Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : 3_Conservation Of Energy

Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Mark Schemes

Q1.

Question number	Answer	Additional guidance	Mark
	Substitution (1) PE = 7.26 x 10 x 1.3 Evaluation (1) 94.4 (J)		**(2)**

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Q2.

Question number	Answer	Additional guidance	Mark
(i)	substitution (1) 371 = (64.5+ m) x 3.5 rearrangement (1) m+64.5 = 371 / 3.5 evaluation of total mass (1) m+64.5 = 106 (kg) evaluation of woman's mass (1) m = 106-64.5 = 41.5 (kg)	full marks will be awarded for correct numerical answer without working	**(4)**

Question number	Answer	Additional guidance	Mark
(ii)	substitution (1) KE = ½ x 64.5 x 3.5^2 evaluation (1) 395 (J)	allow answers which round to 395 e.g. 395.0625 full marks will be awarded for correct numerical answer without working	**(2)**

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Q3.

Question number	Answer	Additional guidance	Mark
	selection **and** substitution (1) $17^{(2)} = 2 \times 10 \times$ distance evaluation (1) 14(.45) (m)	use of either $v^2 - u^2 = 2ax$ or $v^2 = 2gh$ $17^{(2)} = 2 \times a \times$ distance allow 289 for 17^2 award full marks for the correct answer without working give full credit for use of g=9.8 or 9.81 m/s^2 gives 14.7 (m)	**(2)** **AO2**

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Q4.

Question number	Answer	Additional guidance	Mark
	Substitution or rearrangement (1) 980 = 35 x 10 x h	(Δh =) $\frac{\Delta GPE}{m \times g}$ or (Δh =) $\frac{980}{35 \times 10}$ allow use of 9.8 N/kg or 9.81 N/kg allow substitution into visible incorrectly rearranged algebraic expression	**2** **AO2.1**
	evaluation (1) (h =) 2.8 (m)	allow 2.85/2.86/2.9 for use of g = 9.8 N/kg or 9.81 N/kg ignore use of negative for decrease in GPE award full marks for the correct answer without working	

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Q5.

Question number	Answer	Additional guidance	Mark
(i)	substitution (1) $11 = 0.42 \times 10 \times \Delta h$ rearrangement (1) $(\Delta h =) \frac{11}{0.42 \times 10}$ evaluation (1) 2.6 (m)	 accept substitution and rearrangement in either order $(\Delta h =) \frac{\Delta GPE}{m \times g}$ accept any value which rounds to 2.6 (m) award 2 marks for 2.6 to any other power of 10 allow 1 mark for 0.38 allow 1 mark for 46(.2) award full marks for the correct answer with no working give full credit for use of g=9.8 or 9.81 N/kg (gives 2.7 (m))	(3) AO2

Question number	Answer	Additional guidance	Mark
(ii)	substitution(1) $(KE=)\frac{1}{2} \times 0.42 \times 12^2$ evaluation (1) 30 (J)	 allow 30.2(4) (J) award 1 mark for 30 240 (J) award 1 mark for 2.52 (J) award 1 mark for 60.5 (J) award full marks for the correct answer with no working	(2) AO2

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Question number	Answer	Additional guidance	Mark
(iii)	A description including: KE/kinetic (energy store) (1) (transfers to) and **one** of: elastic (potential energy store) (1) OR thermal (energy of ball/wall/surroundings) (1) OR <u>dissipates</u> (to surroundings) (1)	 allow mechanically / mechanical transfer ignore reference to gravitational potential energy allow heat for thermal allow sound in this context ignore reference to the ground	**(2)** **AO2**

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