

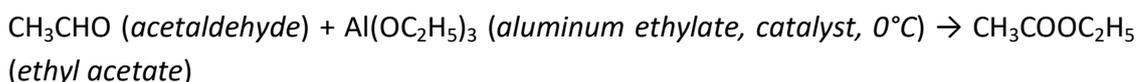
Answer on Question #77809, Chemistry / Organic Chemistry

Question:

Identify and name all the compounds/conditions/catalysts (incl. the missing ones) in the following conversions.

Answer:

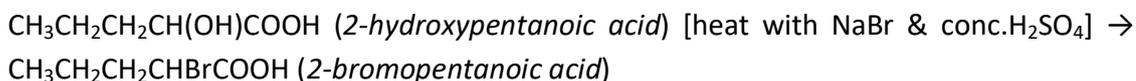
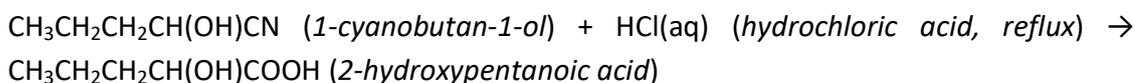
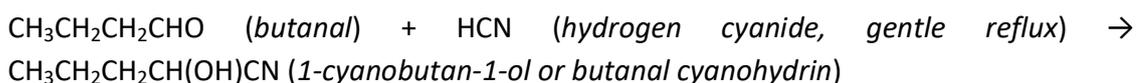
(a)



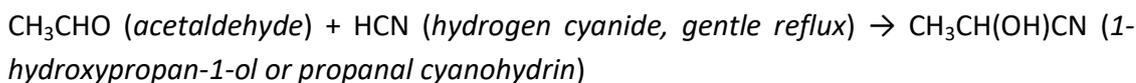
(b)



(c)



(d)



$\text{CH}_3\text{CH}(\text{OH})\text{CN}$ (*1-hydroxypropan-1-ol*) + $\text{HCl}(\text{aq})$ (*hydrochloric acid, reflux*) \rightarrow
 $\text{CH}_3\text{CH}(\text{OH})\text{COOH}$ (*2-hydroxypropionic acid*)

$\text{CH}_3\text{CH}(\text{OH})\text{COOH}$ (*2-hydroxypropionic acid*) [heat with NaBr & $\text{conc. H}_2\text{SO}_4$] \rightarrow
 $\text{CH}_3\text{CHBrCOOH}$ (*2-bromopropionic acid*)

$\text{CH}_3\text{CHBrCOOH}$ (*2-bromopropionic acid*) [heat with NH_3 in sealed tube] \rightarrow
 $\text{CH}_3\text{CH}(\text{NH}_2)\text{COOH}$ (*2-aminopropionic acid*)