

1. Acetone cyanohydrin is a molecule consisting of carbon, hydrogen, oxygen and nitrogen. Determine the empirical formula of acetone cyanohydrin, if 1.00g of acetone cyanohydrin forms 2.069g of carbon dioxide, 0.740g of water and 0.541g of nitrogen dioxide when it is completely combusted. [3m]

2. Cysteine is an amino acid molecule consisting of carbon, hydrogen, oxygen, nitrogen and sulphur. Determine the empirical formula of cysteine, if 1.00g of cysteine forms 1.09 g of carbon dioxide, 0.519g of water, 0.380g of nitrogen dioxide and 0.662g of sulphur trioxide when it is completely combusted. [3m]

Ans : 1) C_4H_7NO 2) $C_3H_7NO_2S$