Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : Motion And Forces

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

Mark Schemes

Q1.

Question Number	Answer	Mark
	D | **vector** | **vector** **The only correct answer is D** ***A*** *'scalar scalar' is incorrect, both force and velocity are vectors* ***B*** *'scalar vector' is incorrect, with force being described incorrectly as a scalar* ***C*** *'vector scalar' is incorrect, with velocity being described incorrectly as a scalar*	**(1)** AO 1 1

Q2.

Question Number	Answer	Additional guidance	Mark
	substitution (1) (F =) 0.10 x 2.0 evaluation (1) 0.2(0) unit (1) N	 100 x 2 (using 0.10kg = 100g) reject 0.10 x 2.0^2 and the follow up evaluation (equation given should be used) correct answer without working gets 2 marks allow 1 mark total for 2 with any other power of ten, so that includes 200 for example separate unit mark newtons / Newtons accept lowercase 'n' for the abbreviated unit accept kg ms^{-2} accept 200 g ms^{-2} for 3 marks	**(3)** AO 2 1

Q3.

Question Number	Answer	Acceptable answers	Mark
(a)	**D** driving for a long time without taking a break		**(1)**

Question Number	Answer	Acceptable answers	Mark
(b)(i)	substitution 1200 x 8(.0) (1) evaluation 9600 (J) OR 9.6×10^3 (J) (1)	Give full marks for correct answer with no working. 9.6 x any other power of 10 = 1 mark	**(2)**

Question Number	Answer	Acceptable answers	Mark
(b)(ii)	substitution $0.5 \times 1400 \times 25^2$ (1) evaluation of v squared 0.5 x 1400 x 625 (1) evaluation 4.4×10^5 (J) (1) OR 440 000	Give full marks for correct answer with no working. accept 625 seen anywhere for this mark e.g. 875 000 gets 1 mark (forgot ½) 437 500 (J) 4.4 x any other power of 10 = 2 marks	**(3)**

Q4.

Question number	Answer	Additional guidance	Mark
	B force A is incorrect, mass is a scalar quantity C is incorrect, energy is a scalar quantity D is incorrect, distance is a scalar quantity		**(1)** **AO1**

Q5.

Question number	Answer	Additional guidance	Mark
(i)	0.52		(1) AO3

Question number	Answer	Additional guidance	Mark
(ii)	addition and division (1) $\frac{0.35+0.32+0.38+0.33}{4}$ evaluation (1) 0.35 (m)	$\frac{0.35+0.32+0.52+0.38+0.33}{5}$ accept 0.345 (m) award full marks for correct answer without working. accept 0.38 for 2 marks (five results included in average	(2) AO2

Question number	Answer	Additional guidance	Mark
(iii)	Any **one** from make the slope steeper(1) add more books/blocks (1) push/pull the trolley (1)	 accept 'higher slope/high slope accept means of reducing friction e.g. use lubricant	(1) AO1

Q6.

Question Number	Answer	Mark
(i)	**B** QR (horizontal line) **A** PQ is incorrect it shows constant acceleration **C** RS is incorrect it shows constant acceleration **D** ST is incorrect it shows constant deceleration	**(1)** **AO3**

Question Number	Answer	Mark
(ii)	**A** PQ (steeper slope shows greater acceleration) **B** QR is incorrect it shows zero acceleration **C** RS is incorrect as slope is less steep than for PQ **D** ST is incorrect as the slope is less steep than for PQ and shows deceleration	**(1)** **AO3**

Question Number	Answer	Additional guidance	Mark
(iii)	substitution (1) (a=) $\frac{15(-0)}{10}$ evaluation (1) 1.5 (m/s^2)	 15 seen Allow 10 divided by any number between 6 and 7 for this mark award full marks for the correct answer with no working	**(2)** **AO3**

Question Number	Answer	Additional guidance	Mark
(iv)	indication that distance travelled = area under graph (1) substitution (1) (distance travelled =) 10 x 15 evaluation (1) 150 (m)	may be seen on graph accept (distance=)speed x time ignore speed = $\frac{\text{distance}}{\text{time}}$ award full marks for the correct answer with no working award 2 marks for 10 x 15 seen anywhere if no other marks awarded, 1 mark for use of 15 (m/s) or 10 (s)	(3) AO3

Q7.

Question number	Answer	Mark
(i)	☒ **C** $F = m \times a$ A, B and D have incorrect mathematical operator	**(1)**

Question number	Answer	Additional guidance	Mark
(ii)	140 (1) N (1)	no ecf from 2ai independent mark allow newton(s) n do **not** allow Ns ns	**(2)**