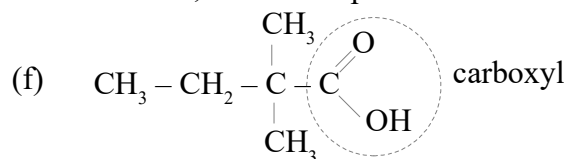
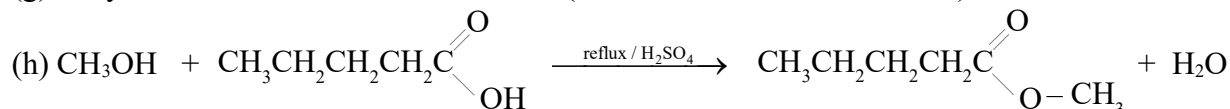


Organic Formative 4.1-4.8 Solutions

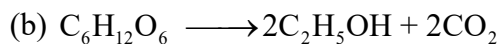
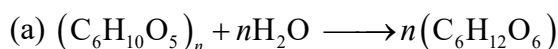
1. (a) methyl pentanoate (b) 2,2-dimethyl butanoic acid (c) 1-bromo propan-2-amine
 (d) primary
 (e) Compound B contains a very polar O-H bond so it will have strong hydrogen bonding between its molecules, while Compound A will not.



- (g) They have the same molecular formula (same number of each element)



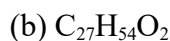
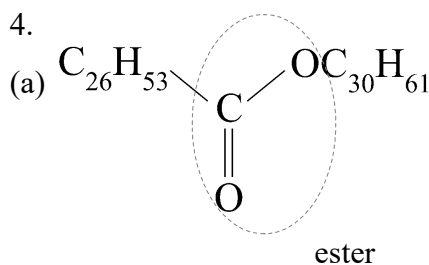
2.



- (c) any two of: yeast enzymes
 anaerobic conditions
 slight warmth (around 25-30°C)

3. Water is polar, so more polar compounds dissolve better in it. The carbon chain is non-polar, so as its length increases the molecule becomes more non-polar, therefore will not dissolve as well in water.

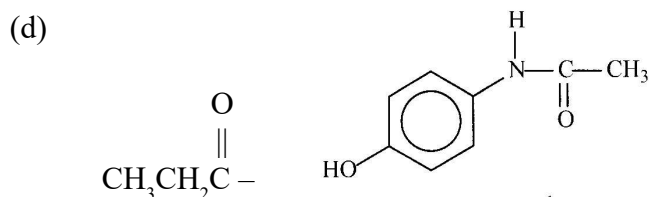
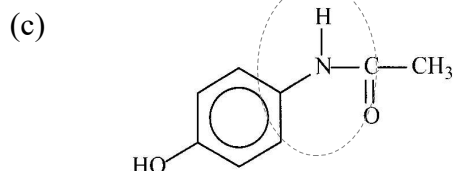
4.



5.

(a) When the tablet is added to water, the sodium carbonate reacts with the carboxyl group forming a sodium carboxylate salt which is soluble in water due to being ionic (ion dipole bonding).

(b) The tablet would effervesce (fizz/bubble). This occurs because carbon dioxide is a product of the reaction between aspirin and sodium carbonate.



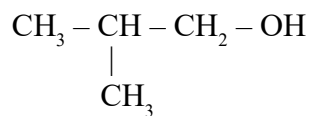
- (e) Condensation / esterification

6.

(a) 1,2-butandiol (butan-1,2-diol)

(b) Both will be green, as they both contain a primary and/or secondary hydroxyl group which is able to be oxidised by acidified dichromate.

(c)



7.

(a) $\text{C}_x\text{H}_{2x+3}\text{N}$ (or $\text{CH}_3(\text{CH}_2)_n\text{NH}_2$) but not preferred

(b) Primary

(c) Methanamine has an unbonded pair of electrons which allows it to bond with H^+ .
or (is a base so accepts a proton)