

Question number	Answer	Notes	Marks
1 (a) (i)	B – QR; A is not correct as the substance is a solid C is not correct as the substance is a liquid D is not correct as the substance is boiling		1
(ii)	A – PQ; B is not correct as the substance is part solid, part liquid C is not correct as the substance is a liquid D is not correct as the substance is boiling		1
(iii)	any irregular , spaced out collection of particles;		1
(iv)	D – they move quickly and randomly; A is not correct as this is how particles in a solid move B is not correct as only particles at 0 K can theoretically be stationary C is not correct as this is how particles in a liquid move		1
(b) (i)	thermometer;	allow temperature sensor, temperature probe	1
(ii)	80 (°C);		1
(c)	temperature difference = 27 (°C); substitution; evaluation; e.g. $\Delta T = 37 - 10 = 27 \text{ (°C)}$ energy = $1.2 \times 840 \times 27$ (energy =) 27 000 (J)	allow ECF from incorrect temperature difference 37296, 10080 = 2 marks allow 27216, 27220, 27200	3

(Total for Question 1 = 8 marks)