Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic : 9_Forces and their effect

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

Mark Schemes

Q1.

Question number	Answer	Additional guidance	Mark
i	substitution (1) (moment=) 0.40 × 70 evaluation (1) 28 Nm (1)	 independent mark award full marks for the correct answer without working	**(3)**

Question number	Answer	Additional guidance	Mark
ii	an explanation linking the effort is at a bigger distance (1) from fulcrum (than the load) (1)	allow reverse argument for load (magnitudes of) moments are the same allow wheel/axle/pivot for fulcrum	**(2)**

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Question number	Answer	Additional guidance	Mark
iii	(there will be more) friction (between the axle and wheel)	inside the bearing	**(1)**

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Q2.

Question number	Answer	Additional guidance	Mark
i	evaluation of gear ratio (1) 1:3 evaluation of number of revolutions (1) 6	 allow 1 mark if 60/20 or 20/60 or 20:60 or 60:20 seen award full marks for the correct answer without working	**(2)**

Question number	Answer	Additional guidance	Mark
ii	D 120mm down A and C are incorrect because gear T moves down B is incorrect because gear T moves 2mm per tooth		**(1)**

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Q3.

Question number	Answer	Additional guidance	Mark
(i)	substitution (1) 40 × 1.7 evaluation (1) 68 Nm (1)	 award full marks for correct answer without working independent mark do not accept J (joules)	(3)

Question number	Answer	Additional guidance	Mark
(ii)	 substitution (1) 68 = W × 1.3 rearrangement (1) $\frac{68}{1.3}$ evaluation (1) 52 (N)	award full marks for correct answer without working substitution and rearrangement in either order ecf moment from 4(c)(i) 52.3 (N)	(3)

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Q4.

Question number	Answer	Additional guidance	Mark
(i)	substitution (1) moment of force = 150 x 1.8 evaluation (1) moment of force = 270 (N m)	 award full marks for the correct answer without working	**(2)** **AO2**

Question number	Answer	Additional guidance	Mark
(ii)	substitution (1) W x 0.95 = 270 rearrangement and evaluation (1) $W = \left(\frac{270}{0.95}\right) = 280$ (N) any answer to 2 sf (1)	ecf from (i) any number that rounds to 280 (N) e.g. 284.2 (N) award 2 marks to here for the correct answer without working	**(3)** **AO2**

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