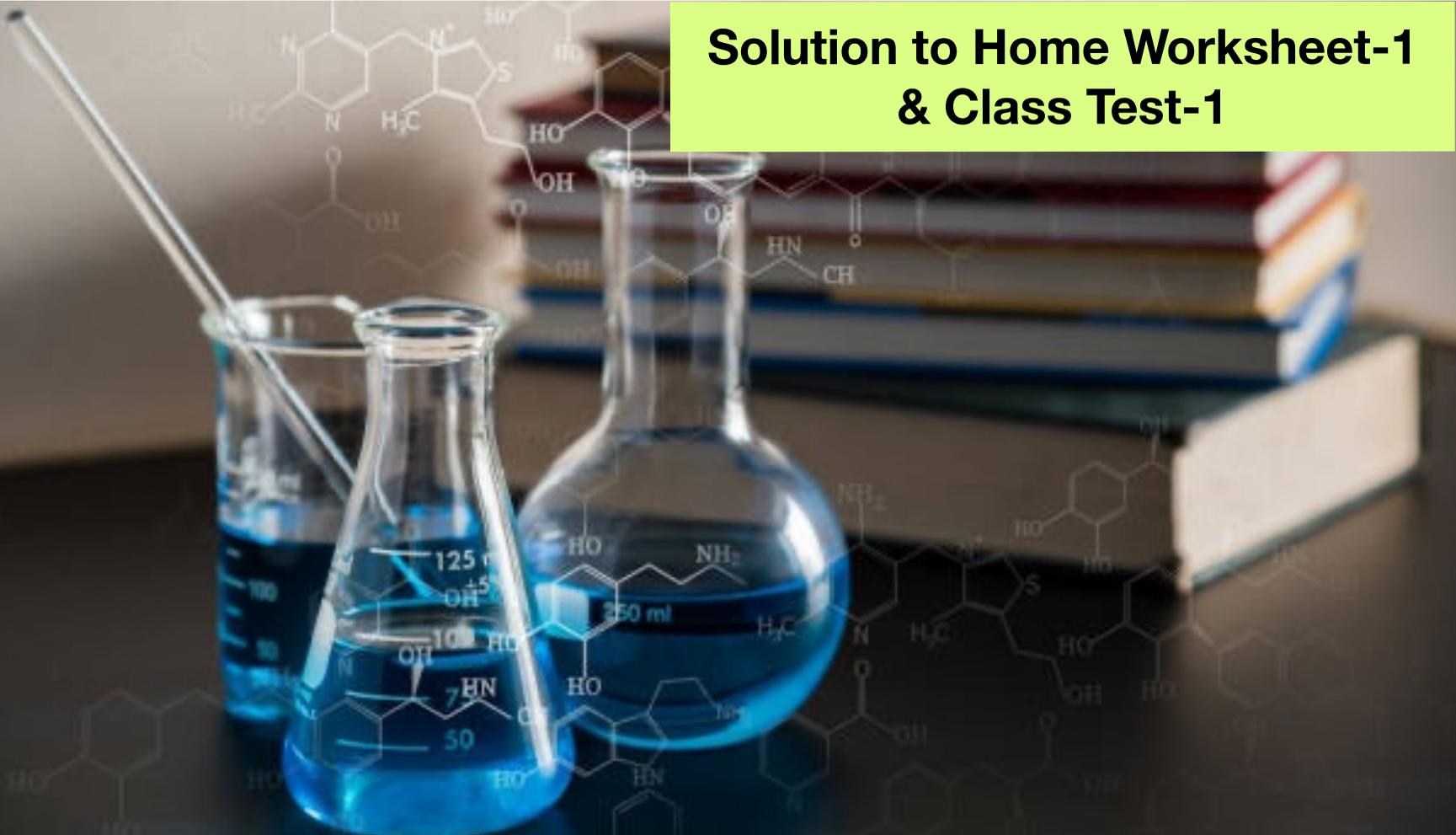
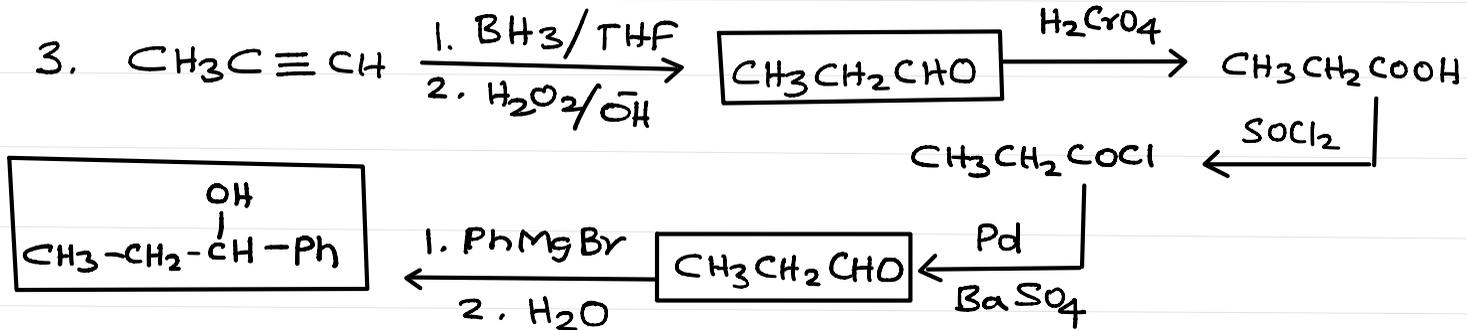
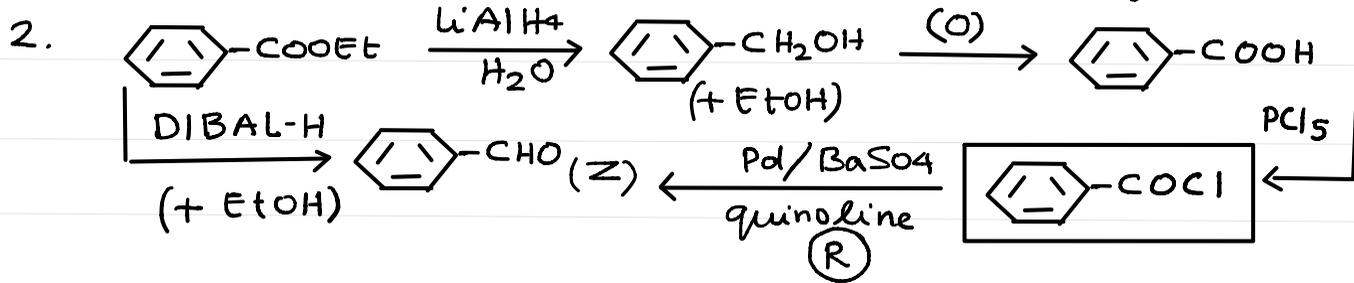
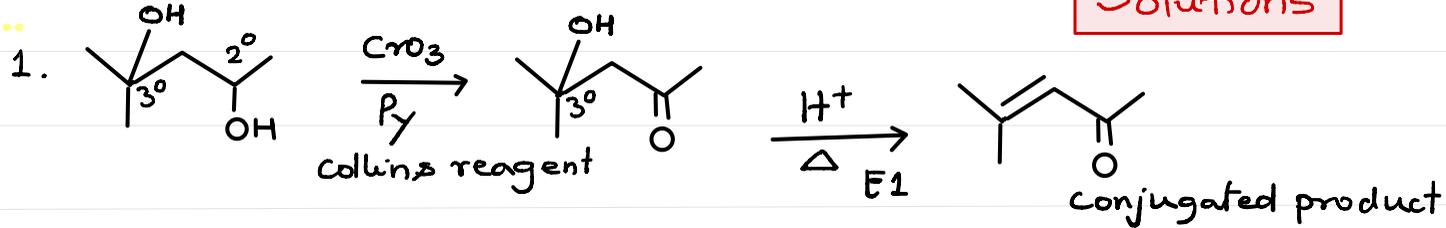


## Solution to Home Worksheet-1 & Class Test-1

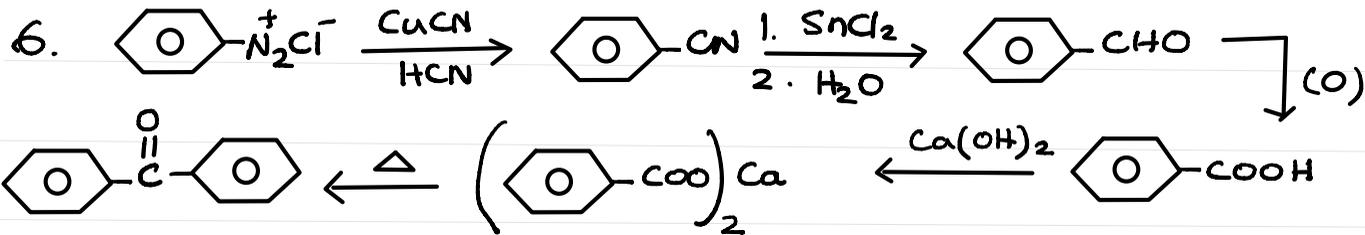
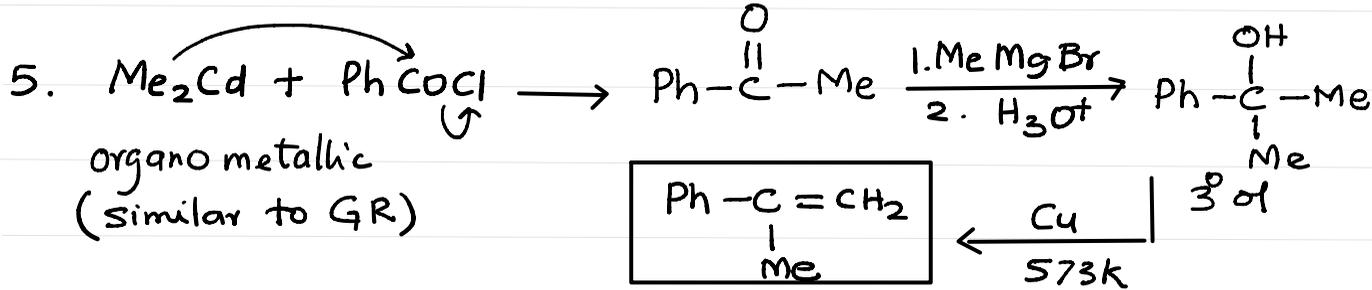
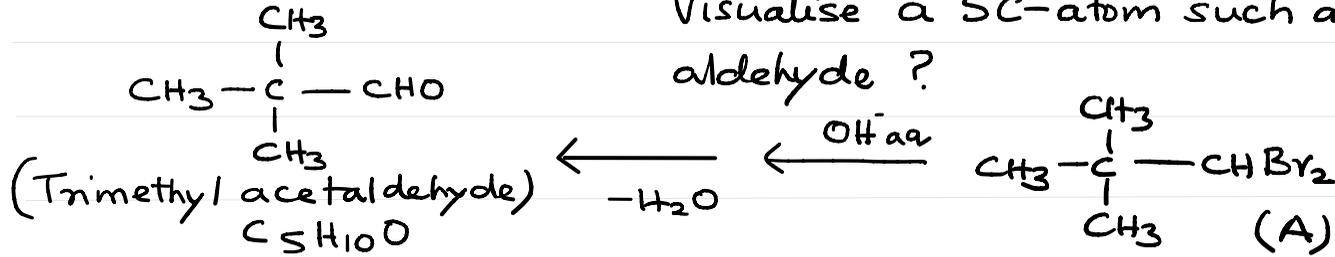


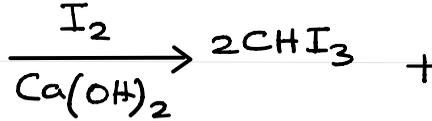
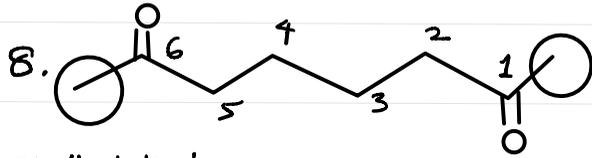
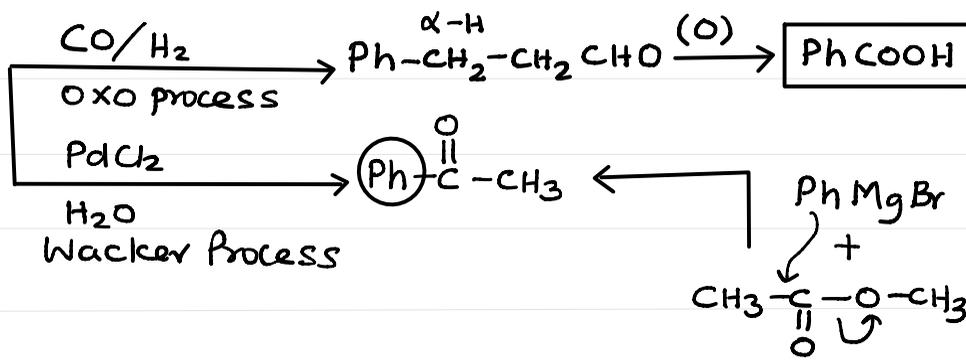
## Solutions



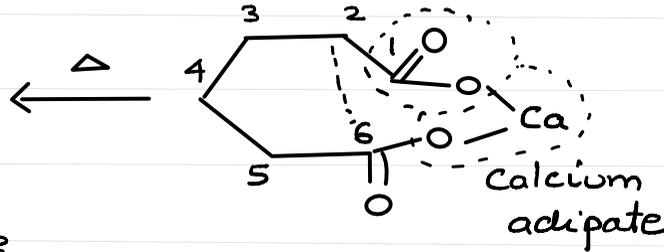
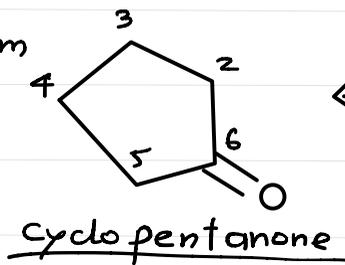
4.  $A (C_5H_{10}Br_2) \xrightarrow{KOH_{aq}}$  An aldehyde with NO- $\alpha$ -H

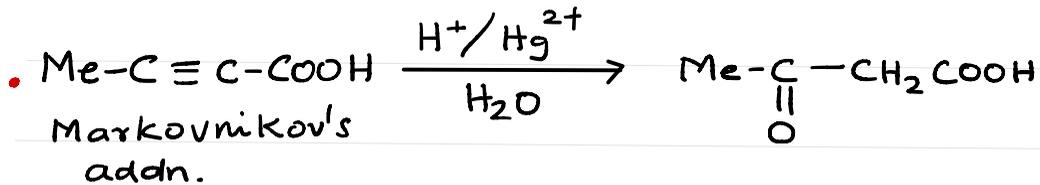
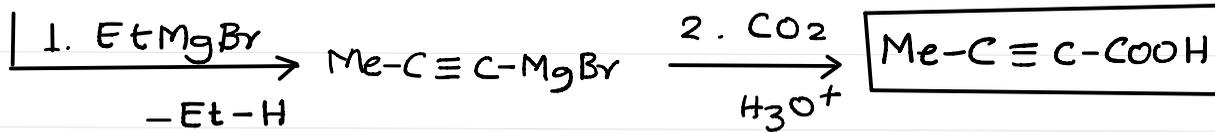
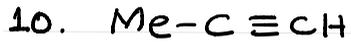
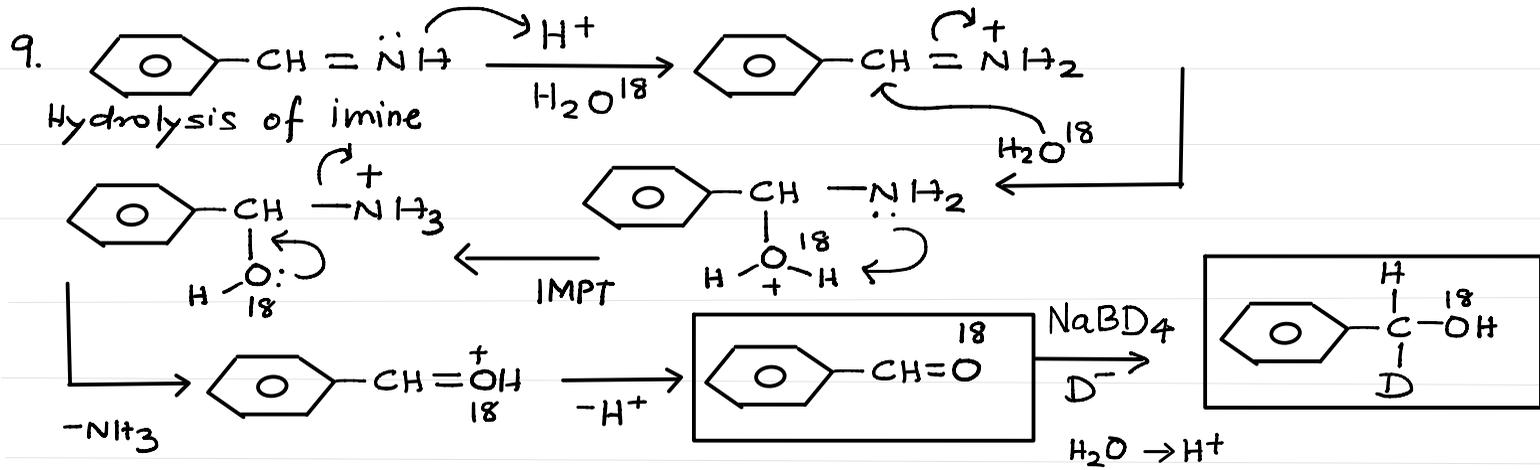
Visualise a 5C-atom such an aldehyde?





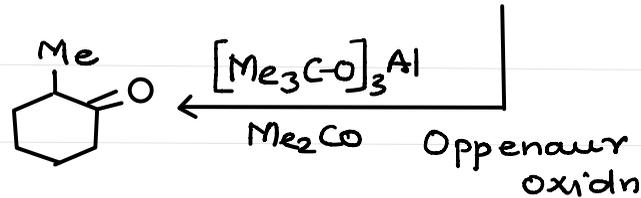
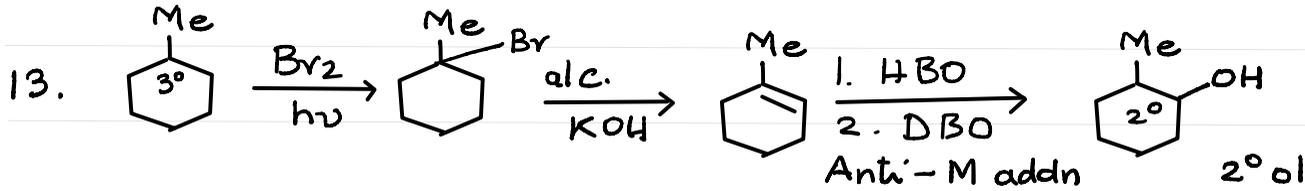
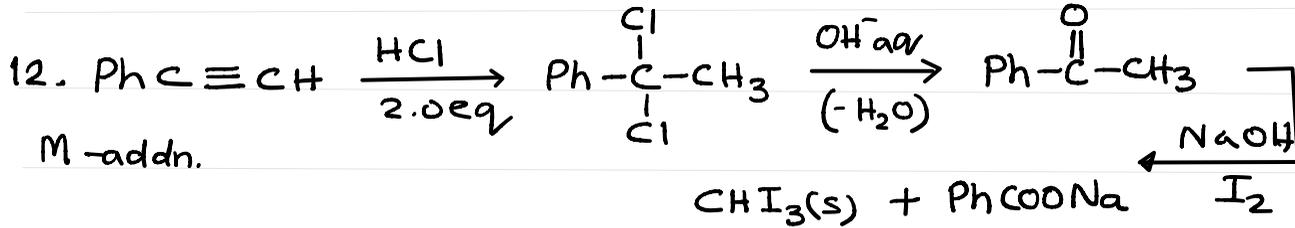
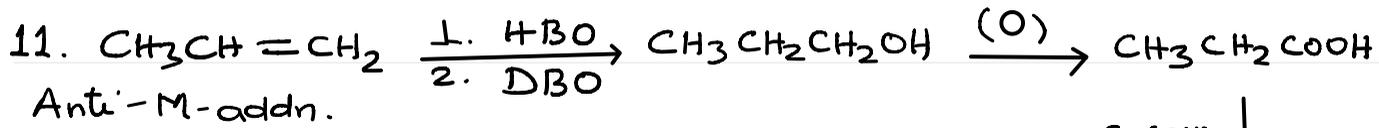
Methyl ketone  
give Iodoform  
Test.

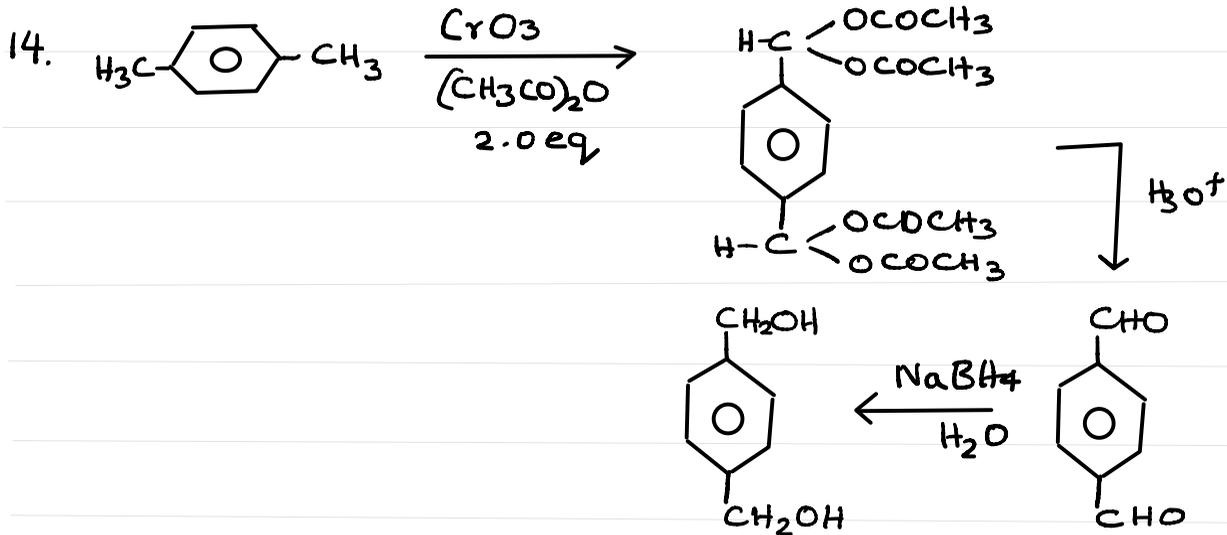




In this case visualise formation of methyl ketone

• Note:  $\text{Me-CH}_2\text{-C(=O)-COOH}$  is not formed





### ANSWER KEY FOR PART TEST-1/Aldehydes & Ketones

1	2	3	4	5	6	7	8	9	10
C	ABC	C	AB	BCD	C	B	C	A	B
11	12	13	14	15	16	17	18	19	20
C	C	D	C	ABC	C	D	C	B	D
21	22	23	24	25	26	27	28	29	30
B	A	C	C	B	D	ACD	B	D	C

## Solutions to important questions from Class Test:

Recall class of Grignard Reagent where we discussed ease of Nucleophilic addition in Aldehydes & ketones.

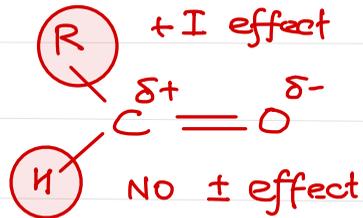
Note: Relative reactivity of aldehyde & ketones towards a  $\text{Nu}^-$



Rate of Nu addn

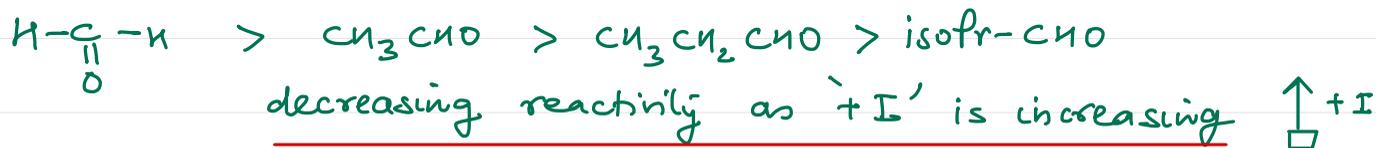
$\propto$  ease of attack of Nu  $\propto$  Ease of formation of tetrahedral intermediate  
 $\propto$  electrophilic character of carbonyl carbon

In Aldehydes:

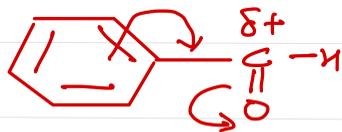


- +I effect of R i.e. ERG/EDG:  $\text{R}'$  group decreases the electrophilic character of carbonyl group via Electron releasing / donating effect

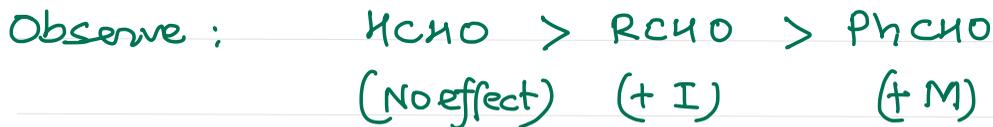
. As a result ..... reactivity among aldehydes :



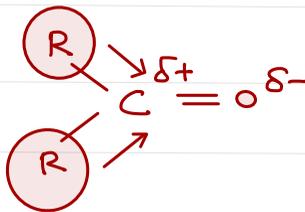
Note: In benzaldehyde reactivity is further less! why?



+M effect (> +I) of benzene ring decreases electrophilic character



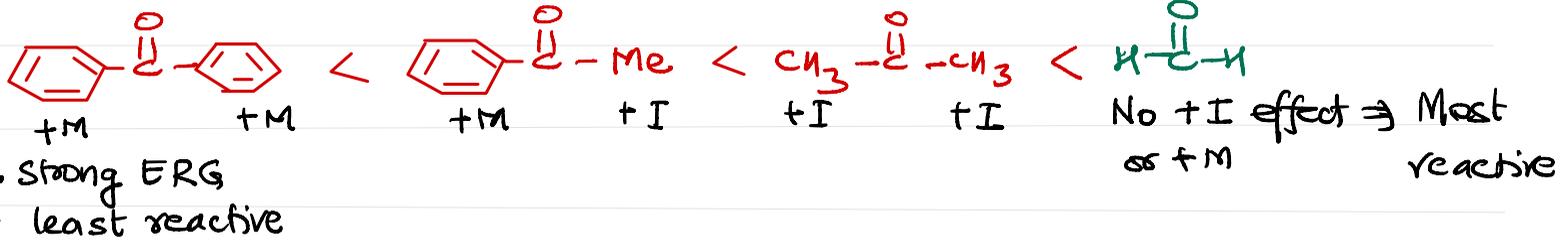
In ketones; observe that there are 2' alkyl groups (R) & hence increased +I effect & decreased reactivity





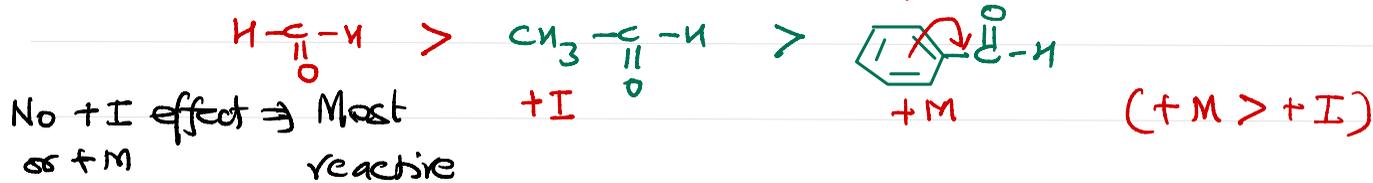
14. The increasing order of the rate of nucleophilic addition is :

- I. HCHO      II. CH<sub>3</sub>COCH<sub>3</sub>      III. PhCOCH<sub>3</sub>      IV. PhCOPh  
 (A) I < II < III < IV    (B) IV < II < III < I    (C) IV < III < II < I    (D) III < IV < II < I



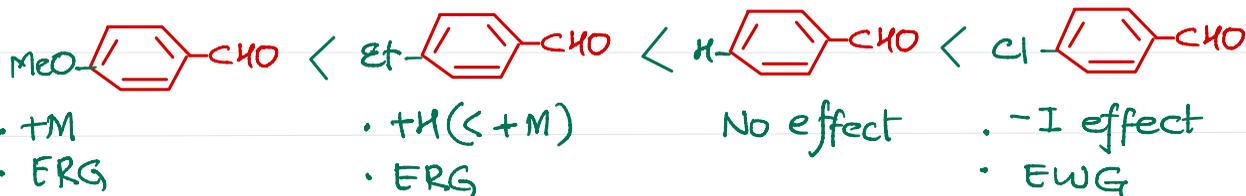
17. The relative rate of hydride ion (a nucleophile) addition among given compound is :

- I. HCHO      II. CH<sub>3</sub>CHO      III. C<sub>6</sub>H<sub>5</sub>CHO  
 (A) I > III > II    (B) III > II > I    (C) I = II > III    (D) I > II > III

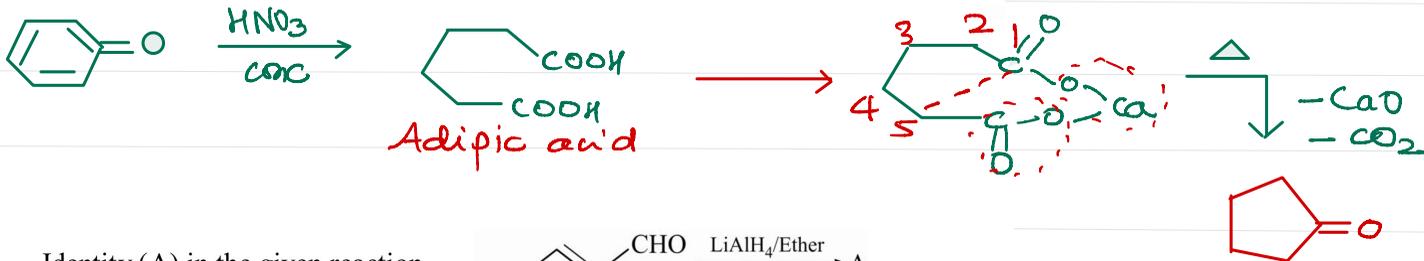
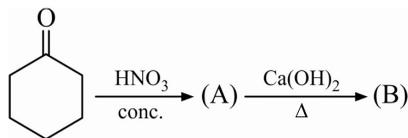


30. Which one of the following is the most reactive towards nucleophilic addition on carbonyl group ?

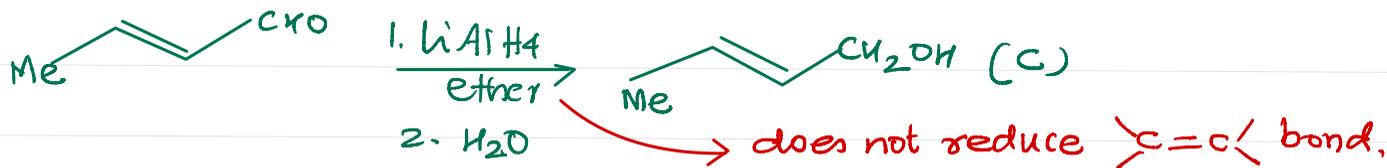
- (A) Benzaldehyde  
 (B) p-Methoxybenzaldehyde  
 (C) p-Chlorobenzaldehyde  
 (D) p-Ethylbenzaldehyde



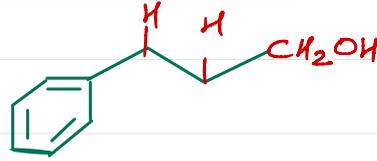
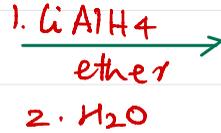
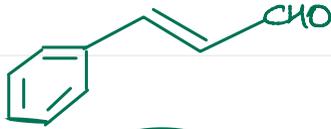
23. Identify the product (B) in given reaction.



24. Identity (A) in the given reaction.



25. Identity (A) in the given reaction.



Note: Both  $-\text{CHO}$  &  $\text{>C}=\text{C}<$  are reduced as  $\text{>C}=\text{C}<$  is in conjugation with phenyl ring along with  $-\text{CHO}$  group.

A wooden clothespin is attached to a piece of light-colored paper with a red and blue striped border. The paper is pinned to a dark wooden surface. The words "THANK YOU" are written in a bold, black, sans-serif font across the center of the paper.

THANK YOU