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

Name of the Student:_____

Max. Marks : 20 Marks   **Time : 20 Minutes**

Mark Schemes

Q1.

Question number	Answer	Additional guidance	Mark
	substitution (1) $$(r) = \frac{7.22(\times 10^{-2})}{2.69(\times 10^{-5})}$$ evaluation (1) $(\rho =)$ 2680	2.68 to any power of ten seen allow any value that rounds to 2680; e.g. 2684 accept 2700 allow values in standard form e.g. 2.68 x 10^3	**(3)** **AO2**
	unit (1) kg / m^3	kg m^{-3}	

		allow for three marks:
		    2.68 to any power of ten **with**
		    a consistent unit, e.g.
		        2680 kg/m^3
		        2680 g/dm^3
		        2.68 g/cm^3
		        2.68 kg/dm^3
		        0.00268 kg/cm^3
		        $2\,680\,000 \text{ g/m}^3$
		
		allow for two marks:
		• 2680 with no or incorrect unit
		• 2.68 to any other power of 10 **with** an inconsistent unit of density
		• correct substitution **with** an inconsistent unit of density
		
		allow for one mark:
		• 2680 to any other power of ten with no or incorrect unit
		• appropriate unit of density with no or an incorrect value	

Q2.

Question Number	Answer	Additional guidance	Mark
(i)	substitution (1) $(\Delta Q) = 1.5 \times 4200 \times 50$ evaluation (1) 320 000 (J)	 accept 315 000 (J) 310 000 (J) award full marks for the correct answer without working 320 000 000 315 000 000 310 000 000 score 1 mark (mass in grams)	(2)

Question Number	Answer	Additional guidance	Mark
(ii)	substitution (1) $3500 = \dfrac{670\,000}{t}$ rearrangement (1) $(t=) \dfrac{670\,000}{3500}$ evaluation (1) 190(s)	accept substitution and rearrangement in either order accept any answer that round to 190(s) power of ten error award 2 marks maximum award full marks for the correct answer without working	(3)

Q3.

Question	Answer	Additional guidance	Mark
(i)	30 (°C) (1)		(1) AO3.1

Question	Answer	Additional guidance	Mark
(ii)	substitution (1) $(c =) \dfrac{96\,000}{0.82 \times 30}$ evaluation (1) $(c =)$ 3900 (J/kg °C)	allow ECF from (a)(i) throughout allow values that round to 3900 e.g. 3902.4 (J/kg °C) award full marks for the correct answer without working	(2) AO3.1