Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : Motion And Forces

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Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Mark Schemes

Q1.

Question Number	Answer	Additional guidance	Mark
(i)	substitution (1) $\frac{2x2.5}{0.74^2}$ evaluation (1) 9.1(3) (m/s^2)	$\frac{5}{0.5476}$ award full marks for the correct answer with no working	(2) AO 2 1

Question Number	Answer	Additional guidance	Mark
(ii)	(0.74 + 0.69 + 0.81) ÷ 3 (1) 0.7(5) (1)	accept 0.7 or 0.75 award full marks for the correct answer with no working 0.746 or 0.747 or 0.750 scores 1 mark	(2) AO 3 2a AO 3 2b

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Q2.

Question Number	Answer	Acceptable answers	Mark
(a)(i)	**A**		**(1)**

Question Number	Answer	Acceptable answers	Mark
(a)(ii)	A description to include any two of • Gravitational / potential energy reduces (1) • kinetic energy increases (1) • total energy remains constant (1)	Ignore energy changes resulting from impact with sand GPE reduces KE increases Allow GPE is transferred to KE for 2 mark	**(2)**

Question Number	Answer	Acceptable answers	Mark
(b)	A explanation linking • (work is done) displacing the sand (1) with EITHER • (as) <u>kinetic</u> energy of the ball(s) has been transferred (1) OR • by the force between the ball and the sand (1)	sand moving/ pushing/ blowing upwards OWTTE or ball sinking into sand	**(2)**

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Question Number	Answer	Acceptable answers	Mark
(c) (i)	transposition mass = momentum / velocity (1) substitution mass = 0.46 / 6.2 (1) evaluation 0.074 (kg) / 74g (1)	Subst. and transform. either order 1 mark only can be scored for correct substitution after incorrect transposition. Give full marks for correct answer with no working. Answers that round to 0.074 (kg) 0.07 (kg)	**(3)**

Question Number	Answer	Acceptable answers	Mark
(c)(ii)	substitution (impact) force = 0.46 / 0.17 (1) evaluation 2.7 (N) (1)	Give full marks for correct answer with no working. Ignore power of ten error until evaluation Answers which round to 2.7 Allow ECF if candidate has used mass from part (i) in F=m(v-u) / T $F = \frac{6.2 - 0}{0.17} \times 0.074$ (1) = 2.7 (N) (1)	**(2)**

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Q3.

Question number	Answer	Additional guidance	Mark
(i)	4.4 m/s ^{2}		**(1)**

Question number	Answer	Additional guidance	Mark
(ii)	graph (if projected back) does not pass through origin OWTTE (1)	accept not a straight line	**(1)**

Question number	Answer	Additional guidance	Mark
(iii)	An answer that combines the following points to provide a plan/method: • raise left hand end of runway (1) • (so that) force of gravity on trolley will balance frictional forces (1)	(so that) trolley travels at constant speed when given a small push	**(2)**

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