) into an aromatic ring. Diazonium salts are valuable in synthesis not only because they react to form so many classes of compounds, but also because they can be prepared from nearly all primary aromatic amines.





The general equation:



Uses of iodobenzene:

Iodine Compounds; Pharmaceutical Intermediate; it is useful as a synthetic intermediate in organic chemistry.

Experiment:

1- (1.25ml) of aniline was dissolved in (3.5ml) of concentrated hydrochloric acid, (3.5ml) of water in a small beaker.

2- The diazonium salt is prepared by the addition of a solution of (1g) of sodium nitrite in (5ml) of water to the solution in step 1 and left in ice bath (0-5^{o}C).

3- (2.25g) of potassium iodide was dissolved in (5ml) of water and cooled in ice bath.

4- The Cold solution of potassium iodide is added slowly to the mixture in step 2.

5- The solution is allowed to stand in an ice bath for (15 min.) with occasional stirring.

6- The precipitate formed is filtered through a Buchner funnel washed and dried

7- The dry product is weighed to get the percentage yield.