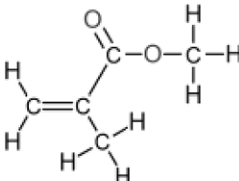


2(c)(i)	$C_{12}H_{26} \rightarrow 2C_2H_4 + C_8H_{18}$	1
2(c)(ii)	addition polymerisation	1

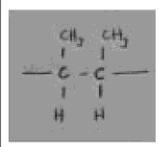
© UCLES 2018

Page 5 of 9

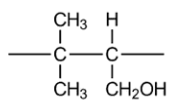
Question	Answer	Marks
2(c)(iii)	<i>two from</i> save space in landfill avoid litter prevent eyesore non-biodegradable conserves non-renewable resources harmful incineration products harmful to wildlife	2
2(c)(iv)		
	correct monomer	1
	fully displayed	1

Question	Answer	Marks
----------	--------	-------

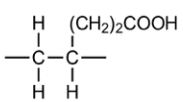
May/June 2018 9701/21 · Q2 (c)(i), (c)(ii), (c)(iii), (c)(iv)

3(b)(ii)	$-CH(CH_3)CH(CH_3)-$ OR 	
	even number of C's in correct backbone with 'end bonds' AND no C=C	1
	CH ₃ and H on each of two C drawn for 1 repeat unit only AND all the carbons must be tetravalent	1

May/June 2018 9701/22 · Q3 (b)(ii)

4(c)(ii)		1
----------	---	---

Oct/Nov 2019 9701/22 · Q4 (c)(ii)

3(c)(ii)		1
----------	---	---

March 2020 9701/22 · Q3 (c)(ii)

5(d)	OR $\text{CH}_2\text{CH}(\text{CO}_2^-\text{Na}^{+})$ OR $\text{CH}_2=\text{CH}(\text{COO}^-\text{Na}^{+})$ OR $\text{O}=\text{C}-\text{O}^-\text{Na}^+$ OR $\text{H}-\text{C}=\text{C}-\text{H}$, etc.	1
------	---	---

May/June 2021 9701/21 · Q5 (d)

3(e)(i)	yellow precipitate	1
---------	--------------------	---

Oct/Nov 2021 9701/22 · Q3 (e)(i)

4(b)(i)	L = CH_3OH / methanol [1] conditions = acid(ic) / H^+ / H_2SO_4 AND (heat under) reflux [1]	2
---------	---	---

© UCLES 2022

Page 8 of 9

Question	Answer	Marks
4(b)(ii)	carbon backbone with 'dangling' bonds [1] rest of structure correct [1]	2

March 2022 9701/22 · Q4 (b)(i), (b)(ii)

4(c)(i)		1
---------	--	---

May/June 2022 9701/22 · Q4 (c)(i)

4(d)(ii)	correct carbon backbone including 'dangling' bonds for ONE repeat unit	1
	rest of structure correct	1

Question	Answer	Marks
----------	--------	-------

Oct/Nov 2022 9701/21 · Q4 (d)(ii)

3(b)(ii)	M1 correct carbon backbone of one repeat unit including 'dangling' bonds	1
	M2 rest of structure correct	1

© UCLES 2022

Page 12 of 13

Question	Answer	Marks
----------	--------	-------

Oct/Nov 2022 9701/22 · Q3 (b)(ii)

2(d)(iii)		1

© Cambridge University Press & Assessment 2024

Page 7 of 10

Question	Answer	Marks
----------	--------	-------

March 2024 9701/22 · Q2 (d)(iii)

4(c)(ii)		1
----------	--	---

Oct/Nov 2024 9701/22 · Q4 (c)(ii)

5(b)(vi)		1
5(c)	ethene pi bond is a region of (high) electron density (above and below the C-C (sigma) bond)	1

Question	Answer	Marks
----------	--------	-------

May/June 2025 9701/23 · Q5 (b)(vi), (c)

4(b)(i)	addition	1
4(b)(iii)	M1 M2 optical isomerism M3 the methylated carbon has four different groups attached	3
4(b)(iv)	M1 non-biodegradability M2 harmful combustion products	2

Oct/Nov 2025 9701/21 · Q4 (b)(i), (b)(iii), (b)(iv)

4(b)(iv)	M1 non-biodegradability M2 harmful combustion products	2
----------	--	---

Oct/Nov 2025 9701/23 · Q4 (b)(iv)