

Solutions

Each answer shows the steps, then the **result**.

2.1

- a C=O (carbonyl) bond

2.2

- an O–H group (in an alcohol)

3.1 C

- The broad 2500–3000 cm^{-1} plus a C=O peak indicates a carboxylic acid

3.2 B

- IR identifies the functional groups present

3.3

(a)

- the broad O–H absorption ($\sim 3200\text{--}3650\text{ cm}^{-1}$) disappears; a C=O absorption ($\sim 1700\text{ cm}^{-1}$) appears

(b)

- losing the O–H and gaining a C=O shows the alcohol has been oxidised to a carbonyl (ketone)