

DEGREE-II (HONS)

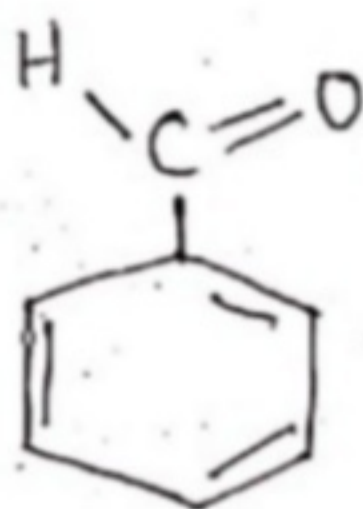
1.

24/11/2020

Topic - Preparation, Properties & Uses of "BENZALDEHYDE".

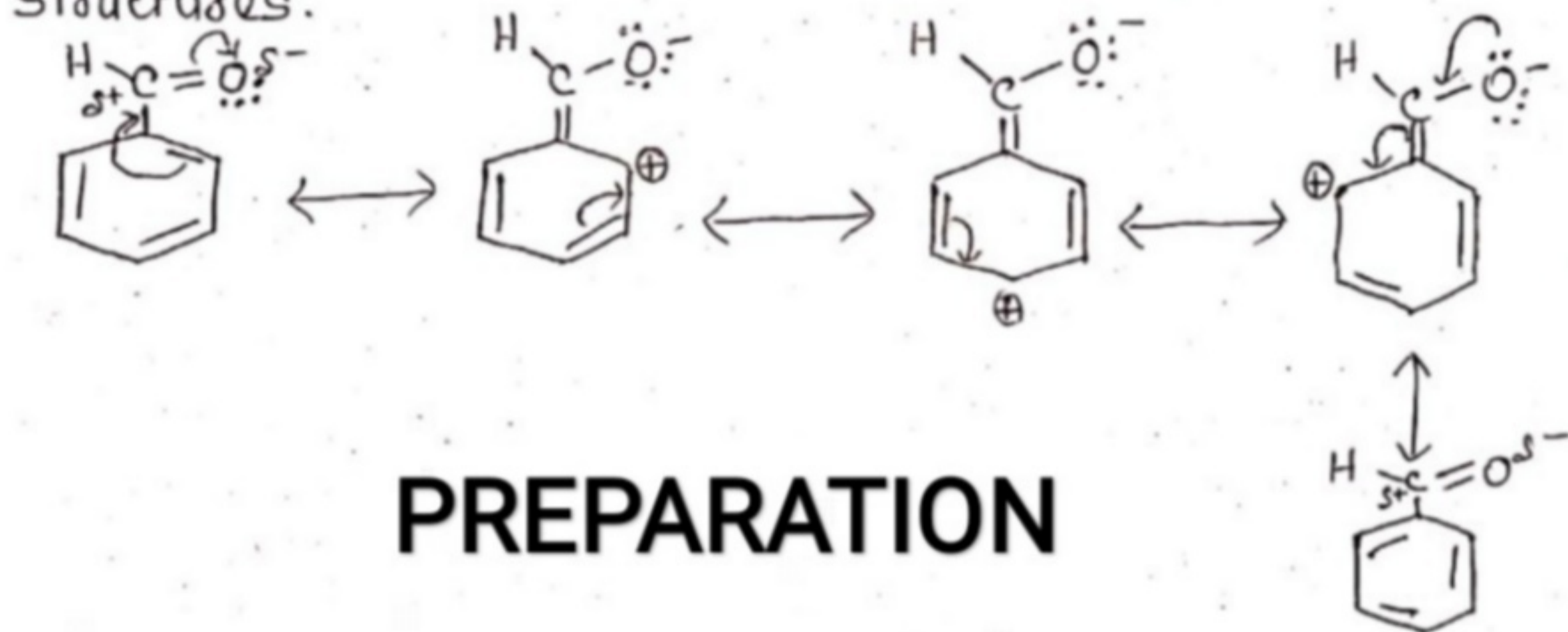
(Revision)

All carbon are SP² hybridised.



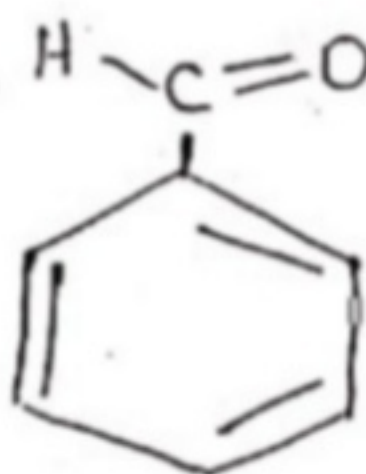
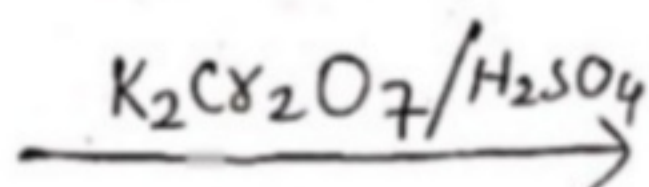
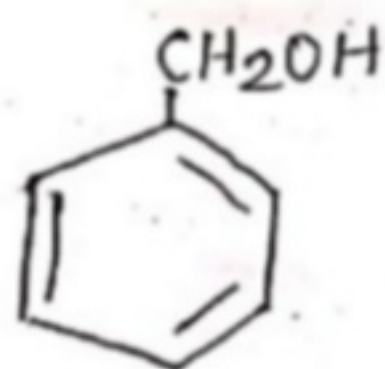
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According to resonance theory, benzaldehyde is considered to be hybrid of the following resonance structures.



PREPARATION

1. By oxidation of Benzyl alcohol

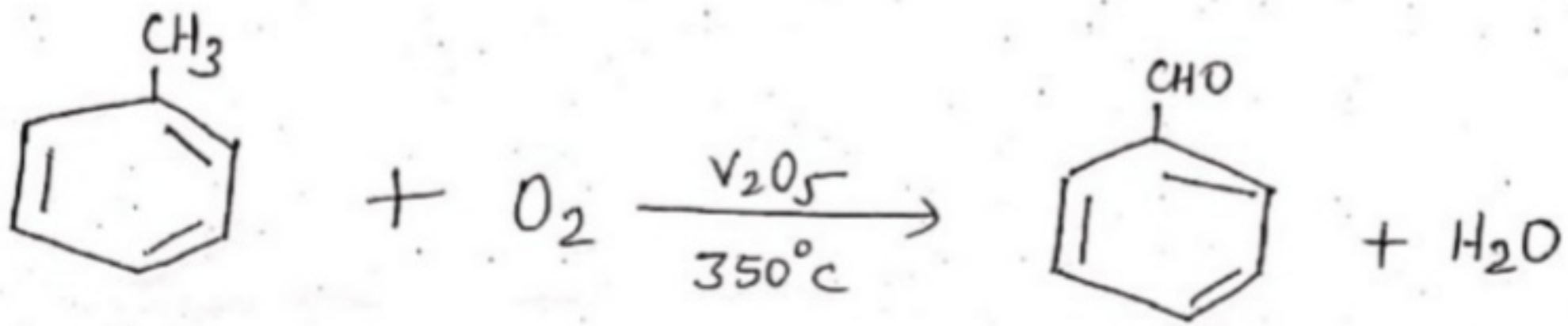


Benzyl alcohol

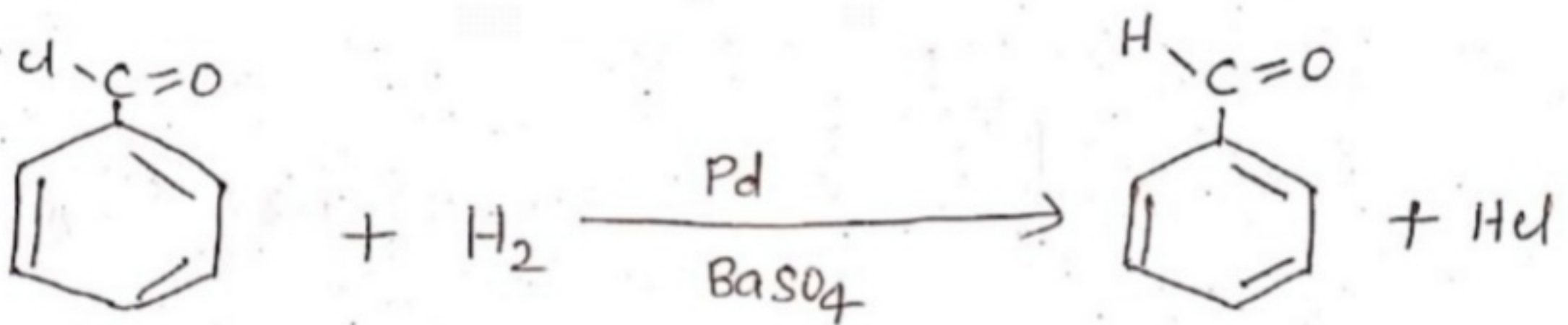
Benzaldehyde

2. By oxidation of Toluene

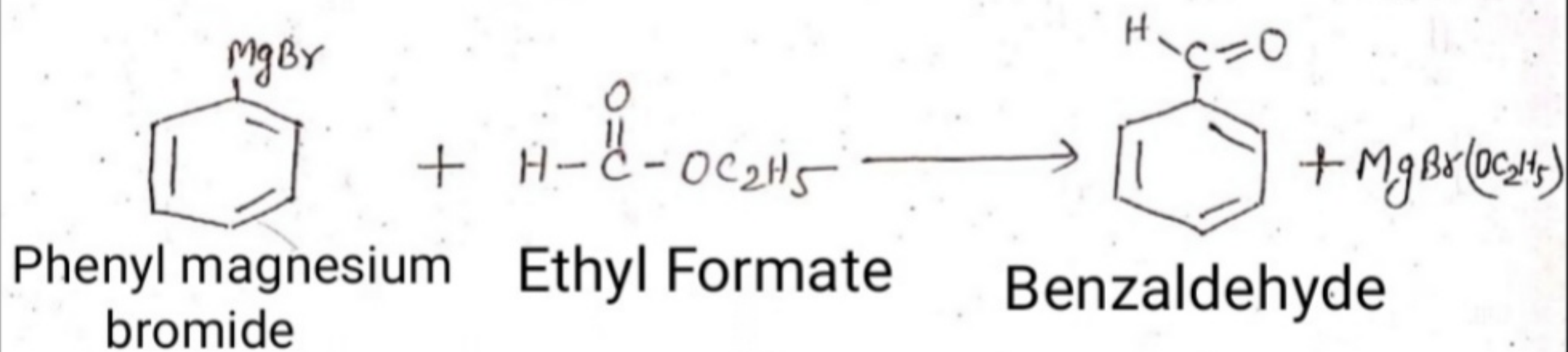
2.



3. By Rosenmund Reduction



4. By Grignard Reaction



PHYSICAL PROPERTIES

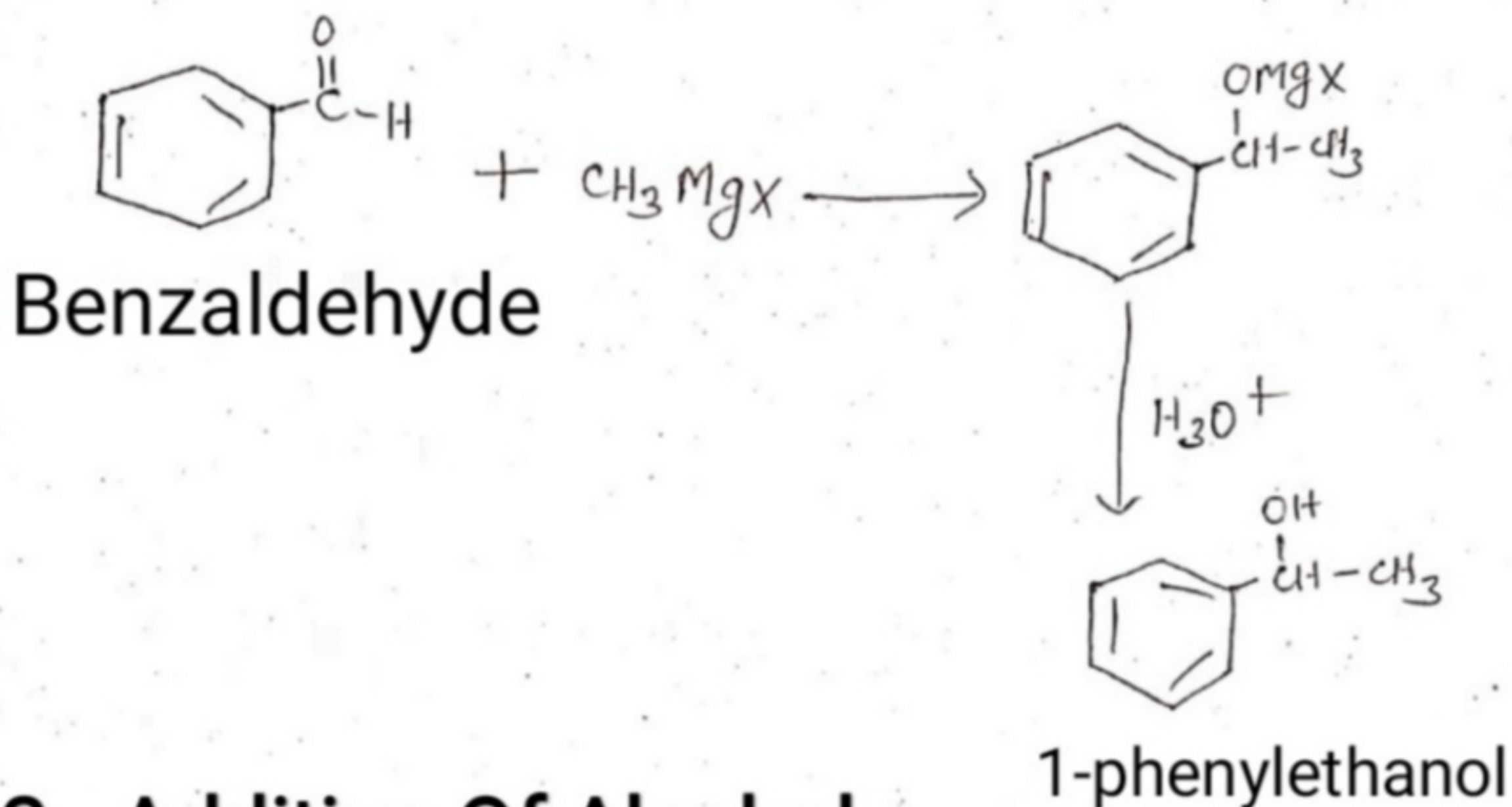
- * Benzaldehyde is a colourless liquid, b.p = 179°C
- * It has a pleasant almond like odour.
- * Soluble in ethanol and diethyl ether.
- * It is steam volatile.

CHEMICAL PROPERTIES

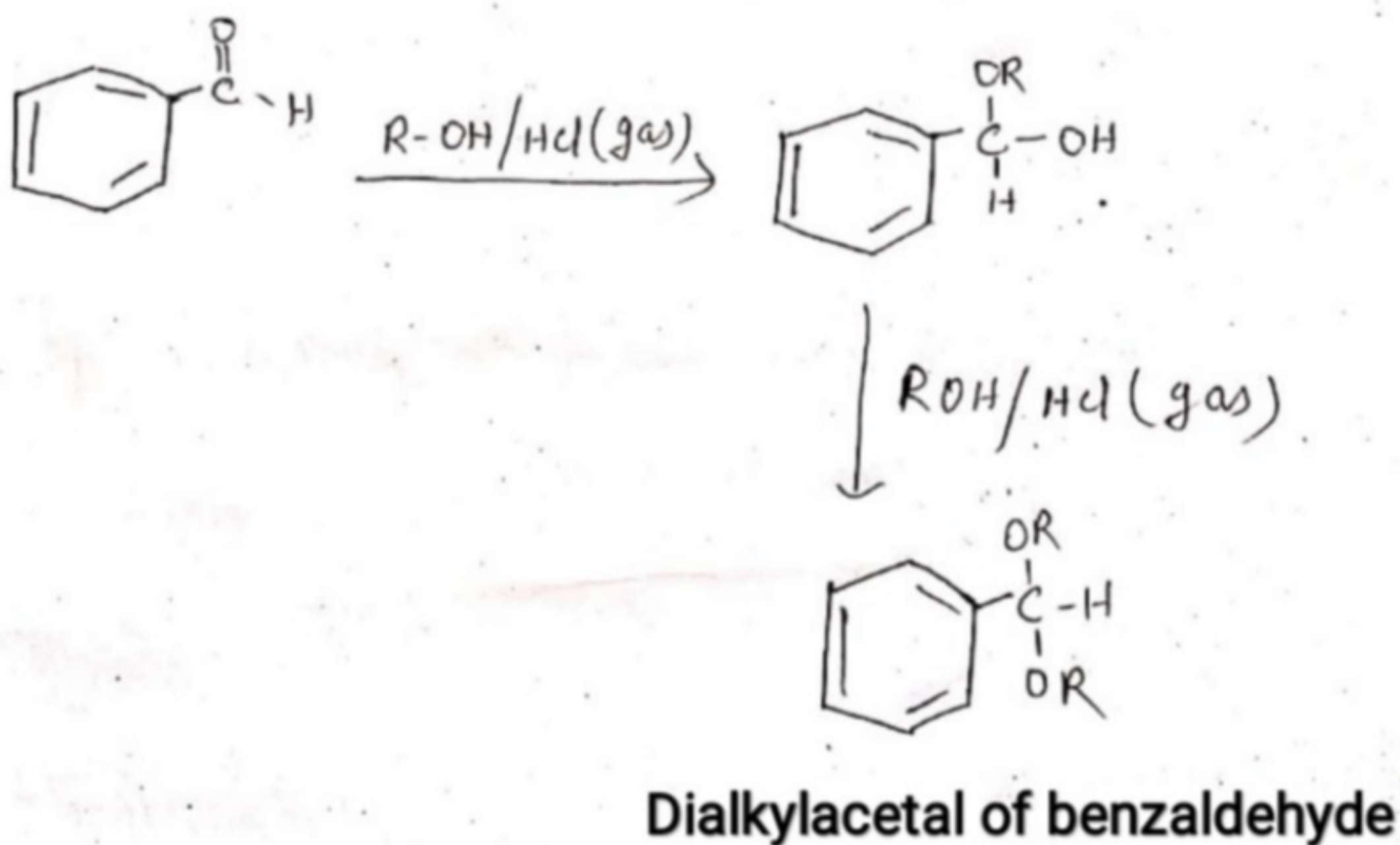
3.

Benzaldehyde undergoes Nucleophilic Addition Reaction

1. Addition of Grignard Reagents

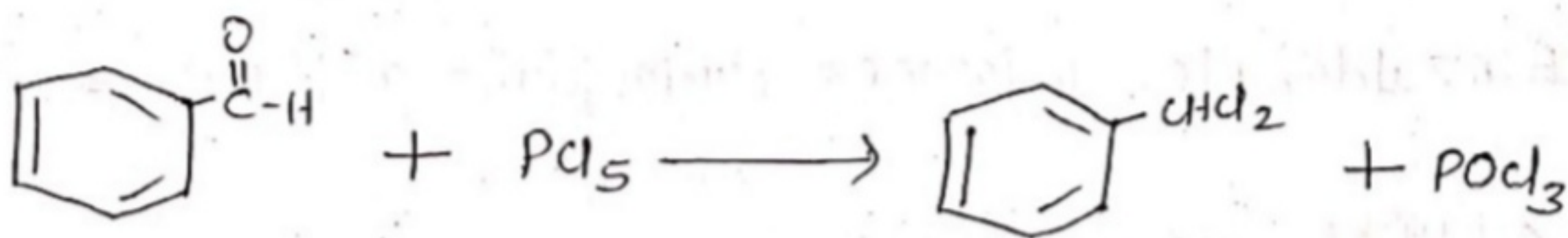


2. Addition Of Alcohol



3. Reaction with PCl₅

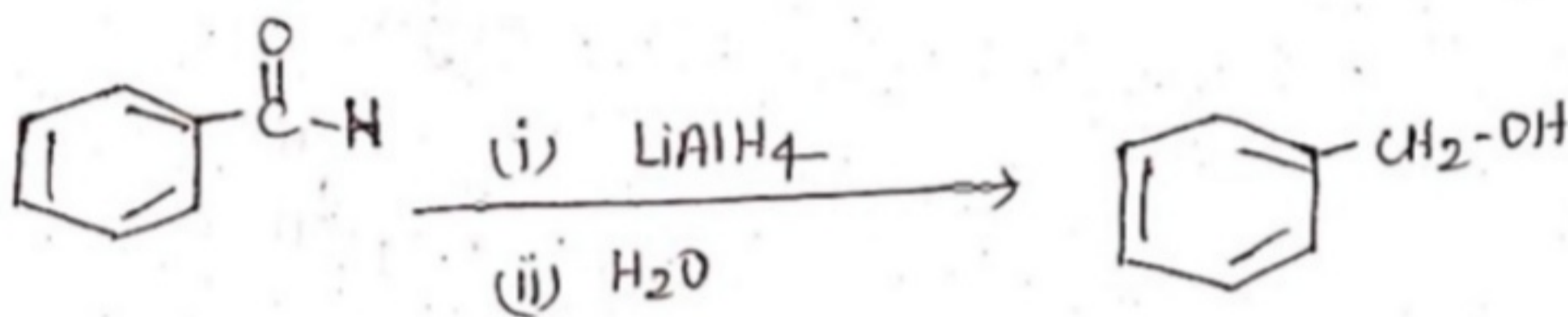
4.



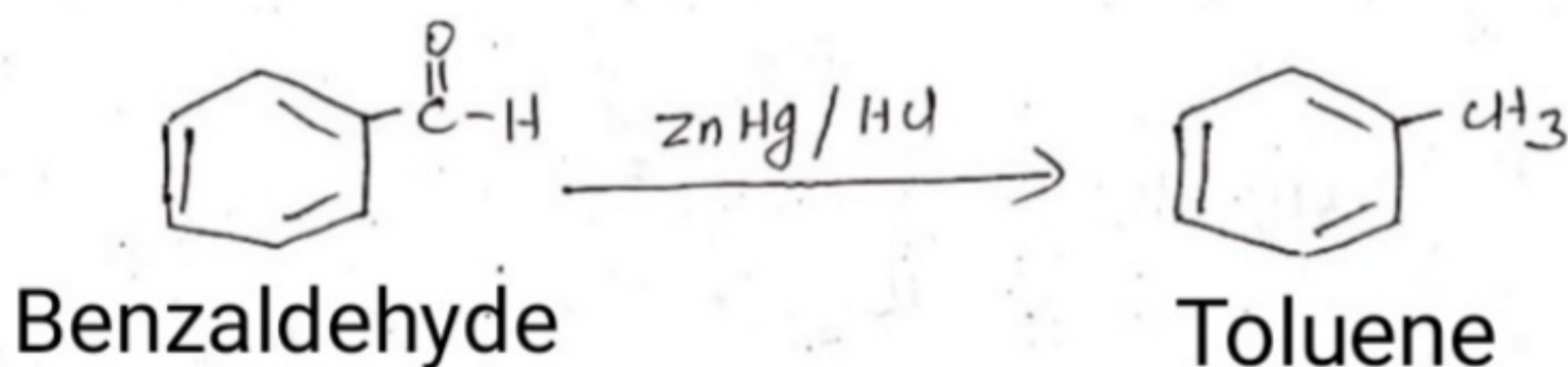
4. Reduction

Different products are obtained with different reagents.

a. With LiAlH₄, Benzyl alcohol is formed.



b. Clemmensen Reduction



USES OF BENZALDEHYDE

Benzaldehyde is used :-

1. as flavouring.
2. in perfumes.
3. in the manufacture of dyes.

**Benzaldehyde
Completed.**