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
	Explanation linking **two** from: choice of distance (1) 6.3 m (calculations of work done need) the distance moved in the direction of the force (1) (friction acts) along the slope / hypotenuse (1)	 accept pushed up the slope	**(2)** **AO3**

Q2.

Question number	Answer	Additional guidance	Mark
(i)	An explanation linking energy has been dissipated /wasted / lost (1) as thermal energy (1)	 energy has been transferred mechanically useful energy is less than total energy supplied identifies difference of 600(J) heat / to the surroundings ignore sound accept (some) energy has been transferred to thermal store for 2 marks	(2) AO3

Question number	Answer	Additional guidance	Mark
(ii)	substitution (1) (efficiency =) $\frac{8400}{9000}$ evaluation (1) (efficiency =) 0.93	 0.9 93(%) allow values that round to 0.93 or 93(%) award full marks for the correct answer without working	(2) AO2

Q3.

Question Number	Answer	Acceptable answers	Mark
(i)	20 (J)	200 – 180 (even if calculated value from this is incorrect)	**(1)**

Question Number	Answer	Acceptable answers	Mark
(ii)	(changed to) {thermal energy / heat}	dissipated (lost) to {surroundings / motor / air / atmosphere} sound / noise **reject** if kinetic, light or chemical is mentioned	**(1)**

Question Number	Answer	Acceptable answers	Mark
(iii)	$\frac{180}{200} \times 100$ (1) 90 (%) (1)	award full marks for correct answer with no working $\frac{180}{200}$ 0.9, 9/10 Or [100 – (20/200)] % not needed but if a unit is given then maximum score is 1	**(2)**

Q4.

Question Number:	Answer	Additional guidance	Mark
	a description to include: kinetic energy (store) (of cyclist and /or bicycle) decreases / is transferred into(1) thermal energy (store) (of brakes / surroundings) increases (1)	 KE for kinetic energy allow heat for thermal allow brakes get hotter ignore sound energy accept kinetic (energy) to heat (energy) for 2 marks in this context	**(2)** AO 1 1

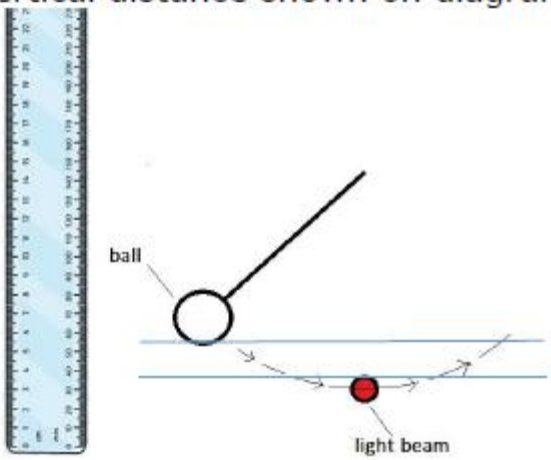
Q5.

Question Number:	Answer	Mark
(i)	efficiency = **useful** (energy transferred by the device) (x100) total (energy supplied to the device)	**(1)** AO 1 1

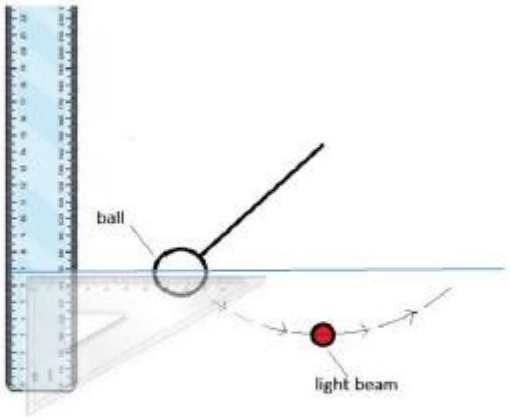
Question Number:	Answer	Additional guidance	Mark
(ii)	determine useful energy (1) 7500 -3200 = 4300		**(1)** AO 2 1

Question Number:	Answer	Additional guidance	Mark
(iii)	substitution (1) efficiency = 4300 / 7500 evaluation (1) 0.57	 allow ECF from (i) and/ or (ii) for 1 mark maximum accept 57(.33)(%), 0.6, 60(%) award full marks for the correct answer without working	**(2)** AO 2 1

Q6.

Question number	Answer	Additional guidance	Mark
i	ruler / line / rectangle shown vertically, must include minimum vertical distance shown on diagram (1)  	judge by eye accept any vertical line covering the minimum vertical distance	**(1)** **AO3**

Question number	Answer	Additional guidance	Mark
ii	description to include set square placed against ruler (to measure vertical position) (1) (one edge of set square placed at) right angles / perpendicular / 90° (to ruler) (1) (set square used to) make ruler vertical (1)	accept reasonable alternatives on a diagram or explained in writing accept one edge of the set square shown as vertical in diagram	**(2)** **AO3**

		full marks may be awarded from additions to Figure 15 or 16 e.g.  allow 2 marks for any horizontal line (set square use) on the diagram drawn through / touching a vertical ruler if no other mark scored allow 1 mark for improving accuracy	