

22 SYNTHETIC REAGENTS

A
U
G. DEGREE-III (H), LECTURE-10

ORGANIC CHEMISTRY, PAPER-VII

2020 TOPIC : SELENIUM DIOXIDE

(Continued..)

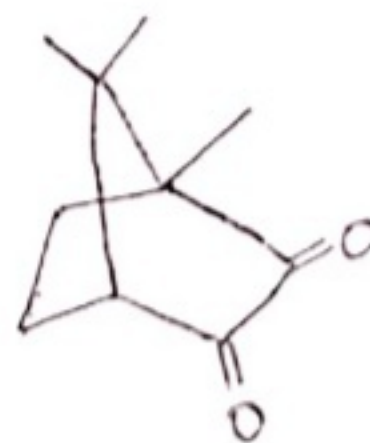
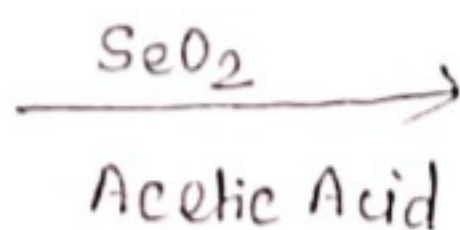
OXIDATION OF CARBONYL COMPOUND

(Continued..)

- * Camphor gives camphorquinone, an intermediate in the preparation of Hosner's acid, in about 90% yield with SeO_2 .

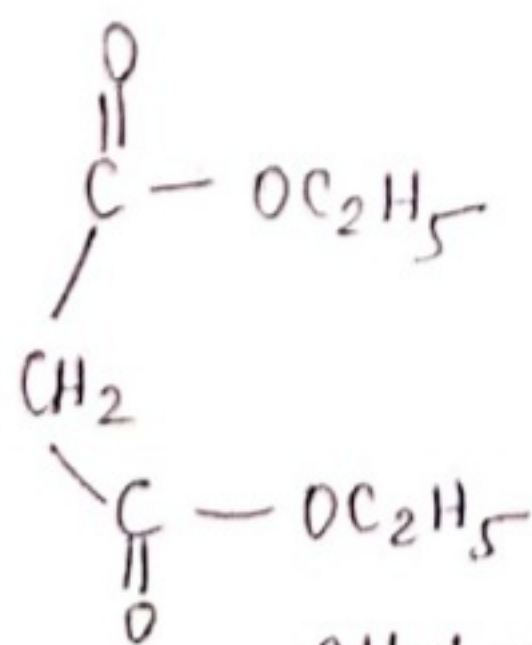


Camphor

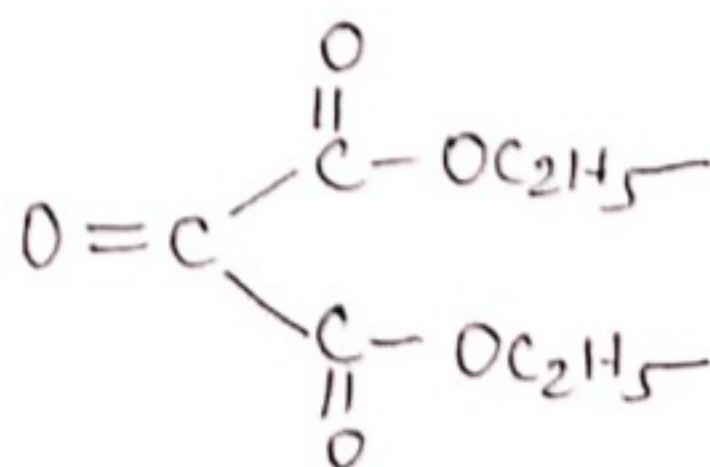
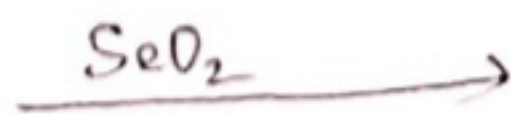


Camphorquinone

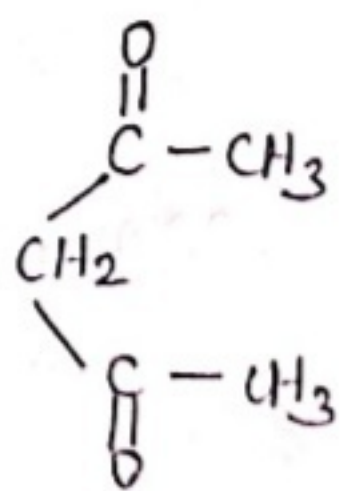
- * The oxidation of methylene group to carbonyl is easy if it is flanked by two carbonyl groups.



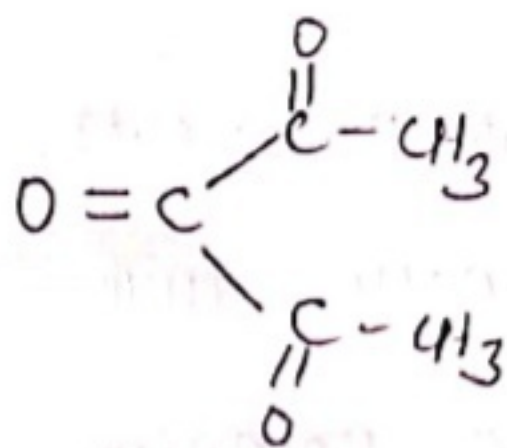
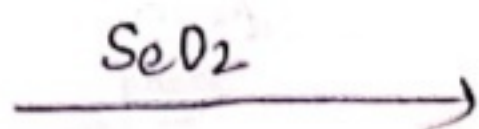
Ethyl malonate



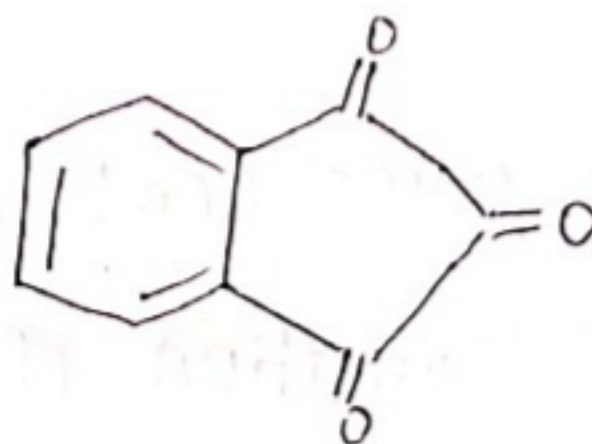
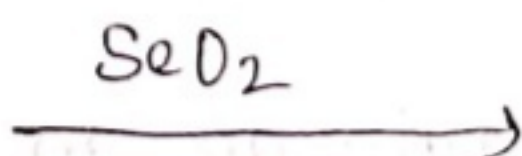
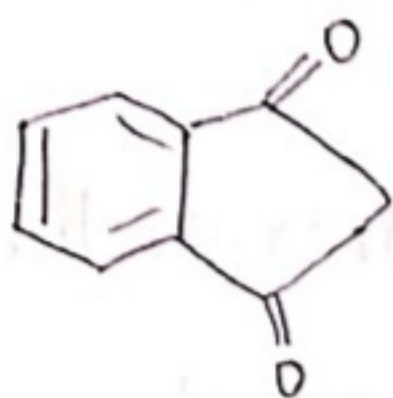
Ethyl mesoxalate



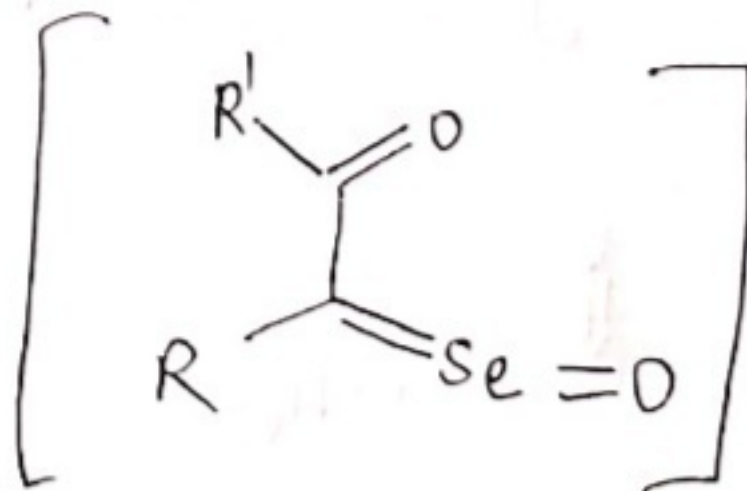
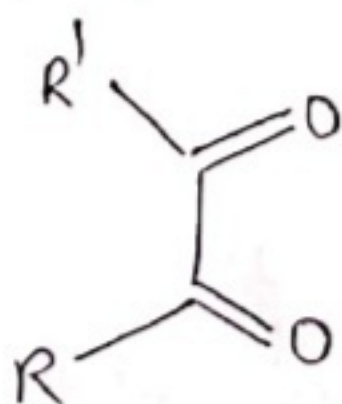
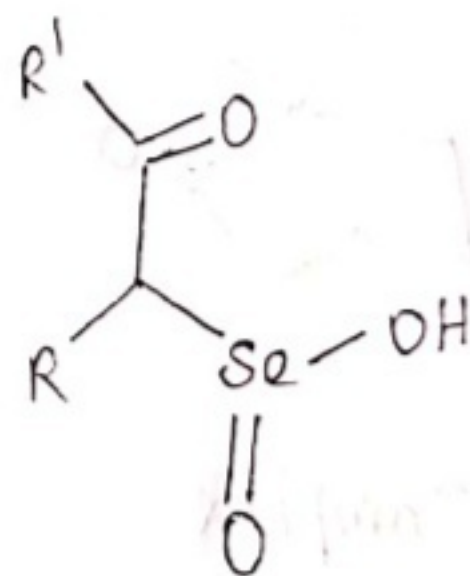
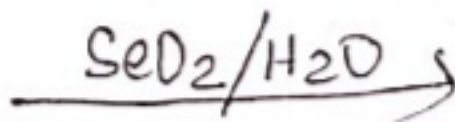
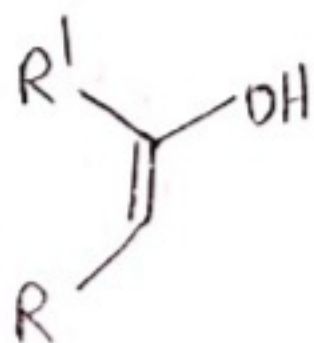
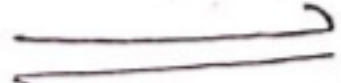
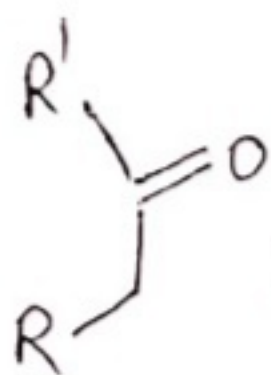
Pentane - 2,4-dione



Pentane - 2,3,4-trione

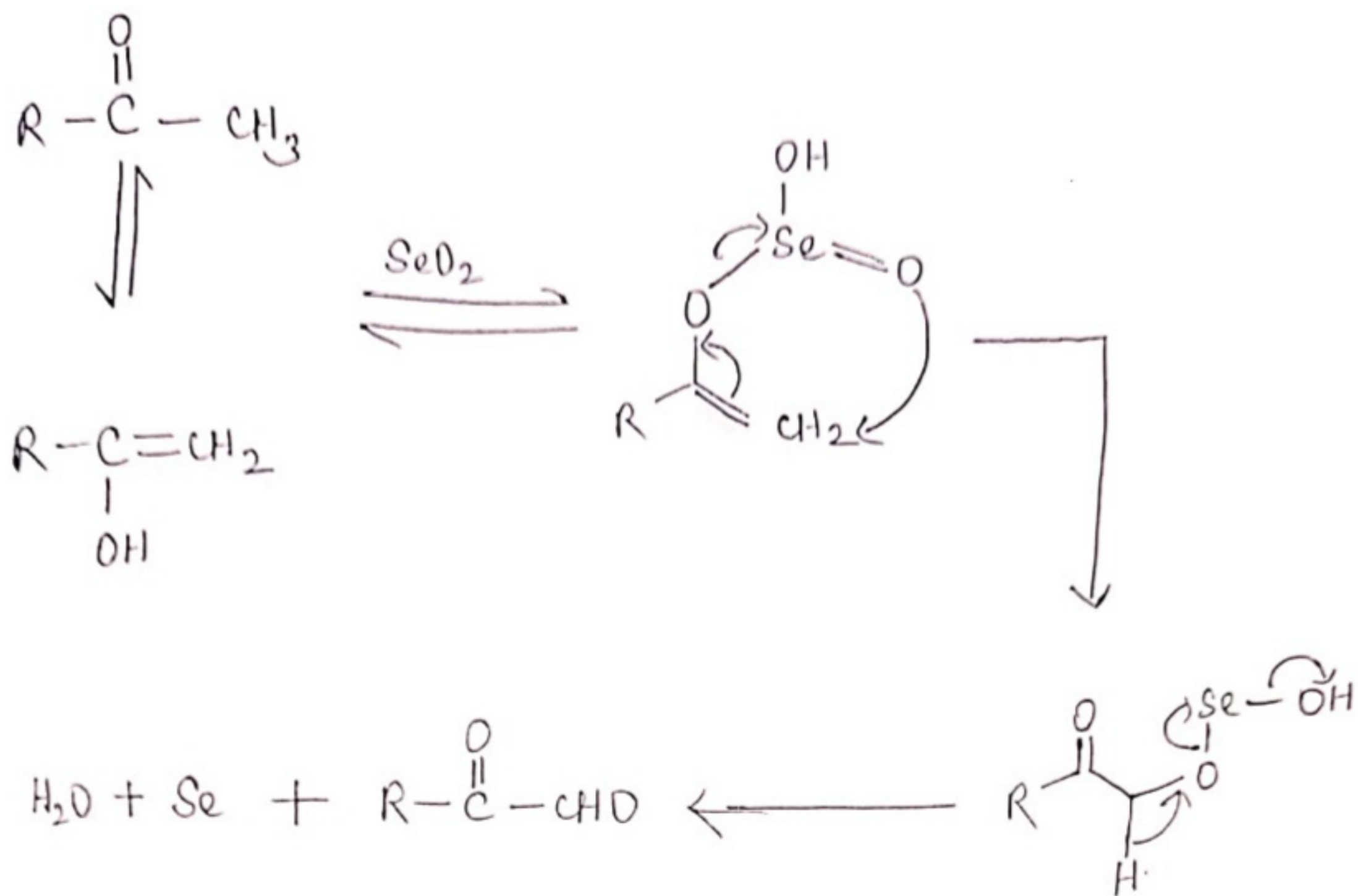


Mechanism -1



Mechanism-II

3.

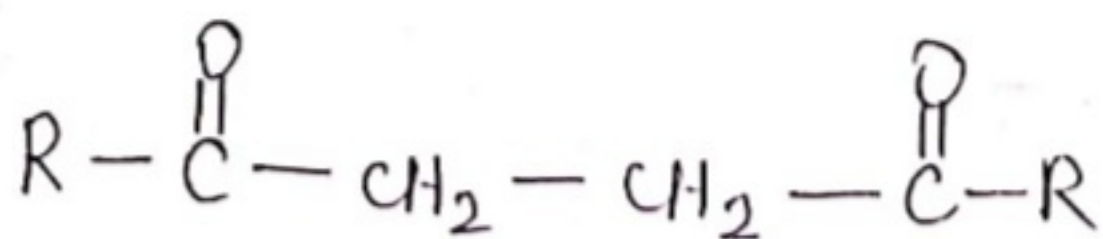


DEHYDROGENATION

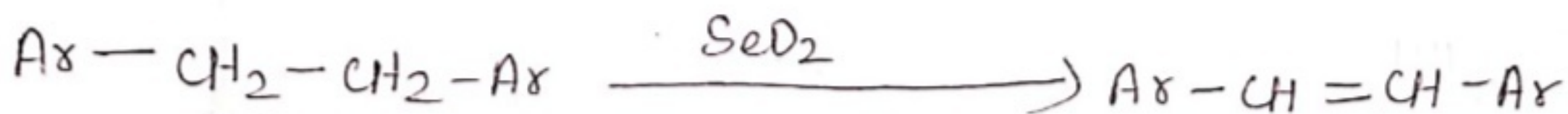
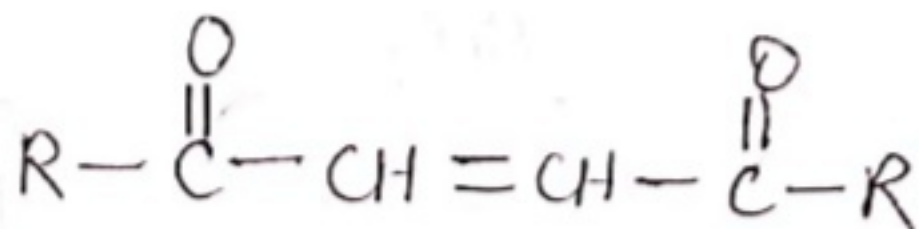
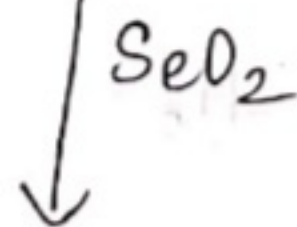
* SeO_2 is an oxidising agent but in certain cases, it converts carbonyl compounds to α,β -unsaturated carbonyl compounds by removing hydrogen.

For example SeO_2 has been used to dehydrogenate 1,4-diketones and 1,2-diaxylethane

4.



1,4-diketone



1,2-diaxyl ethane

1,2-diaxylethylene

~ The End of Selenium Dioxide ~

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