

**Question 22** (6 marks)

A student prepared the compound methyl propanoate in a school laboratory.

- (a) Give a common use for the class of compounds to which methyl propanoate belongs. 1

artificial flavourings  
eg. used in perfumes, deodorants.

- (b) In the preparation of this compound a few drops of concentrated sulfuric acid were added to the starting materials. The mixture was then refluxed for a period of time. 2

Why was it necessary to reflux the mixture?

~~In order to~~ To prevent the release of volatile gas from escaping or an explosion since these toxic gases are extremely reactive at high temperatures.

- (c) Name the TWO reactants used in preparing the methyl propanoate and draw their structural formulae. 3

methanol and propanoic acid.

