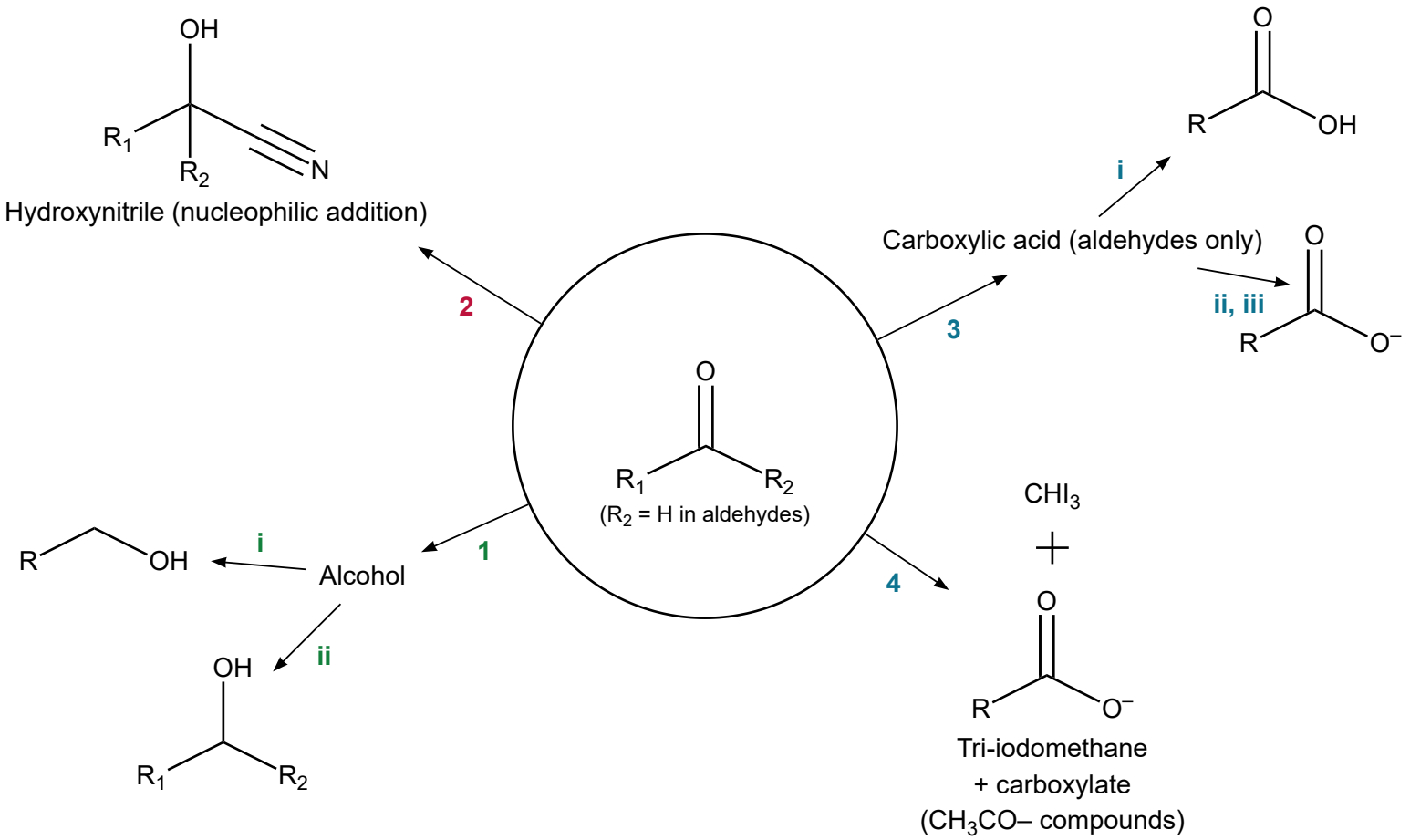
Aldehydes and Ketones Map

Cambridge International AS & A Level Chemistry · Topic 17 Carbonyl compounds



1 reduction: [H]; $NaBH_4$ or $LiAlH_4$, $NaBH_4$ in water or ethanol; $LiAlH_4$ in dry ether
i from aldehydes → primary alcohol
ii from ketones → secondary alcohol

2 addition: HCN, KCN as catalyst, heat (e.g. ethanal, propanone)

3 oxidation: [O]
i acidified $K_2Cr_2O_7$ or acidified $KMnO_4$, heat under reflux → carboxylic acid
ii Tollens' reagent, warm; silver mirror → carboxylate
iii Fehling's reagent, warm; blue → red-brown precipitate → carboxylate

4 oxidation (iodoform): alkaline I_2(aq), warm; yellow precipitate

Test for C=O: 2,4-DNPH gives an orange precipitate.
Ketones are not oxidised by Tollens' or Fehling's reagents.

reduction addition oxidation

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