

# HYDROCARBONS 8

## MARK SCHEME

### Q1.

Question	Answer	Extra information	Marks
A	2		
B	1		
C	4		
D	3		
Total marks			4

### Q2.

Question	Answer	Extra information	Marks
(a)	3		1
(b)	2		1
(c)	4		1
Total marks			3

### Q3.

Question	Answer	Extra information	Marks
A	4		
B	1		
C	2		
D	3		
Total marks			4

### Q4.

Question	Answer	Extra information	Marks
	add bromine water	allow iodine	1
	changes (from orange) to colourless / decolourised	ignore clear	1
Total marks			2

**Q5.**

Question	Answer	Extra information	Marks
(a)(i)	$C_7H_{16}$	mark answer line first answer may be given in the table	1
(ii)	$C_nH_{2n+2}$		1
(b)(i)	carbon monoxide	do not accept carbon oxide do not accept water ignore CO	1
(ii)	because of partial / incomplete combustion (in reaction 2) or complete combustion (in reaction 1)	allow because there is less/insufficient oxygen (in reaction 2) or sufficient oxygen (in reaction 1) allow different amounts of oxygen used (in the reactions) or $19O_2$ (in reaction 1) and $13O_2$ (in reaction 2) ignore air	1
Total marks			4

**Q6.**

Question	Answer	Extra information	Marks
(i)	add bromine water (bromine water) is decolourised / goes colourless	incorrect reagent = 0 marks  ignore clear  if colour of bromine water given it must be yellow, orange, red or brown	1 1
(ii)	any <b>one</b> from: to harden the oil to change the oil into a solid to make the oil into a spread to increase its melting point	ignore boiling point	1
(iii)	(olive oil is) reacted with hydrogen	accept hydrogenated	1
Total marks			4

**Q7.**

Question	Answer	Extra information	Marks
	$C_{11}H_{24}$ it does not have a (carbon carbon) double bond or it has only single (carbon carbon) bonds.	linked to first mark point accept it is an alkane or it is (a) saturated (hydrocarbon)  accept converse statement	1 1
Total marks			2

**Q8.**

Question	Answer	Extra information	Marks
A	1		
B	4		
C	3		
D	2		
Total marks			4

**Q9.**

Question	Answer	Extra information	Marks
(a)	3		1
(b)	3		1
(c)	1		1
(d)	2		1
Total marks			4

**Q10.**

Question	Answer	Extra information	Marks
A	2		
B	1		
C	4		
D	3		
Total marks			4

**Q11.**

Question	Answer	Extra information	Marks
A	4		
B	1		

C	2		
D	3		
Total marks			4

**Q12.**

Question	Answer	Extra information	Marks
	ethane has the smallest molecules		1
	heptadecane has the highest boiling point		1
Total marks			2