1. A compound **A** had the formula C10H8, and showed two H NMR peaks (which were both broad multiplets) at 7.70 and 7.86ppm, in the ratio 1:1. When treated with alkaline KMnO4, compound A gave CO2, Water and compound **B,** which had the formula C8H4O3. Compound B reacted with Water to give a dibasic acid **C**. When treated with ammonium chloride, compound B gave compound **D**, which had the formula C8H5NO2 and showed a band in the infra red spectrum close to 1675cm-1.

Assign structures to compounds A, B, C and D

1. Compound A is a chiral compound which, when reacted with chromium (VI) oxide and sulphuric acid, gives an achiral product B, C5H10O. When compound A is heated with phosphoric acid, the major product formed is compound C. Ozonolysis of C (i.e reaction with ozone, followed by reduction with zinc and acetic acid) yields two products, D and E. The infra red spectrum of compound D has a strong absorption at 1715cm-1 and its HNMR spectrum consists of a single signal at 2.17ppm. The infrared spectrum of compound E has a strong absorption at 1730cm-1 and its HNMR spectrum consists of a quartet centered at 9.80ppm and a doublet at 2.20ppm. Identify compounds A through E, giving a full explanation of how you arrived at your conclusions.