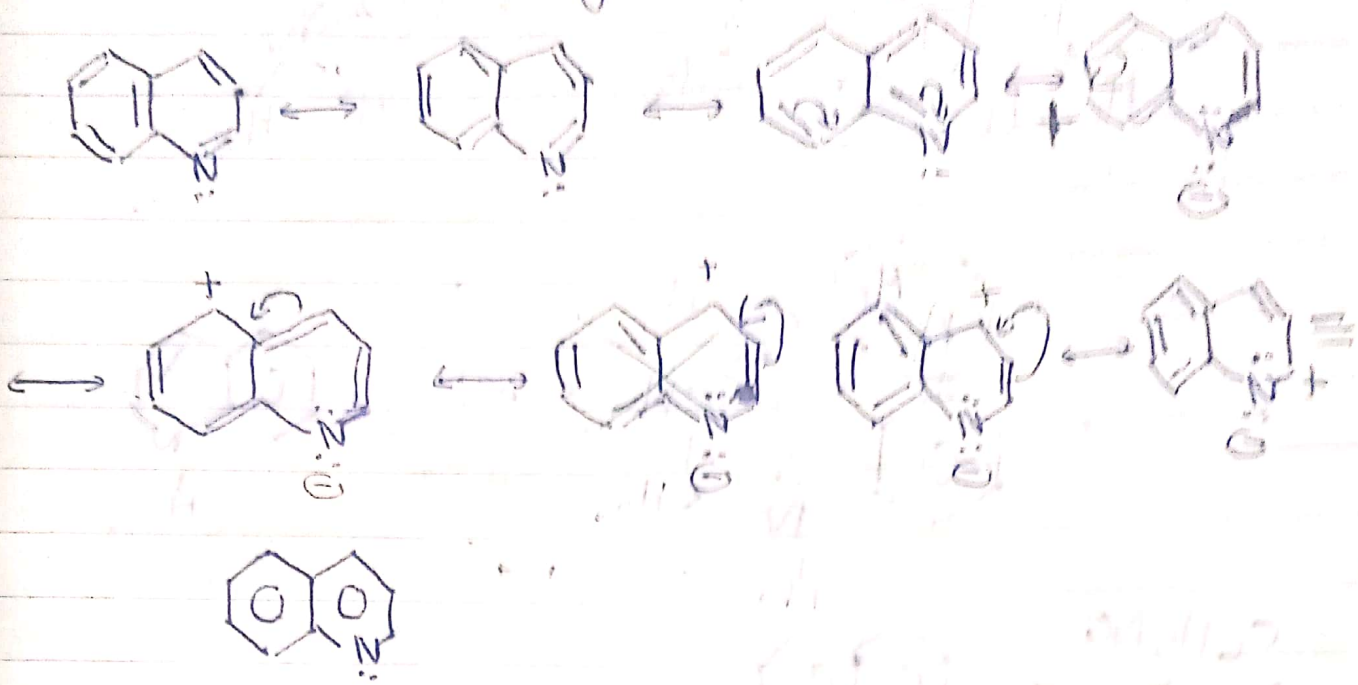
ROLL PROPERTIES
Quinoline shows aromatic character because it satisfies the Huckel's rule [illegible]

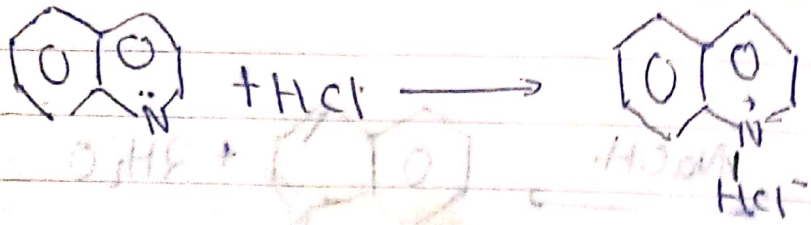
Quinoline is considered to be the resonance hybrid of the following resonating forms.



The main properties of Quinoline are as Follows:-

(1) Basic character-

It is a slightly weaker base than pyridine. It reacts with acids to form salts.

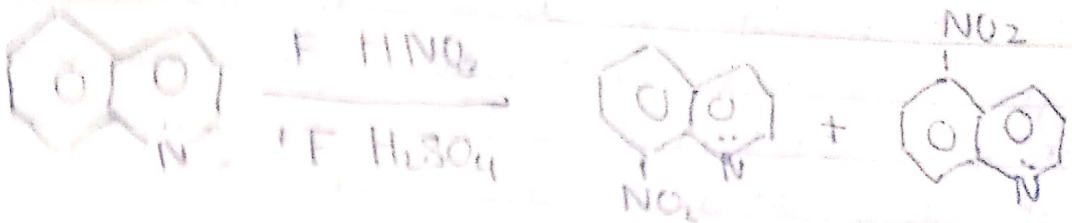


(2) Electrophilic Substitution:-

Imp.

Quinoline undergoes electrophilic substitution reactions at C-8 and C-5 position only under vigorous conditions.

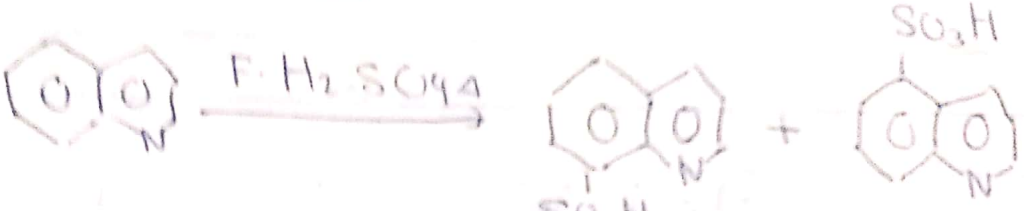
(a) Nitration :-



8-nitro quinoline

5-nitro quinoline.

(b) Sulphonation :-



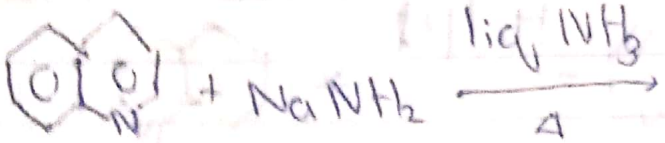
Quinolines sulphonic acid

Quinoline 5-sulphonic acid.

(3) Nucleophilic Substitution Reactions :-

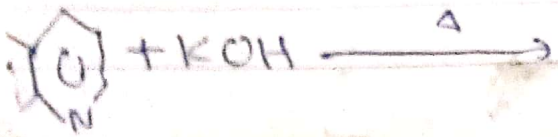
Like pyridine, quinoline undergoes nucleophilic substitution reactions mainly at C-2 positions.

(a) Reactions with Sodamide :-



2 amino quinoline.

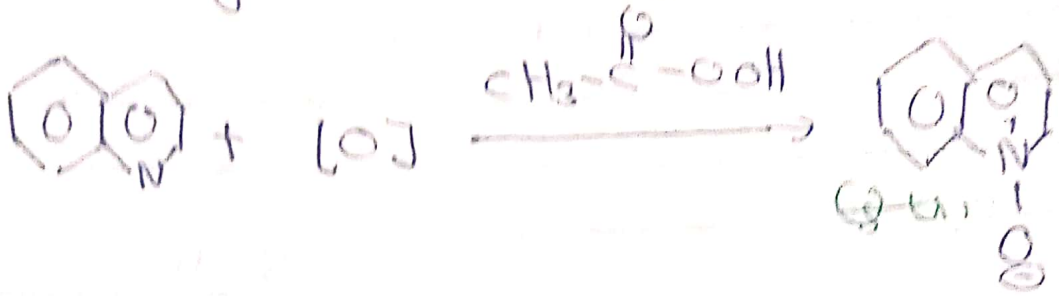
(b) Reaction with potassium hydroxide :-



2 hydroxy quinoline.

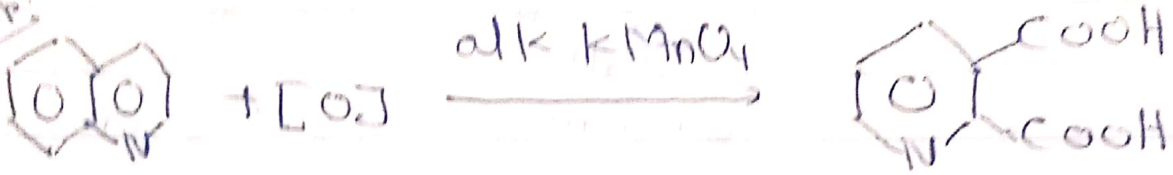
(4) Oxidation:

Quinoline is oxidized by per acetic acid to give Quinoline N oxide. Hot alkaline $KMnO_4$ oxidation yields pyridine 2,3 dicarboxylic acid (Quinolinic acid).



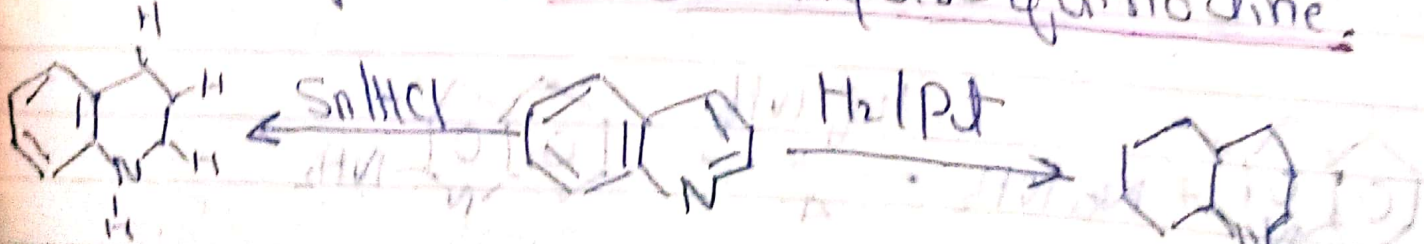
Quinoline N-oxide

2 mol.



Pyridine 2,3 dicarboxylic acid

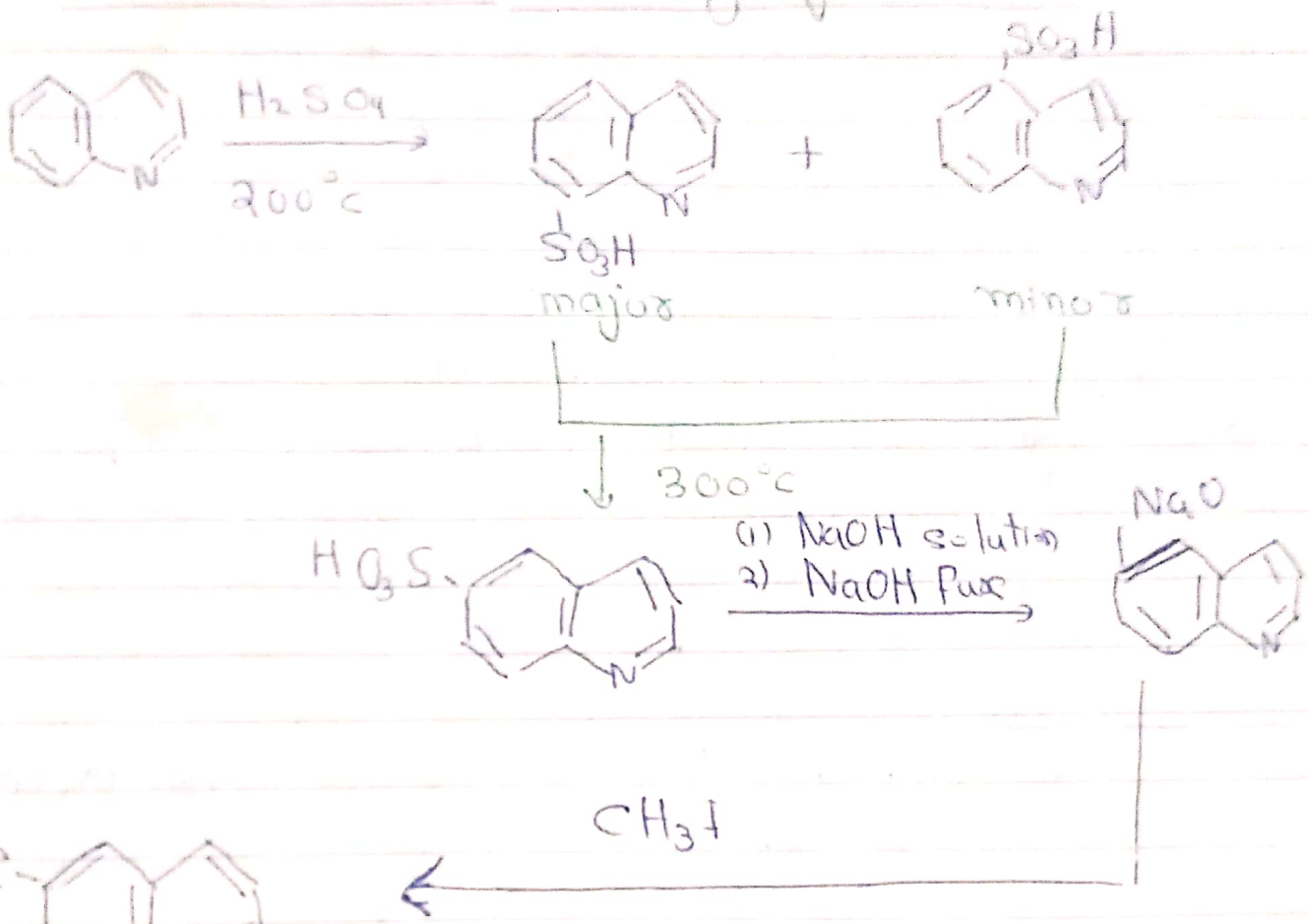
(5) Reduction:- Quinoline when reduced with tin and hydrochloric acid gives 1,2,3,4 tetrahydroquinoline. Catalytic reduction such as hydrogen in presence of Pd. produces decahydroquinoline.



Tetrahydro quinoline

decahydroquinoline

(6) Quinoline to 6 methoxy Quinoline:-



6 methoxy quinoline

USES -

(1) As a highing boiling solvent.
2. In the manufacture of dyes and insecticide.