

COVALENT BONDING 1

MARK SCHEME

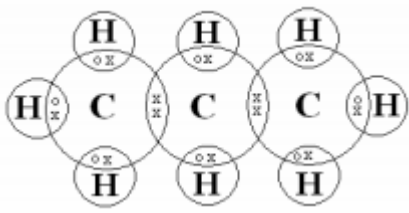
Q1.

Question	Answer	Extra information	Marks
	3 bonding pairs 1 lone pair	accept 2 non-bonding electrons on outer shell of nitrogen	1 1
Total marks			2

Q2.

Question	Answer	Extra information	Marks
	because carbon dioxide is simple molecular / small molecules	reference to incorrect bonding = 1 mark max	1
	there are intermolecular forces (between the molecules)	allow intermolecular bonds	1
	so a small amount of energy needed (to separate molecules) or (intermolecular forces) are weak		1
Total marks			3

Q3.

Question	Answer	Extra information	Marks
(a)		allow all dots or all crosses or combination or all e / e ⁻ or - or other suitable symbols centre of symbols must be on or inside overlapping areas within reason	1
(b)	<ul style="list-style-type: none"> • intermolecular forces / bonds or forces / bonds between molecules • bonds / forces are weak 	covalent bonds are weak = 0 marks if they do not gain either of the marks on the left then allow simple covalent / molecular / made of small molecules for 1 mark	1 1
Total marks			3

Q4.

Question	Answer	Extra information	Marks
(a)(i)	share		1
(ii)	covalent		1
(iii)	simple molecules		1
(b)	Water has a boiling point of 100°C		1
	Water has a melting point lower than room temperature		1
Total marks			5

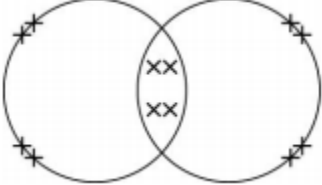
Q5.

Question	Answer	Extra information	Marks
(a)(i)	a compound		1
(ii)	CH ₄		1
(iii)	covalent		1
(b)	methane has a low boiling point or boiling point less than 20°C because it has small molecules	accept it has forces between molecules accept weak forces between molecules for 2 marks	1 1
Total marks			5

Q6.

Question	Answer	Extra information	Marks
	A		1
Total marks			1

Q7.

Question	Answer	Extra information	Marks
	 <p>2 bonding pairs</p> <p>2 lone pairs on each oxygen</p>	<p>electrons can be shown as dots, crosses, e or any combination</p> <p>accept 4 electrons within the overlap</p> <p>accept 4 non-bonding electrons on each oxygen</p>	<p>1</p> <p>1</p>
Total marks			2