

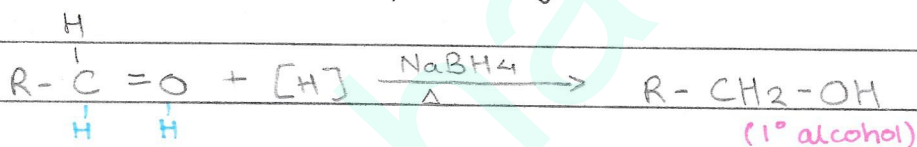
Carbonyl Compounds

Q-1) What are carbonyl compounds.

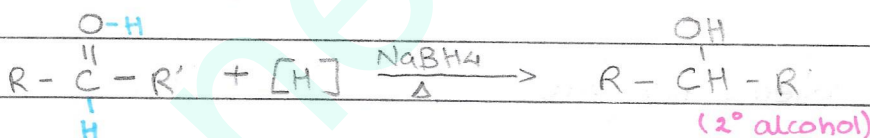
> Carbonyl compounds are aldehydes (formed from oxidation of 1°-OH) and ketones (oxidation of 2°-OH).
[C=O bond in compounds]

Q-2) Reduction reaction of aldehydes + ketones.

aldehyde

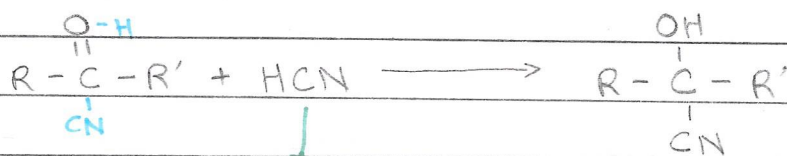


ketone



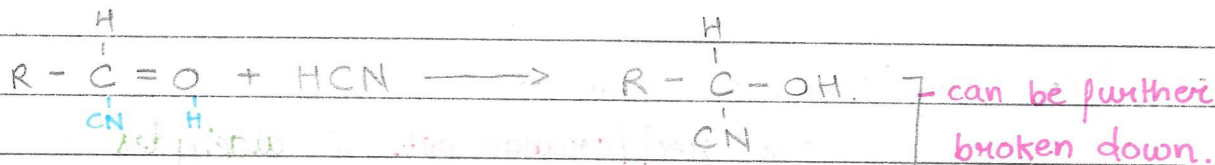
Q-3) Nucleophilic addition with HCN

ketone



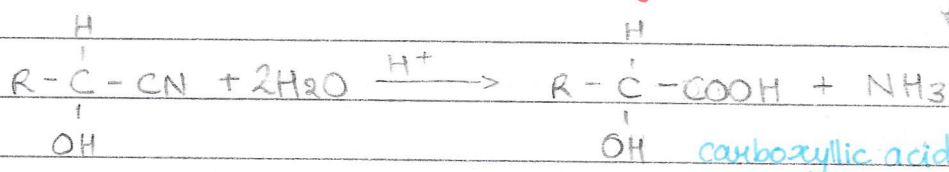
formed by KCN + H₂SO₄

aldehyde

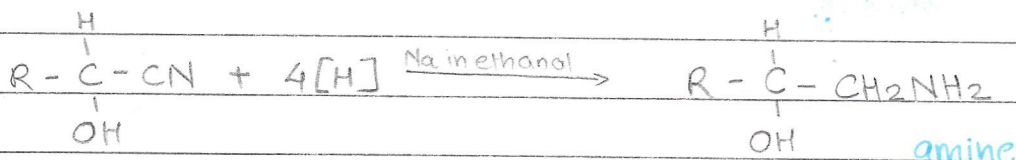


→ used to increase C-chain length.

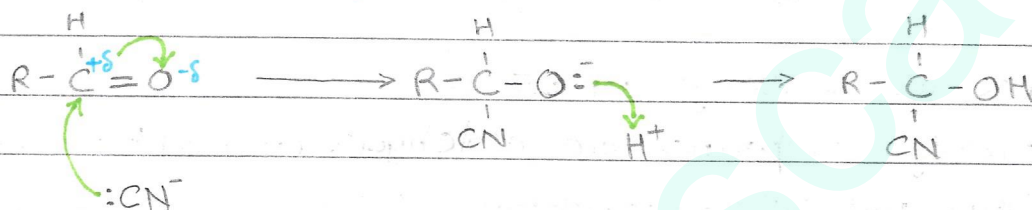
acidic hydrolysis



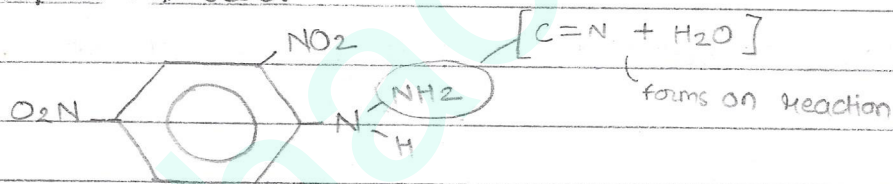
reduction



Mechanism: nucleophilic addition.



Q-4) 2,4 DNP / DNPH test.

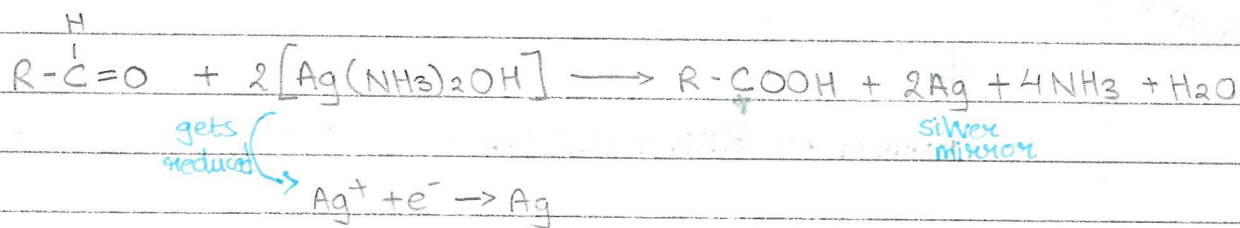


If aldehyde or ketone is present, orange / red ppt. will form.

Q-5) Test with Tollen's Reagent.

Solution will give black ppt. or Ag mirror (silver mirror) if aldehydes are present.

No change if ketones present → it'll remain colourless



Q-6) Test with Fehling's Solution

Solution will give red / orange ppt. if aldehydes are present.

- no change (remains blue) if ketones present.

