2nd SEM.

Acid & Base

24-08/08/20 (Monday)

Class-1

Organic acids differ from Inorganic acid as the former are weak acid than the later.

Mainly acids are of two categories (i) Bronsted acid (ii) Lewis acid.

Bronsted acid or Protogenic acid:- These type of acids liberate H^+ ion in solution. More is the rate of H^+ ion liberation or more is the no. of H^+ ion in the soln. more is the acidity.

for example: $A^{\delta-} - H^{\delta+} \longrightarrow A^{\ominus} + H^{\oplus}$

- Consider it as solid state
- Consider it in vapour state
- Consider it in solution. / in presence of solvent.

Now A—H will dissociate if (i) this bond is Polar. i.e if H is connected to electronegative atom or electron withdrawing group.

(ii) if after dissociation $A^{\ominus}$ and H^+ get stability,

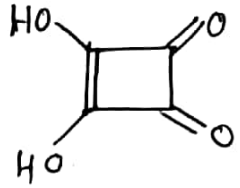
$A^{\ominus}$ ⟶ Conjugate base of the HA acid, more is the stability of $A^{\ominus}$, more is the acidity of HA.

Lewis acid :- These are inorganic type, generally having p or d orbital that can accomadate and accept lone pair of electron on demand.

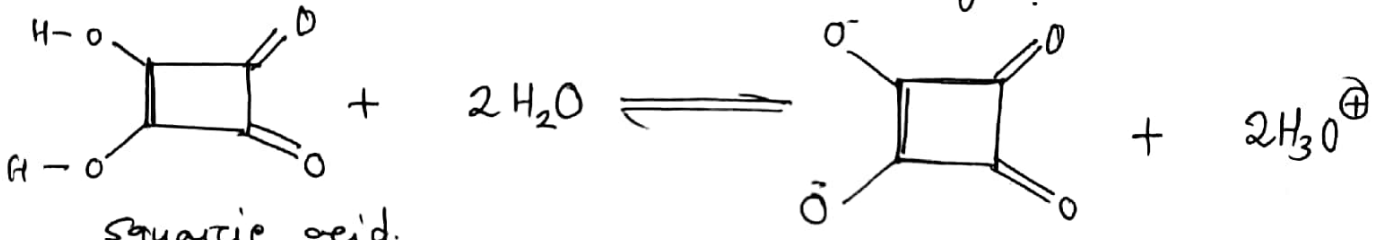
eg $AlCl_3$, BF_3 . etc.

Organic acid and their relative strength

Lets discuss few examples.

1) 

- This acid is very strong acid. like H_2SO_4. why ?

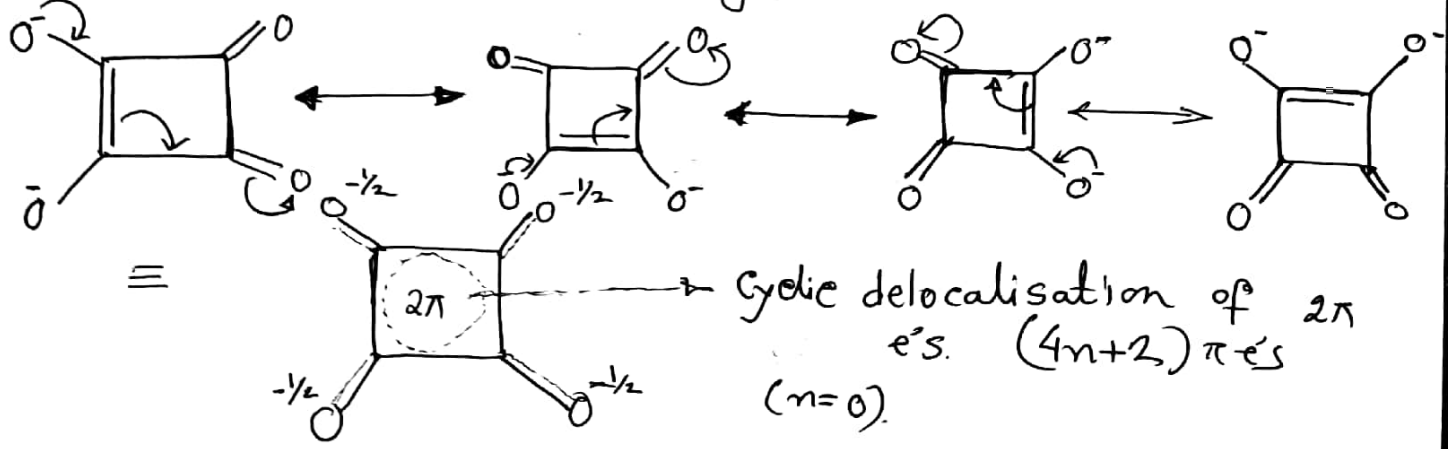


squaric acid.

dianion of squaric acid.

Like H_2SO_4 it is also dibasic acid.

This acid has strong tendency to liberate H^+ ion to even weak base H_2O, the conjugate base thus obtained is extremely stable because of gain in aromaticity.



≡ Cyclic delocalisation of 2π e's. $(4n+2)\pi$ e's $(n=0)$.