Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : 2_Motion and Forces

Name of the Student:_____
Max. Marks : 25 Marks **Time : 25 Minutes**

Mark Schemes

Q1.

Question Number	Answer	Additional guidance	Mark
	rearrangement (1) $a = \frac{(v^2-)u^2}{2x}$ substitution (1) $a = \frac{(-)15^2}{2 \times 14}$ evaluation (1) deceleration = 8(.04) (m/s^2)	rearrangement and substitution in either order 225/28 for 2 marks accept – 8(.04) award full marks for the correct answer with no working	**(3)** AO 2 1

Q2.

	substitution: 0.5 × 18 (1) evaluation 9.0 (1)	9 give full marks for correct answer no working	**(2)**

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Q3.

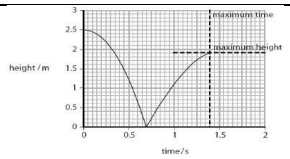
Question number	Answer	Additional guidance	Mark
(a)	Rearrangement (1) $m = \frac{f}{a}$ Substitution and conversion (1) $m = \frac{1870}{1.83}$ Answer and rounding to 3 s.f. (1) 1020 (kg)	maximum 2 marks if kN not converted to N award full marks for correct numerical answer without working	**(3)**

Question number	Answer	Additional guidance	Mark
(b)	Rearrangement of $\frac{(v-u)}{t} = a$ (1) $v = u + at$ Substitution (1) $v = 0 + 1.83 \times 16$ Answer (1) 29.3 (m/s)	award full marks for correct numerical answer without working	**(3)**

Question number	Answer	Mark
(c)	Correctly identifies data points from the graph to calculate areas (1) Calculates area under AB (1) 240 m Calculates area under CD (1) 135 m distance travelled at constant speed = 240 m is greater than distance travelled when slowing down = 135 m (1)	**(4)**

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Q4.

	Answer	Acceptable answers	Mark
(a)(i)	2.5 (m)	Allow answers between (and including) 2.45 & 2.55	**(1)**
(a)(ii)	0.7 (s)	Allow answers between (and including) 0.68 & 0.72	**(1)**
(a)(iii)	 line: same shape as original (1) peak at 1.9 m (1) time taken < 0.7 s (1)	Ignore any part of the graph after the peak	**(3)**
(a)(iv)	An explanation linking: <u>energy</u> lost (1) in collision with ground / air resistance (1)	Inelastic collision worth (2) as sound or heat	**(2)**
(b)(i)	shown using data Any two from kinetic energy before = 12.5 + 0 (=12.5) (1) kinetic energy after = 4.5 + 8 (=12.5) (1) Kinetic energy is the same before and after the collision (1)	Kinetic energy is conserved/no energy lost	**(2)**
(b)(ii)	cyclotron (1)	named particle accelerator accept CERN	**(1)**

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