

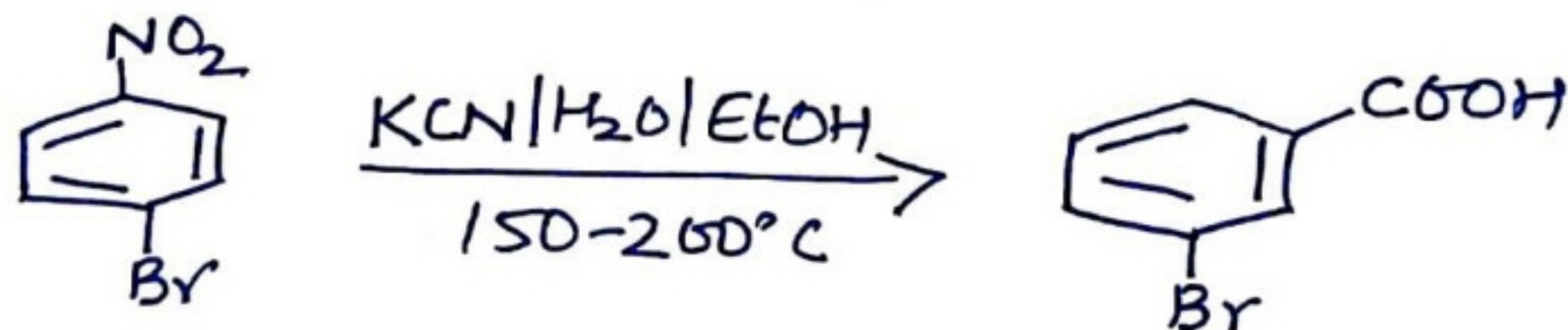
Von Richter Rearrangement

In this video, we are going to learn

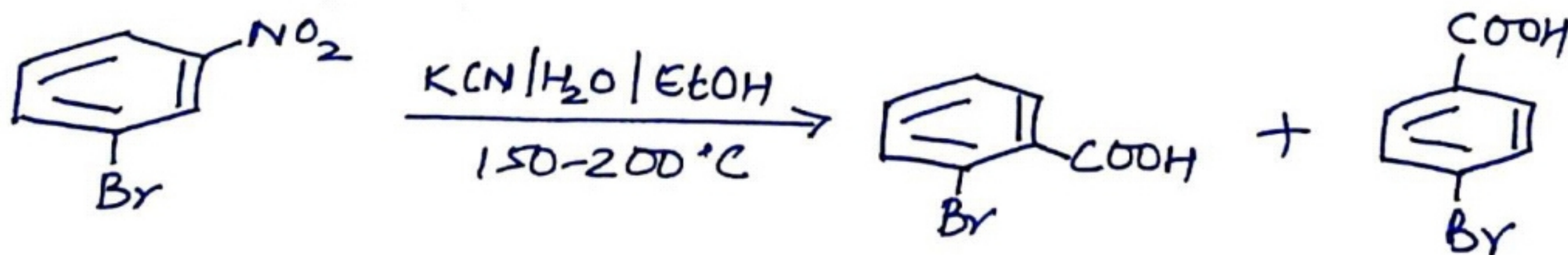
- (1) What is Von Richter Rearrangement?
- (2) Mechanism??
- (3) Evidences for the proposed mechanism.

Von Richter Rearrangements

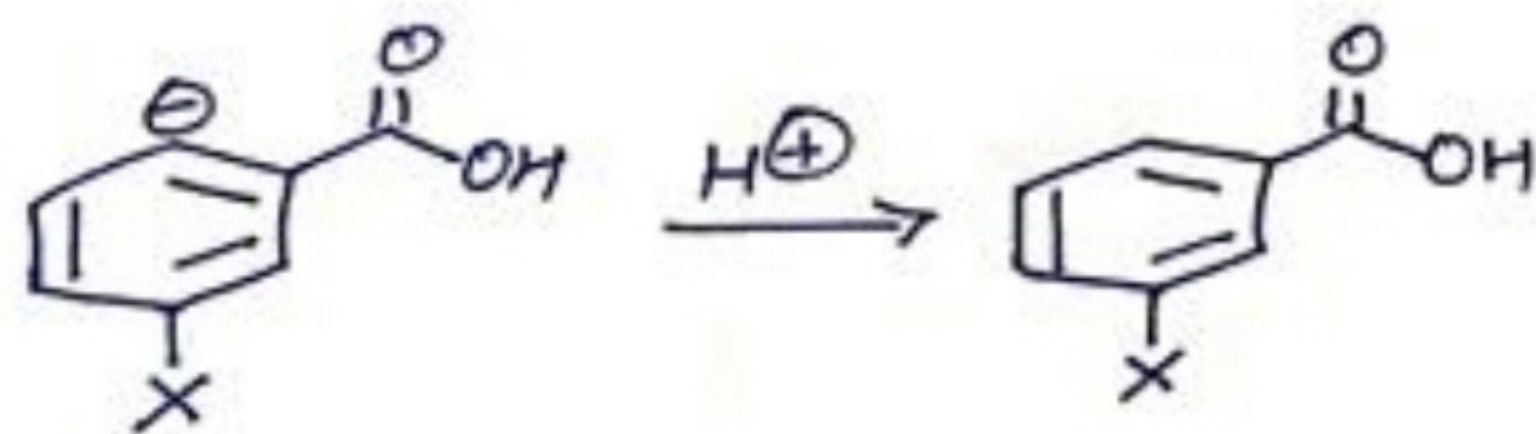
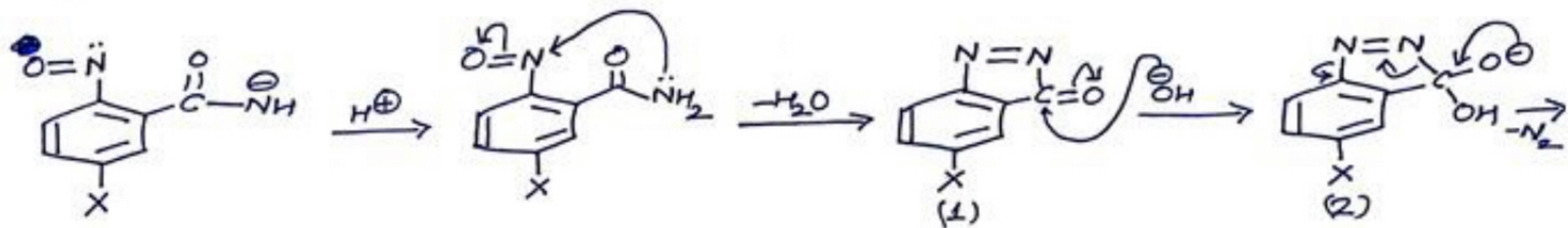
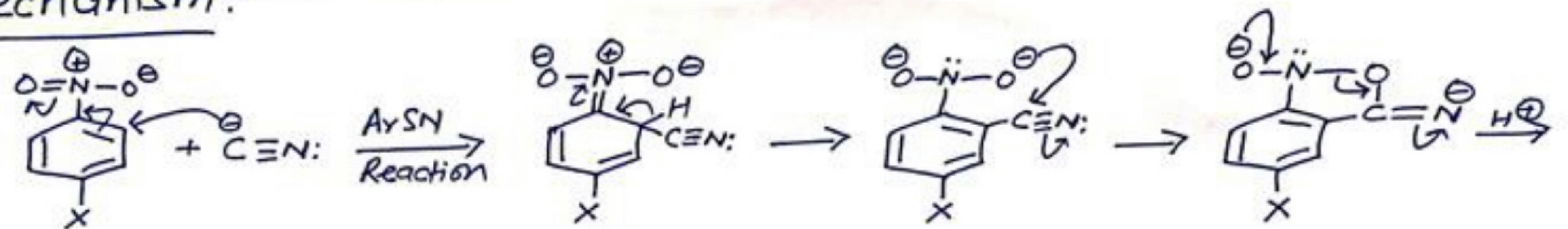
- This rearrangement is given by aromatic nitro compounds in the presence of aq. alc. KCN or NaCN.
- cine aromatic nucleophilic substitution
- nitro group is replaced by carboxylic acid. Position of $-COOH$ is always ortho.
- Best results observed when EWG are present in ortho and/or para position w.r.t the nitro groups.



⇒ Yields are poor
⇒ yield b/w 20-50%



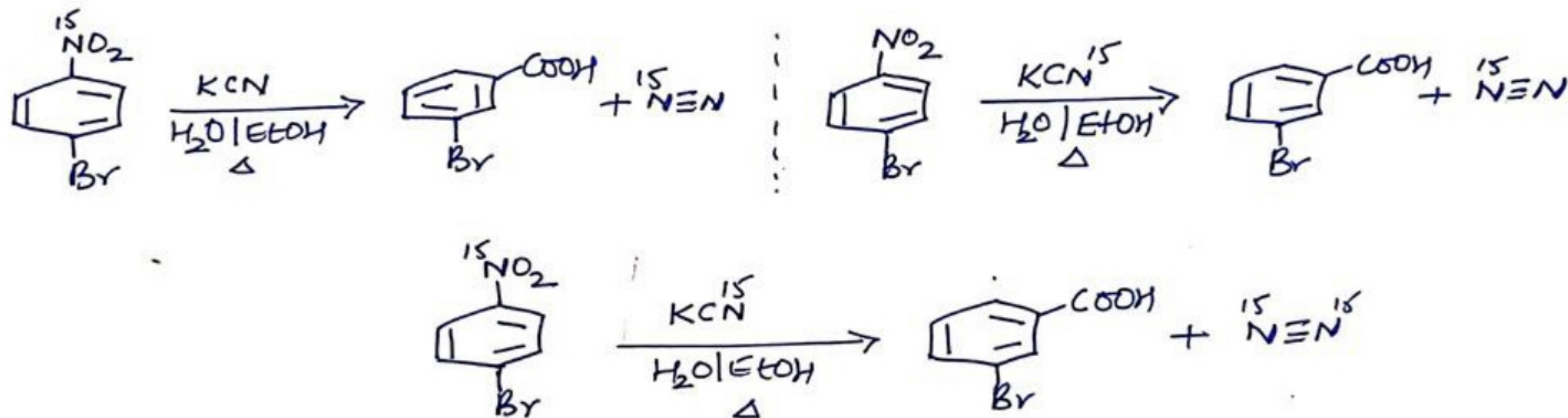
Mechanism:-



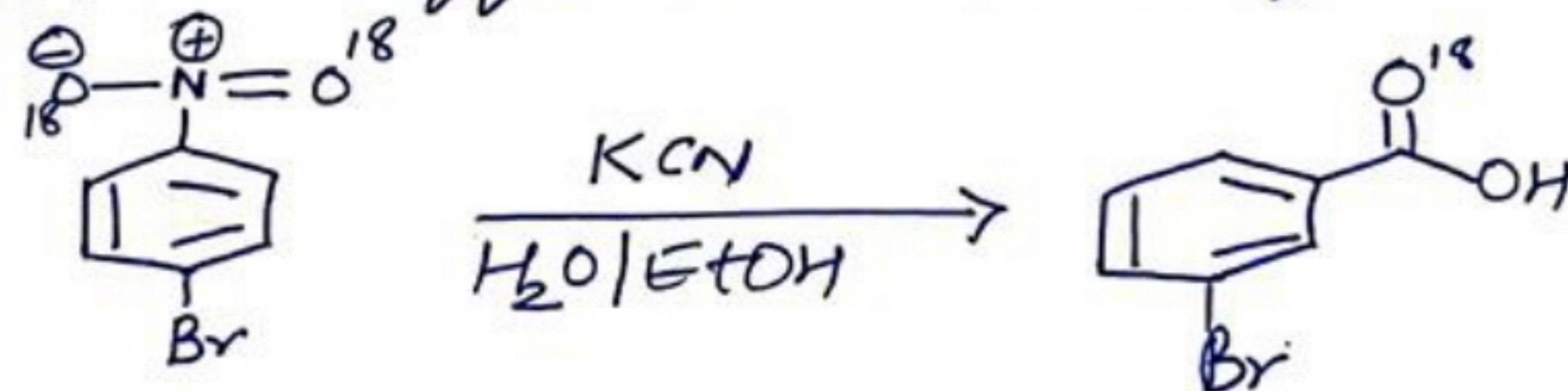
Evidence of the mechanism

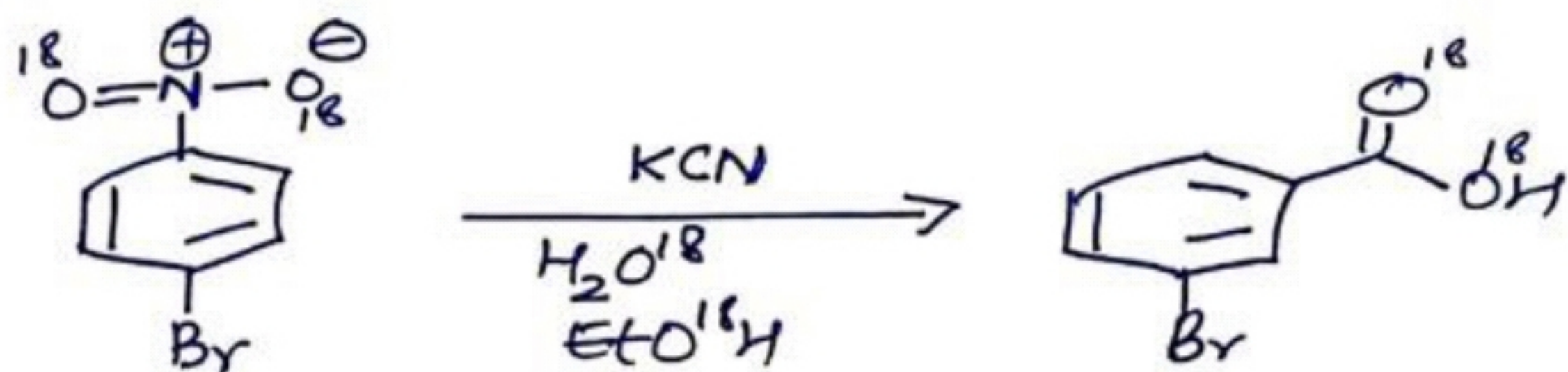
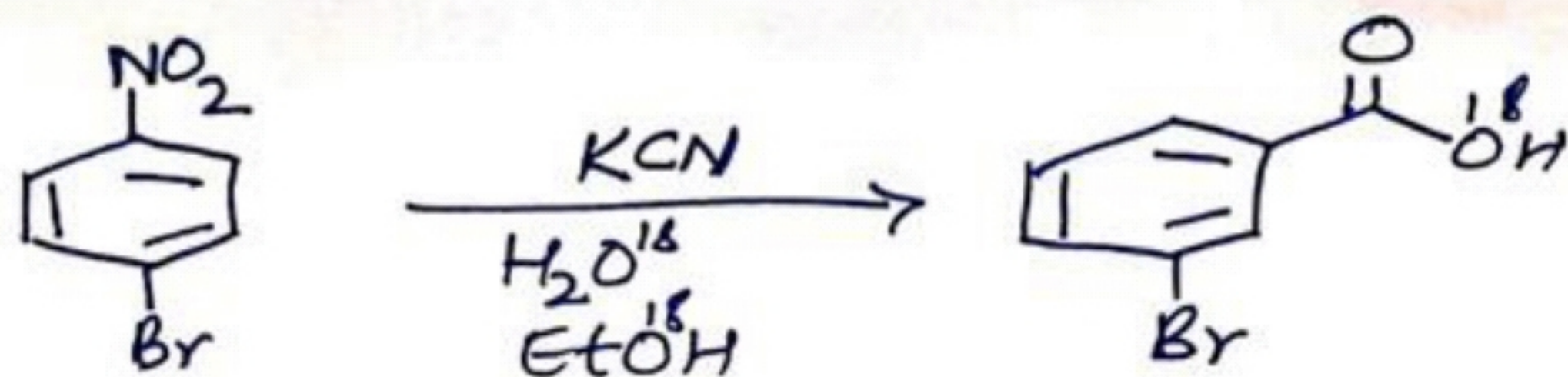
- (1) Both carboxylic acid and N_2 are formed in equal amounts.
- (2) Formation of $\text{N}\equiv\text{N}$ confirms the intermediate (1) and (2).

(3) By isotopic labelling of nitrogen, it has been shown that one atom of the molecular nitrogen comes from the $-\text{NO}_2$ group and other from CN^- .



(4) In carboxylic group one atom of the oxygen comes from the nitro group and another oxygen atom comes from the solvent.





(5) When the reaction is carried out in the presence of $\text{D}_2\text{O}/\text{EtOD}$, the carboxylic acid formed contains D at the position of NO_2 .

