

4.10 EXERCISE 1 – synthesis and analysis

1. Devise a simple chemical test for distinguishing between the following pairs of compounds:
 - a) cyclohexane and cyclohexene
 - b) 1-chlorobutane and 1-bromobutane
 - c) propanal and propanone
 - d) butanoic acid and ethyl ethanoate
 - e) ethanoyl chloride and ethanoic anhydride
 - f) propan-2-ol and 2-methylpropan-2-ol
 - g) propan-1-ol and propan-2-ol
 - h) 2-methylpropan-2-ol and ethoxyethane

2. Suggest how the following syntheses could be carried out:
 - a) chloroethane to ethanoic acid
 - b) chloroethane to 2-hydroxypropanenitrile
 - c) chloroethane to aminoethane
 - d) chloroethane to 1-aminopropane
 - e) chloroethane to ethyl ethanoate