Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : 2_Motion and Forces

Name of the Student:_____
Max. Marks : 20 Marks **Time : 20 Minutes**

Mark Schemes
Q1.

	Answer	Additional guidance	Mark
(i)	0.54 (s)	allow any value from 0.53 and 0.55 inclusive	**(1)** **AO3**

	Answer	Additional guidance	Mark
(ii)	curve extended to $a = 80°$ (1) 0.45 (s) (1)	judge generously allow range 0.42 to 0.48 award full marks for the correct answer without working.	**(2)** **AO3**

	Answer	Additional guidance	Mark
(iii)	mention/idea of reaction time (1) (reaction time) about the same as the times on the graph (1)	human reaction time is about 0.2 seconds (compared with) 0.4 seconds on the graph ignore accuracy ignore "human error"	**(2)** **AO3**

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.

	Answer	Acceptable answers	Mark
(a)(i)	8 – 0 (m/s)	8	**(1)**
(a)(ii)	substitution 8 / 5 (1) evaluation (1) 1.6 (m/s^2)	ecf from (i) full marks for correct answer (or ecf) with no working shown.	**(2)**
(a)(iii)	0	Nil / nothing / zero / none (no mark for no response)	**(1)**
(b)	substitution F = 1200 × 0.8 (1) evaluation (1) 960 (N)	full marks for correct answer with no working shown.	**(2)**

		Indicative Content	Mark
QWC	***(c)**	an explanation linking some of the following points: compared to a car with just the driver, a fully loaded car will • have a greater mass / be heavier • greater kinetic energy / momentum • experience the same braking force (when brakes are applied) • require a greater braking force (than available) to stop (in the same distance) • have a smaller acceleration / deceleration • take a longer time to come to rest (from given speed) • travel greater distance in this time • needs to do more work with same amount of force • use of relevant equations such as F = ma, work done = F × d • consequence of driver distractions	**(6)**
Level	**0**	No rewardable content	
1	**1 - 2**	• a limited explanation using one idea from the indicative content eg fully loaded car is heavier. • in answer communicates ideas using simple language and uses limited scientific terminology • spelling, punctuation and grammar are used with limited accuracy	
2	**3 - 4**	• a simple explanation which links ideas from the indicative content eg it is heavier and so it takes a longer distance to stop • the answer communicates ideas showing some evidence of clarity and	

		organisation and uses scientific terminology appropriately • spelling, punctuation and grammar are used with some accuracy
3	**5 - 6**	• a detailed explanation which links several ideas from the indicative content e.g. It has more momentum and so it will take a longer time to stop. This means that it will travel a further distance. The answer communicates ideas clearly and coherently uses a range of scientific terminology accurately • spelling, punctuation and grammar are used with few errors