Question number			Answer	Notes	Marks
5	(a)	(i)	starting height (of the toy car);		1
		(ii)	a positive correlation between the 2 key variables, eg The higher the (starting) height, the faster the (final) speed / speed at bottom;	NB response needs to mention both key variables	1
	(b)		use a ruler or a set square ; further detail; e.g. held vertically check for zero error thickness of board taken into account avoid parallax errors	Allow suitably labelled diagram drawn in the space below perpendicular to bench	2

Question number			Answer	Notes	Marks
5	(c)	(i)	any one of the following ideas; o speed might have increased / changed on slope o car might have accelerated o other forces could be acting hence (she has) calculated the average speed;	accept slowed down ignore timing errors	2
		(ii)	any **three** from: MP1. Suitable equipment / method chosen; MP2. Detail of measuring the distance; MP3. Detail of measuring the time; MP4. Detail of experimental set-up; MP5. Speed at bottom = 2 x total distance ÷ total time (assuming constant acceleration from rest) / idea of doubling; allow MP5 independent of other marks	*Acceptable approaches, e.g.* - Light gate and data logger computer; Placed at end of ramp; With interrupter of some description on toy car; OR Attach ticker tape to car; Find the part of the tape that matches end of the ramp; Work out distance over time for a small section; OR Film with video camera; With scale marked in background; Measure from frame by frame playback; OR motion sensor(near bottom of ramp); facing up the ramp; readings taken at the bottom;	Max 3

Question number			Answer	Notes	Marks
5	(d)		Any three of timing variation; distance variation /accuracy of starting position; friction effect; poor ‘launch’;	Acceptable ideas include- error from starting / stopping stopclock / effect of reaction time (IGNORE ‘human error’) car not running straight/ramp not even effect of (rolling) friction effect of air resistance/drag friction not constant car pushed at start car hits side of ramp ignore different car/changing slope height	Max 3

Total 12 marks