

SYNTHETIC REAGENTS 1.

Deg-III (H), 16/06/2021

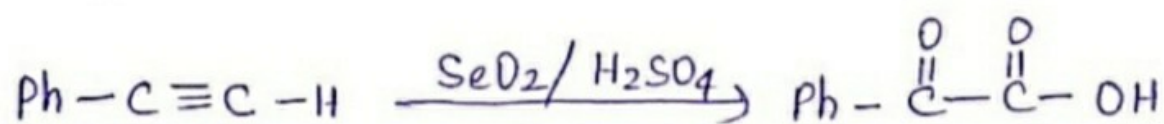
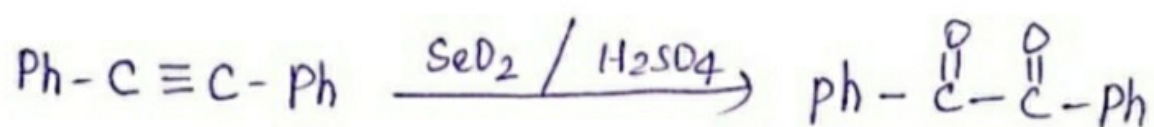
ORGANIC CHEMISTRY, PAPER-VII

TOPIC : SELENIUM DIOXIDE (L-3)

Continued..

OXIDATION OF ALKYNES

- * SeO_2 is also capable of oxidising alkynes to vicinal dicarbonyl compounds. SeO_2 with a small amount of H_2SO_4 oxidises internal alkynes to α -diketones.



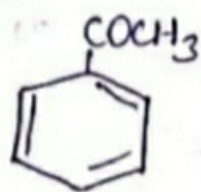
OXIDATION OF CARBONYL COMPOUND

- * A useful application of SeO_2 is the oxidation of the methyl or methylene group adjacent to the carbonyl group. Thus, aldehydes and ketones with a methyl or methylene group α -to the carbonyl group

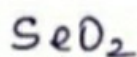
2.

are oxidised to the 1,2-dicarbonyl compounds.

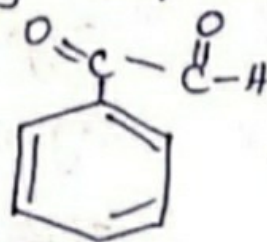
e.g.



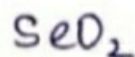
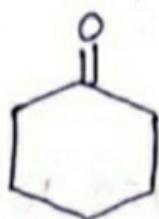
Acetophenone



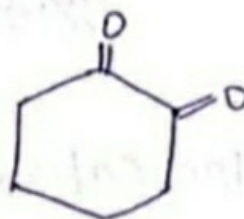
aq. Dioxane



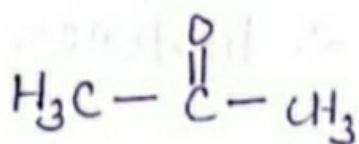
Phenylglyoxal



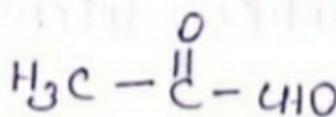
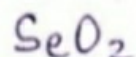
Dioxane/H₂O



1,2-cyclohexanedione



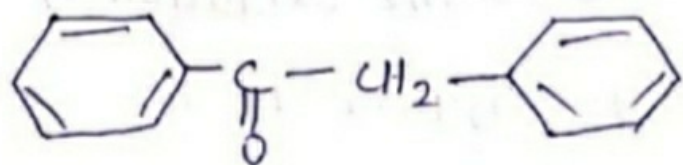
Acetone



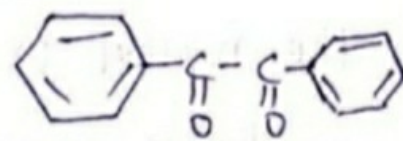
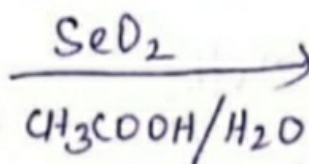
Methylglyoxal

The method is used for the synthesis of benzils.

For example, Benzil is obtained by the oxidation of phenylbenzyl ketone (Deoxybenzoin) with selenium dioxide



Deoxybenzoin



Benzil

To be continued in next lecture..