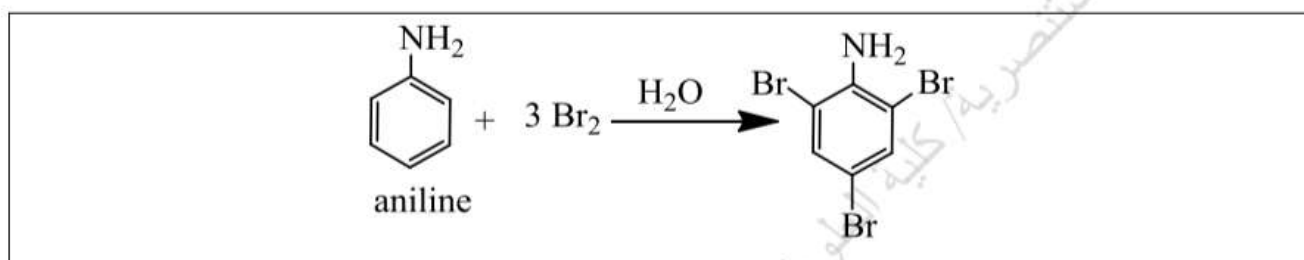


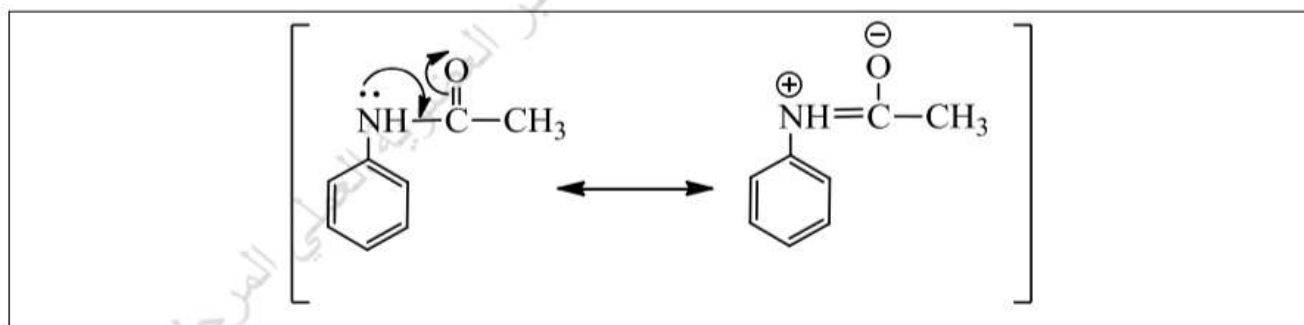
Expierment Eleven

Preparation of p-nitro acetanilide

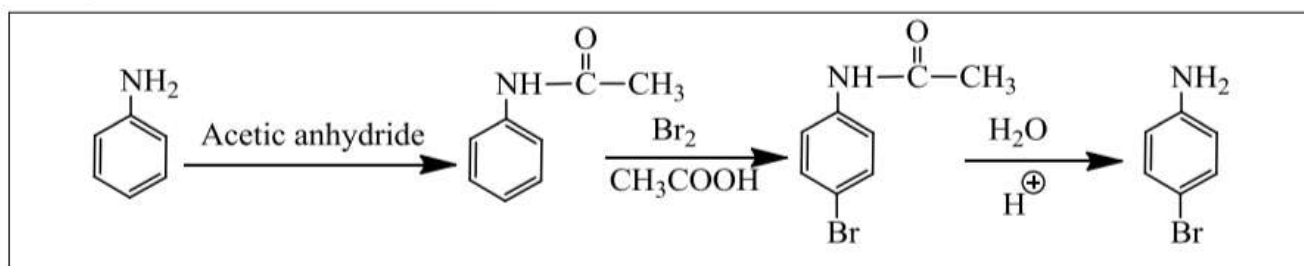
In electrophilic substitution the chief problem encountered with aromatic amines is that they are too reactive . In halogenation , substitution tends to occur at every available ortho or para position , for example the result of mixing the aniline with bromine water is (2,4,6-tribromoaniline).



The acetamide group , (-NHCOCH₃) , is also activating and ortho , para ,directing , but less powerfully so than free amino group . electron withdrawer by oxegen of the carbonyl group mix the nitrogen of an amide a much porer source of electrons than the nitrogen of an amine

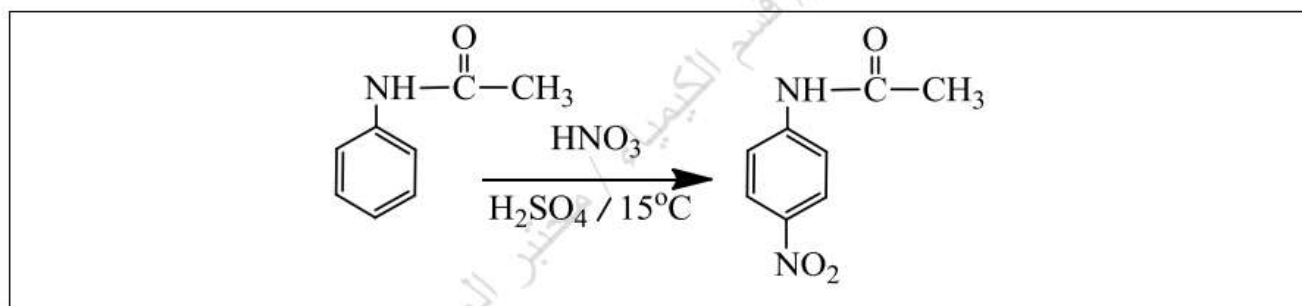


As example we can prepare P-Bromoaniline as shown below:



In nitration of amines , nitric acid not only nitrates , but oxidizes the highly reactive as well , with loss of much material as tar. Further more , in strongly acidic nitration medium ,the amine is converted into the anilinium ion, substitution is thus controlled not by the amino group but by the NH_3^+ group which , because of its positive charge , directs much of the substitution to the meta position . there is fortunately , a assemble way out of these difficulties . we protect the amino group , we acetalate the amine , then carry out the substitution , and finally hydrolyze amide to the desired substituted amine

General Equation :



Expermental Part :

1. (2.5 gm.) of acetanilide is added to 2.5 ml of glacial acetic acid in a beaker with continuous stirring
2. 2.5 ml of concentrated sulfuric acid is added to the mixture in step 1,with cooling in ice bath.
3. A mixture of 1.5 ml of nitric acid and 1 ml of sulfuric acid is added to the mixture in step 2 drop wise with continuous stirring in ice bath keeping the temperature (0-5) $^{\circ}\text{C}$.
4. The mixture is left at room temperature for 15 min.
5. The mixture is poured onto 100 ml of ice cooled water ,the precipitate is fomed.

6. The precipitate is filtered and dried.
7. The product is weighed and the percentage of yield is calculated

الجامعة المستنصرية / كلية العلوم / قسم الكيمياء / مختبر العضوية العملي المرحلة الثالثة