

SUBJECT - CHEMISTRY

CLASS - B.Sc (Hons) PART - II

PAPER - IV GROUP - B

TOPIC - Active methylene group or Compounds.

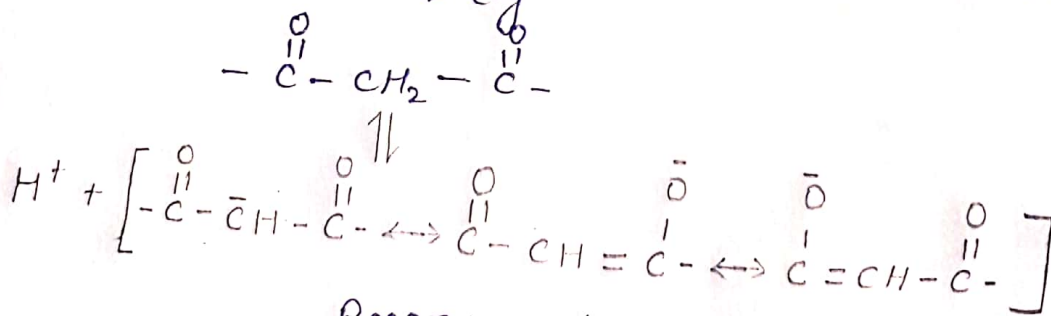
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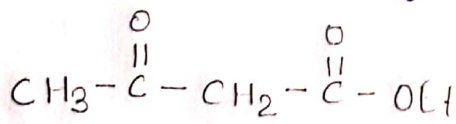
Q Explain active methylene group or Compounds.

Ans we know that $-CH_2-$ is called methylene group. When a methylene group is present between two electron withdrawing groups such as $X=O$, $-CN$, $-NO_2$ etc the H-atoms of the methylene group become acidic or active. Hence, such H-atoms can be replaced by Na or K. The activity of H-atoms of methylene group arises due to the resonance stabilisation of Carbanions e.g.

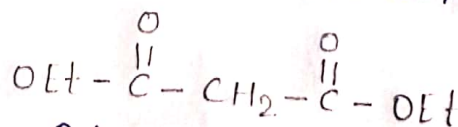


Resonance stabilised Carbanion

Such a methylene group is called active methylene group and compounds having this group as active methylene compounds e.g.



Ethyl acetoacetate
(Aceto acetic ester)



Diethyl malonate where $Et = C_2H_5-$
(Malonic ester)

Active methylene compounds and their Na-derivatives are extremely important synthetic organic reagents as almost all classes of organic compounds can be synthesized from them.