

Chemguide – questions

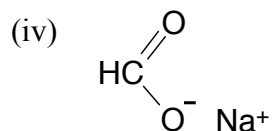
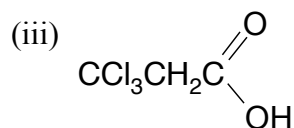
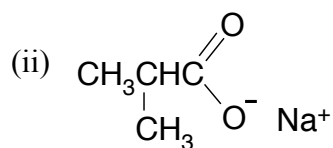
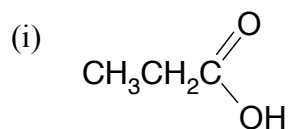
NAMING ORGANIC COMPOUNDS: 2

1. Carboxylic acids and their salts

a) Draw the structures of the following compounds:

- (i) ethanoic acid
- (ii) potassium ethanoate
- (iii) 3-chloropropanoic acid
- (iv) sodium 2,3-dimethylbutanoate

b) Name these compounds:



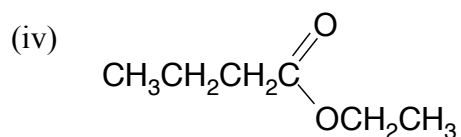
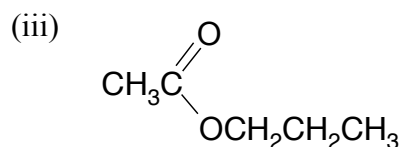
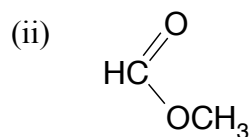
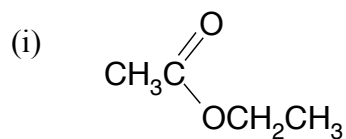
2. Esters

a) Draw the structures of the following compounds:

- (i) methyl ethanoate
- (ii) ethyl methanoate
- (iii) ethyl propanoate
- (iv) methyl 2-methylpropanoate

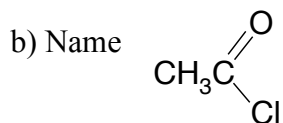
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b) Name these compounds:



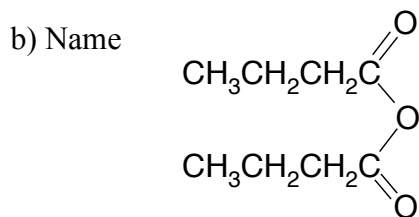
3. Acyl chlorides

a) Draw the structure for propanoyl chloride.



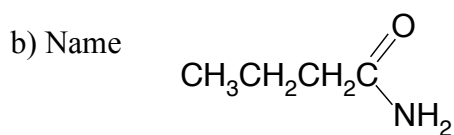
4. Acid anhydrides

a) Draw the structure for ethanoic anhydride.



5. Amides

a) Draw the structure for ethanamide.



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6. Nitriles

a) Draw the structure for propanenitrile

b) Name
$$\begin{array}{c} \text{OH} \\ | \\ \text{CH}_3\text{CH}_2\text{CHCN} \end{array}$$

7. Amines

a) Draw the structures for

(i) ethylamine

(ii) aminoethane

(iii) 2-aminobutane

(iv) (Be careful with this one – it's new.) 1,6-diaminohexane

(v) diethylamine

(vi) triethylamine

b) Name these compounds:

(i) $\text{CH}_3\text{CH}_2\text{CH}_2\text{NH}_2$

(ii)
$$\begin{array}{c} \text{CH}_3\text{CHCH}_3 \\ | \\ \text{NH}_2 \end{array}$$

(iii)
$$\begin{array}{c} \text{CH}_3 \\ \diagdown \\ \text{NH} \\ \diagup \\ \text{CH}_3 \end{array}$$

(iv)
$$\begin{array}{c} \text{CH}_3 \\ \diagdown \\ \text{N}-\text{CH}_3 \\ \diagup \\ \text{CH}_3 \end{array}$$

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8. Amino acids

a) Draw the structures for

(i) 2-aminobutanoic acid

(ii) 3-aminopropanoic acid

b) Name these compounds.

(Important: If you happen to know the biological names for some of the 2-amino acids (such as glycine, alanine and so on), you should *not* use those in answering these questions.)

