Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic : 8_Energy Forces Doing Work

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

Mark Schemes

Q1.

Question number	Answer	Additional guidance	Mark
i	substitution (1) $(\Delta GPE) = 72 \times 10 \times 7.0$ evaluation (1) 5040 (J)	do not penalise any power of ten error (p.o.t.e.) at this stage do not accept an answer without value for g (10) being used) award full marks for correct answer without working	**(2)** **AO2**

Question number	Answer	Additional guidance	Mark
ii	an explanation to include (potential / kinetic) energy is transferred / dissipated (1) to surroundings / water / air / slide (1)	accept lost / deceases accept friction / air resistance acts accept to **thermal** (store)	**(2)** **AO3**

Q2.

Question number	Answer	Additional guidance	Mark
(i)	rearrangement of work = force × distance (1) d = W ÷ F substitution and evaluation (1) 18 (m)	 d = 2700 ÷ 150 Award full marks for correct answer without working	(2)

Question number	Answer	Mark
(ii)	2700 (J)	(1)

Question number	Answer	Additional guidance	Mark
(iii)	rearrangement of KE = ½ mv^2 (1) v = √(2 × KE ÷ m) substitution and evaluation (1) 19 (m/s)	 v = √(2 × 2700 ÷ 15) v^2 = (2 × 2700 ÷ 15) allow answers that round to 19 award full marks for correct answer without working allow alternative route using $v^2 - u^2 = 2ax$ for full marks	(2)

Q3.

Question Number	Answer	Additional guidance	Mark
(i)	substitution (1) (ΔGPE =) (0.0)46 x 10 x 2.05 evaluation (1) 0.94(3) (J)	allow g=9.8(1) m/s^2 0.9 (J) values that round to 0.92 or 0.93 (from using g = 9.8 or 9.81) do not award for 1(J) no POT error in evaluation award full marks for the correct answer without working.	(2)

Question Number	Answer	Additional guidance	Mark
(ii)	recall (1) (KE =) ½ x m x v^2 substitution (1) (KE =) ½ x (0.0)46 x 3.5^2 evaluation (1) 0.28 (J)	 allow answers that round to 0.28 e.g. 0.28175 (J) allow max 2 marks for POT error e.g. 0.00028 award full marks for the correct answer without working	**(3)**

Question Number	Answer	Additional guidance	Mark
(iii)	Any value between 0.8 (m) and 0.95 (m) inclusive		(1)

Question Number	Answer	Additional guidance	Mark
(iv)	An explanation linking (the ball) has lost energy (1) identification of what has happened to that energy (1)	 accept (energy) dissipated **or** (transferred to) surroundings / ground **or** thermal energy **or** heat / sound **or** system is not 100% efficient **or** bounce is not (100%) elastic **or** squashing (the ball or the ground)	(2)