• Give the name of the starting material where indicated and the constitutional formula of the major organic product formed in each of the following reactions.

Marks 3

$$\begin{array}{c} \text{OH} \\ \\ \text{dilute H}_2\text{SO}_4 \end{array}$$

Name: 1-pentene

(Acid catalysed addition of H-OH across a C=C double bond, following Markovikov's rule)

$$\begin{array}{c|c} & & & \\ \hline \\ OH & & & \\ \hline \end{array} \begin{array}{c} Na_2Cr_2O_7 \, / \, H^{\bigoplus} \\ \hline \end{array} \begin{array}{c} COOH \\ \hline \end{array}$$

Name: 3-methyl-1-butanol

(Oxidation of a primary alcohol to a carboxylic acid)