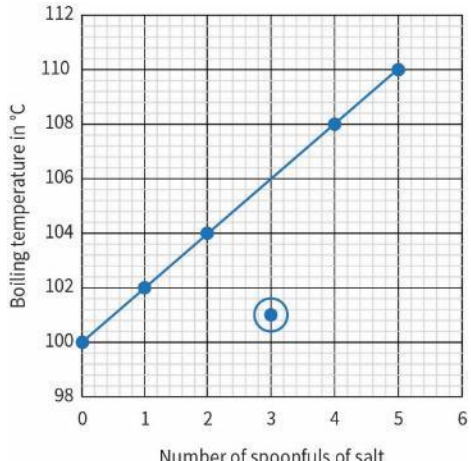


Chapter 1 – Particles

Question	Answers	Extra information	Mark
1	The mass of 1 cm ³ of a substance depends on – the mass of the particles and how they are arranged. How easy a substance is to scratch depends on – how strongly the particles are held together. Whether a substance flows depends on – whether the particles can move. How much space 1 g of a substance takes up depends on – the arrangement of the particles.	2 marks for two correctly matched 1 mark for one correctly matched	3
2(a)	A		1
(b)	D		1
(c)	D		1
(d)	vibrate		1
3	The particles touch each other. The substance can be compressed only a tiny bit.		1 1
4(a)	A, C	1 mark for both correct	1
(b)	100 °C		1
(c)	vibrate temperature		1 1
5(a)	box B with particles more spread out box C with particles spread throughout box		1 1
(b)	increasing the temperature decreasing the mass of the particles		1 1
6(a)	particles are not touching/particles should all be touching		1
(b)	faster molecules leave the liquid from the surface of the liquid		1 1

Question	Answers	Extra information	Mark
(c)	Similarity – changes from liquid to gas Difference – evaporation happens at any temperature/boiling happens at boiling point OR boiling happens throughout liquid/evaporation happens at the surface		1 1
7(a)	water can be poured particles in a liquid can slide over each other		1 1
(b)	a solid keeps its shape particles in a solid are in a regular pattern, joined together		1 1
(c)	ice is less dense than water particles in ice are further apart than particles in water		1 1
8(a)	as the amount of salt in the water increases, the boiling point increases		1
(b)	points plotted correctly line of best fit drawn anomaly/outlier circled 		1 1 1

Question	Answers	Extra information	Mark
(c)	yes, it supports the hypothesis		1
(d)	do the experiment several times/repeat the measurement		1
9(a)	particles vibrate faster and faster		1
	particles move out of their places in the pattern and start moving around from place to place, sliding over each other		1
(b)	chromium		1
(c)	particles in some metals are held together more strongly than in other metals		1
(d)	manganese		1
10(a)	density of mercury in the solid state and liquid state is about the same		1
	density of mercury in the gas state is much smaller		1
(b)	in the solid and liquid states, the particles are close together/touching		1
	in the gas state, they are much further apart		1
(c)	mass of the mercury particles is much bigger than the mass of the water particles		1
11(a)	water		1
(b)	particles in some substances are held together more strongly than particles in other substances		1
			1
(c)	20 °C is above the melting point and below the boiling point so, bromine is a liquid		1
			1
(d)	Ranges: water – 100.0 °C chlorine – 67.0 °C bromine – 65.3 °C mercury – 396.0 °C ethanol – 192.0 °C mercury is liquid for the biggest range of temperature	1 mark for evidence of calculation of mercury 1 mark for all substances 1 mark for conclusion	3