

Cracking and alkenes (including test with bromine water)

Q1. (2018)

06.6	bromine water		1	AO1 5.7.1.4
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Q2. (2019)

04.1	any two from: <ul style="list-style-type: none"> high temperature catalyst steam high pressure low oxygen atmosphere 	ignore heat / hot allow a temperature between 400 °C and 900 °C allow aluminium oxide, alumina, porous pot, zeolites	2	AO1 5.7.1.4
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Q3. (2019)

04.4	bromine (water)	do not accept bromide	1	AO1 5.7.1.4
	turns (from orange / brown / yellow to) colourless	MP2 is dependent on MP1 allow decolourises ignore clear	1	

Q4. (2020)

06.3	C ₃ H ₆		1	AO2 5.1.1.1 5.7.1.4
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Q5. (2020)

06.5	bromine (water)	do not accept bromide	1	AO1 5.7.1.4
	(colour change) orange	} allow 1 mark for colourless (to) orange	1	
	(to) colourless		1	
		ignore clear		

Q6. (2021)

07.4	C ₈ H ₁₈		1	AO2 5.3.1.1 5.7.1.4
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Q7. (2021)

07.5	bromine (water)	MP2 is dependent on MP1 allow decolourises ignore clear	1	AO1 5.7.1.4
			1	
	turns (from orange / brown) to colourless			

Q8. (2022)

05.6	any one from: • high temperature	allow a temperature between 400 °C and 900 °C ignore heat / hot	1	AO1 5.7.1.4
	• steam • high pressure • low / no oxygen (atmosphere) • catalyst	allow aluminium oxide allow alumina allow zeolites allow porous pot		

Q9. (2022)

05.7	$C_6H_{14} \rightarrow C_2H_6 + 2C_2H_4$	allow multiples	1	AO2 5.1.1.1 5.3.1.1 5.7.1.4
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Q10. (2022)

05.8	any one from: • to make smaller molecules • to make more useful molecules • to produce fuels • more demand for smaller molecules • to make (starting materials for) polymers	allow to make (starting materials for) other chemicals allow to make alkenes	1	AO1 5.7.1.4

Q11. (2023)

01.5	fuels		1	AO1 5.7.1.4
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Q12. (2023)

01.6	burning splint		1	AO1 5.8.2.1
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Q13. (2024)

06.4	$C_{14}H_{30} \rightarrow C_8H_{18} + 2C_3H_6$		1	AO2 5.1.1.1 5.7.1.4
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Q14. (2024)

06.5	add bromine (water)		1	AO1 5.7.1.4
	(bromine water) changes (from orange) to colourless	allow (bromine water) decolourises ignore clear MP2 is dependent on MP1 being awarded	1	

Q15. (2024)

06.6	polymer	allow plastic allow hydrocarbon	1	AO1 5.2.1.4 5.7.1.4
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