Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : 3_ Conservation of Energy

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

Mark Schemes

Q1.

Question number	Answer	Additional guidance	Mark
(i)	5000(J)	24 000 – 19 000	(1) AO2

Question number	Answer	Additional guidance	Mark
(ii)	substitution (1) (efficiency =)$\frac{19000}{24000}$ (x100%) evaluation(1) 0.79 or 79%	 allow 0.8 do not award 79 without percentage award full marks for correct answer without working.	(2) AO2

Q2.

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	Answer	Additional guidance	Mark
	substitution (1) (*ΔGPE* =) 57 × 10 × 2.1 evaluation (1) (*ΔGPE* =) 1200 (J)	 ignore attempts to convert kg to g for this MP only 1197 allow numbers that round to 1200 no ecf from MP1 award full marks for the correct answer without working.	**(2)** **AO2**

Q3.

	Answer	Additional guidance	Mark
(i)	600 (J)	accept 3000 – 2400 accept -600	**(1)** **AO3**

	Answer	Additional guidance	Mark
(ii)	substitution (1) (efficiency =) $\frac{2400}{3000}$ evaluation (1) 0.8(0)	 allow $\frac{4}{5}$ accept 80 (%) award full marks for the correct answer without working allow 1.25 for 1 mark for selecting and evaluating from the correct pair of values	**(2)** **AO3**

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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	

Q5.

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Question number	Answer	Additional guidance	Mark
(i)	substitution (1) 11 = 0.42 x 10 x Δh rearrangement (1) (Δh =) $\frac{11}{0.42 \times 10}$ evaluation (1) 2.6 (m)	accept substitution and rearrangement in either order (Δh =) $\frac{\Delta GPE}{m \times g}$ 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 dissipates (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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