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

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

Mark Schemes

Q1.

Question Number	Answer	Additional guidance	Mark
(i)	recall (1) (P =) $\frac{E}{t}$ substitution and evaluation (1) (P=) 75 (W)	P = work done ÷ time P = $\frac{45}{0.6}$ award full marks for the correct answer without working	(2)

Question Number	Answer	Additional guidance	Mark
(ii)	substitution into $E = \frac{1}{2} \times k \times x^2$ (1) $45 = \frac{1}{2} \times 140 \times x^2$ rearrangement (1) $(x =) \sqrt{\frac{2 \times 45}{140}}$ evaluation (1) 0.8(0) (m)	allow substitution and rearrangement in either order $x^2 = (\frac{E}{0.5k} =) \frac{2 \times 45}{140}$ $x^2 = 0.64(28571)$ accept values that round to 0.80 e.g. 0.80178 award full marks for the correct answer without working	(3)

Q2.

Question Number	Answer	Additional guidance	Mark
(i)	recall (1) (P =) $\frac{E}{t}$ substitution and evaluation (1) (P=) 75 (W)	P = work done ÷ time P = $\frac{45}{0.6}$ award full marks for the correct answer without working	(2)

Question Number	Answer	Additional guidance	Mark
(ii)	substitution into E = $\frac{1}{2} \times k \times x^2$ (1) $45 = \frac{1}{2} \times 140 \times x^2$ rearrangement (1) $(x =) \sqrt{\frac{2 \times 45}{140}}$ evaluation (1) 0.8(0) (m)	allow substitution and rearrangement in either order $x^2 = (\frac{E}{0.5k} =) \frac{2 \times 45}{140}$ $x^2 = 0.64(28571)$ accept values that round to 0.80 e.g. 0.80178 award full marks for the correct answer without working	(3)

Q3.

Question number	Answer	Additional guidance	Mark
	substitution (1) $2{,}800 = ½ \times 85 \times v^2$ rearrangement (1) $(v^2 =) \quad \frac{2800 \times 2}{85}$ evaluation (1) v = 8.1 (m/s)	allow substitution and rearrangement in either order 66 or 65.88 seen allow values that round to 8.1 e.g 8.1168 award full marks for the correct answer without working	**(3)** **AO2**

Q4.

Question number	Answer	Additional guidance	Mark
	substitution (1) $2{,}800 = ½ \times 85 \times v^2$ rearrangement (1) $(v^2 =) \quad \frac{2800 \times 2}{85}$ evaluation (1) v = 8.1 (m/s)	allow substitution and rearrangement in either order 66 or 65.88 seen allow values that round to 8.1 e.g 8.1168 award full marks for the correct answer without working	**(3)** **AO2**

Q5.

Question number	Answer	Additional guidance	Mark
	Equating energy in both equations (1) E = weight × height = power × time Rearrangement (1) time = $\frac{(\text{weight} \times \text{height})}{\text{power}}$ Substitution and evaluation (1) time = 230 000 × $\frac{4.7}{1600}$ time = 680 (s)	allow answers which round to 680, e.g. 675.6	**(3)**