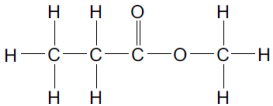


Question 1

1(a)(iv)	D	1
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
Question 2

2(a)(i)	methyl propanoate	1
		1
2(a)(ii)	any four carbon ester not named in 7(a)(i)	1

Question 3

3(a)(i)	homologous series	1
3(a)(ii)	Same functional group	1
3(a)(iii)	general (formula)	1
3(a)(iv)	7	1
3(b)	fractional distillation	2
3(c)(i)	propanoic acid structure of propanoic acid	2
3(c)(ii)	methanol	1
3(d)(i)	structural isomers	1
3(d)(ii)	ethyl butanoate butyl ethanoate	2

Question 4

4(e)	$C_nH_{2n+1}COOH$	1
4(f)	COOH fully displayed (1)  whole molecule completely correct (1)	2
4(g)(i)	methyl butanoate	1
4(g)(ii)	butanoic acid (1) methanol (1)	2

Question 5

5(a)(i)	methyl methanoate	1
5(a)(ii)	CH ₂ O	1
5(b)	M1 all single bonding dot and cross pairs correct (1) M2 double C=O bond dot and cross pairs are correct (1) M3 complete diagram is correct (1)	3
5(c)	M1 methanoic acid (1) M2 structure of methanoic acid (1) M3 methanol (1) M4 structure of methanol (1)	4
5(d)(i)	M1 same (molecular) formula (1) M2 different structural formula (1)	2
5(d)(ii)	ethanoic acid	1