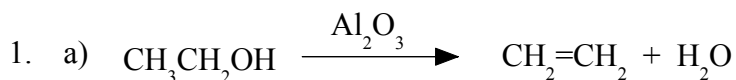


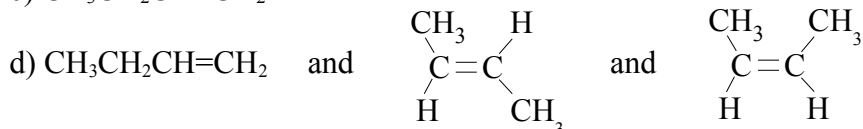
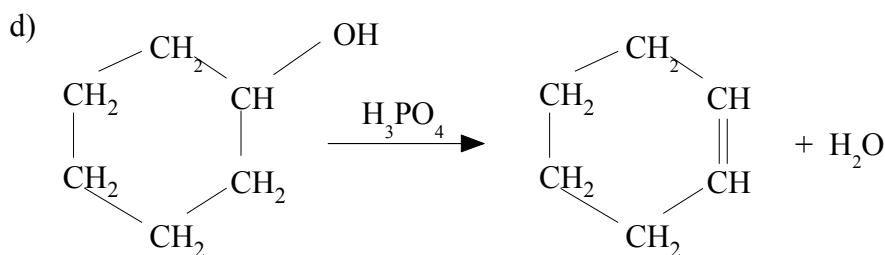
Chemguide – answers

ALCOHOLS: DEHYDRATION

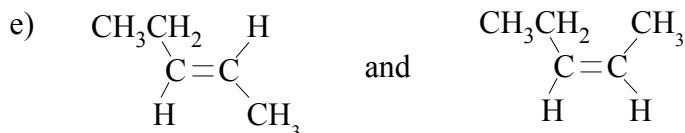


b) Carbon dioxide and sulphur dioxide. Concentrated sulphuric acid is a strong oxidising agent and oxidises some of the ethanol to carbon dioxide (amongst other things). In the process the sulphuric acid is reduced to sulphur dioxide.

c) Phosphoric(V) acid isn't a strong oxidising agent.



(There is no real need to show the shape around the double bond in alkenes ending with $=\text{CH}_2$, because you can't have geometric isomers if there are two identical groups on one of the carbons attached to the double bond. However if you missed the geometric isomerism in but-2-ene, it might be worth getting in the habit of *always* drawing the $\text{C}=\text{C}$ bond with all the things attached at the correct angles.)



(You might have drawn these the other way around, of course, with the CH_3 group on the left of the molecule and the CH_3CH_2 on the right. As long as you have the two isomers each with a hydrogen and methyl group on one carbon, and a hydrogen and ethyl group on the other, that's fine. There are no other possibilities – the OH group is removed from the centre carbon in the chain, and the hydrogen from one of the next door ones, which are exactly equivalent.)