Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic : 14_Particle model

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Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Mark Schemes

Q1.

Question Number	Answer	Additional guidance	Mark
	296 (°C)	accept 23 + 273	**(1)**

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Q2.

Question	Answer	Additional guidance	Mark
		allow substitution and rearrangement in either order	**(3) AO2.1**
	substitution (1)		
	$8.96 = \frac{14.1}{V}$	allow substitution of correct values into a visible, incorrectly rearranged algebraic equation for this mark only	
	rearrangement (1)		
	$(V =) \frac{14.1}{8.96}$	$(V =) \frac{m}{\rho}$	
	evaluation (1)		
	$(V =) 1.57\ (cm^3)$	accept numbers that round to 1.57 allow 1.6	

		award full marks for the correct answer without working allow 1.6 or answers rounding to 1.57 to any other power of 10 scores 2 marks	

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Q3.

Question Number:	Answer	Additional guidance	Mark
	recall and substitution (1) (density ρ)=$\frac{380}{410}$ evaluation (1) 0.93 (g/cm^3)	 allow substitution of a mass / a volume accept any value that rounds to 0.9 allow truncated 0.92 (g/cm^3) only accept 1(g/cm^3) if working shown. award full marks for correct answer without working	**(2)** AO 2 1

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Q4.

Question Number:	Answer	Additional guidance	Mark
	substitution (1) $(Q =) \frac{380 \times 3.34\ (\times 10^5)}{(1000)}$ evaluation (1) 1.27×10^5 (J)	 127 kJ 126920 (J) accept answers that round to 1.27×10^5 e.g. 1.2692×10^5 accept 130 kJ or 1.3×10^5 (J) POT error max. 1 mark award full marks for correct answer without working	**(2)** AO 2 1

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Q5.

Question	Answer	Additional guidance	Mark
(i)	kinetic (1)	movement / internal reject mechanical / potential / elastic	**(1)** **AO1.1**

Question	Answer	Additional guidance	Mark
(ii)	substitution (1) (P_2 =) $\frac{300 \times 600}{400}$ evaluation (1) (P_2 =) 450 (kPa)	 allow values to 1sf e.g. 400 or 500 allow one mark for 400 OR 450 OR 500 to any other power of ten award full marks for the correct answer without working	**(2)** **AO2.1**

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Q6.

Question number	Answer	Additional guidance	Mark
(i)	curve of best fit through all points	reject joining point to point with straight lines reject curves with excessive 'tramlining'	(1)

Question number	Answer	Mark
(ii)	An explanation that combines identification via a judgment (1 mark) to reach a conclusion via justification/reasoning (2 marks): select a pair of P values from the curve such that one value is double the other (1) analyse the corresponding V values (1) correct conclusion based on their curve (1)	(3)

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Q7.

Question number	Answer	Additional guidance	Mark
	descriptions to include any **two** of • particles / atoms in solid close(r) together (1) • particles / atoms in solid (vibrate) in fixed positions but particles in liquid move (freely) (1) • particles in a solid in regular arrangement but particles in liquid are randomly arranged (1) • particles in a liquid have more (kinetic) energy (than in a solid) (1)	reverse argument difference asked for, so **must compare** for subsequent marking points allow answers in terms of forces between particles	**(2) AO1**

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