Mark scheme

Question			Answer/Indicative content	Marks	Guidance
1	a		**First check the tangent drawn and the answer on the answer line** **If appropriate tangent drawn and answer between 2.5 - 3.5 (m/s^2) award 4 marks** Tangent drawn at t = 1.0 s ✓ Triangle drawn on tangent OR <u>two</u> suitable points on tangent indicated OR Δx and Δy indicated ✓ Correct substitution of two data points into Δy ÷ Δx ✓ Acceleration = 2.87 (m/s^2) ✓	4 (AO 2.1) (AO 2.1) (AO 1.1) (AO 2.1)	**ALLOW** any attempt at tangent at 1.0s which does not pass below the curve (judge by lack of gap) **IGNORE** size of triangle (assessed in Q 17) e.g., $\frac{8.0-2.4}{1.95-0} = 2.87$ **DO NOT ALLOW** one data point e.g., (1.0, 5.3) **ALLOW** max three marks for answer expressed as a fraction **<u>Examiner's Comments</u>** The majority of the candidates made a good attempt at drawing a tangent to the line and then correctly calculated the gradient. Candidates should be encouraged to draw the tangent as large as possible so that the size of the triangle used to calculate the gradient could also be as large as possible. Credit was not given to candidates who did not draw a tangent. A small number of candidates drew the tangent starting from the origin. A common error for lower-scoring candidates was to calculate the gradient by using the point (1.0, 5.3) which would not work in this case since the tangent does not pass through the origin.
	b		**First check the answer on the answer line** **If answer between 12 and 14 (m) award 3 marks** Area<u>s</u> on graph indicated **OR** distance = area under graph/curve ✓ Clear evidence of use of appropriate	3 (AO 2.1) (AO 2.2) (AO 2.1)	**DO NOT ALLOW** 2.5 × 7 = 17.5 or $7^2(-0^2) = 2as$ At least a minimum of three areas added

			readings taken from graph to determine area using a suitable method ✓ Distance between 12.0 and 14.0 (m) ✓		Suitable methods include: counting squares (any size), dividing the area under the graph into triangles, rectangles or trapeziums For example, finding a 1cm x 1cm square as 0.25 m^2 or a 2 mm x 2mm square as 0.01m^2 and then multiplying this by the number of squares counted **Examiner's Comments** This question required candidates to use the graph. High-scoring candidates stated that the distance was equal to the area under the graph and then marked relevant areas on the graph paper. The two common approaches by candidates were either to calculate the distance of a 1 cm × 1 cm square and multiply this by an estimate of the number of 1 cm^2 under the graph, or to split the area into several trapeziums (with time intervals of 0.5 s), work out the distance for each shape and add them together. Some candidates incorrectly approximated the graph to one triangle. Other candidates either used distance = speed × time, for example, 7 × 2.5 = 17.5 (m) (assuming that the speed was constant) or distance $= \frac{v^2 - 0^2}{2a}$ where a was the answer to the previous part, assuming that the acceleration was constant. **Misconception** Some candidates did not understand that the area under a velocity time graph is displacement, or did not know how to calculate the area under the graph from a non-linear line (curve).
			Total	**7**	
2			**Level 3 (5–6 marks)** Description of the trend shown in the results **and** detailed suggestions with reasoning to improve the experimental procedure.	6 (AO 3.1a x 2) (AO 3.3b x 4)	**AO3.1a Analyses the results to interpret the trend shown by the results.** For example,

			OR Detailed description of the trend shown in the results **and** suggestions to improve the experimental procedure *There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.* **Level 2 (3–4 marks)** Detailed description of the trend shown in the results **OR** Detailed suggestions to improve the experimental procedure **OR** Description of the trend shown in the results and suggestions to improve the experimental procedure *There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence.* **Level 1 (1–2 marks)** Basic description of the trend shown in the results. **OR** Basic suggestions to improve the experimental procedure. *The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the evidence may not be clear.* **0 mark** *No response or no response worthy of credit.*		• as the area increases, time to fall increases ORA • the relationship is not linear / proportional • numerical analysis justifying non-linear **AO3.3b Analyses the information to improve experimental procedures.** For example, • Repeat readings more than twice (and take a mean) • Take more values for the area (4 values is not enough) • Record acceleration data to a consistent number of decimal places/significant figures • Use the same number of strings on the parachutes • Drop over a longer distance • Drop over an exact distance, not 'about' 2m • Measure drop height to the nearest cm using a ruler • Improve timing method e.g., video the drop and calculate time more accurately • Use the same mass/weight/size load on the parachutes - it varies • Use the same shape of parachute - some of these are circular and others are square • Use a wider range of areas • Sensible description of method to determine the area of the parachute • Ignore anomalous data points **IGNORE** constant intervals **<u>Examiner's Comments</u>** Most candidates were able to describe a simple trend in the results. Few candidates analysed the results further to consider whether there was a linear relationship or directly proportional relationship between the area and the time. Many candidates gave a sensible list

					of improvements. Candidates who explained these improvements were able to access the higher range of marks.
			Total	**6**	
3			B	1 (AO 2.1)	**Examiner's Comments** The majority of the candidates answered this question correctly. High-scoring candidates often wrote the equation that they used in the white space before substituting in the values and rearranging.
			Total	**1**	
4	a	i	Measure angles with a protractor ✓ Angle (of incidence and angle of refraction) measured between ray and normal ✓ **And any two from:** Draw normal (where ray enters block) ✓ Trace along light rays (with a pencil)✓ Detail on tracing rays e.g., draw crosses along rays first then remove block and join them up ✓ Change the angle of incidence (to measure different angles of refraction) ✓ Plot a graph to show relationship between angle of incidence and angle of refraction ✓	4 AO 2 × 1.2 2 × 3.3a	**ALLOW** can be shown on Fig 22.1 **ALLOW** draw line at 90° (where ray enters block) **ALLOW** draw a line entering block and shine laser along it **ALLOW** use of pins on rays to trace where the light rays are **Examiner's Comments** This question assessed candidates' working scientifically skills. Nearly all candidates attempted this question, but many did not appear to be very familiar with the practical activity. The question discriminated well between the lower-achieving and higher-achieving candidates. Poor quality of communication and lack of detail resulted in few candidates gaining full credit. Common errors included: • vague statements, e.g. measure angles, without adding detail such as the equipment used • not being explicit as to what they were measuring, e.g. not

					stating that the angle being measured was between the ray and the normal. Some candidates scored this mark by clearly labelling the angle on Fig. 22.1 **Assessment for learning** Candidates could benefit from starter or plenary activities where they are provided with a practical activity and asked to write a short method, including a list of the equipment and what the equipment measures.
		ii	Calculate a constant from one pair of data values ✓ Calculate a constant from a different pair of angles and compare ✓	2 AO 2 × 3.2a	e.g., 22/14 = 1.57 34/22 = 1.55 48/30 = 1.60 55/33 = 1.67 62/36 = 1.72 **ALLOW** use of vertical ratios e.g., 48/34 = 1.41 30/22 = 1.36 etc **ALLOW** use of calculated constant from one pair of data values to show that it does not work with another pair of data values e.g., 22/14 = 1.57 and 48 ÷ 1.57 ≠ 30 **ALLOW** use of vertical ratios e.g., 48/34 = 1.4 but 30/22 = 1.36 etc **Examiner's Comments** Many students demonstrated alack of understanding of how to show if two variables are directly proportional to each other. These candidates often had the misconception that if the differences between corresponding values were not constant, then the variables were not in direct proportion. To gain credit, candidates could have: • calculated a ratio from one pair of data values and shown that this was not the same as the ratio calculated from another pair of data values

					• found the multiple for one pair of data values and then shown that this would not work for another pair of data values • shown that if the angle of incidence was multiplied by a factor, then the angle of refraction was not multiplied by the same factor. **Assessment for learning** Candidates should note that they must evaluate the ratios, rather than expressing them as fractions with different denominators.
	b		(Green and red light have) different wavelengths/frequencies ✓ (Idea that) the amount the speed changes (in glass) is different for each colour ✓	2 AO 2 × 1.1	**ALLOW** red light has longer wavelength/smaller frequency / **ORA** **DO NOT ALLOW** red light has shorter wavelength/larger frequency / **ORA** **ALLOW** red light slows down the least (in glass) / **ORA** **ALLOW** speed of red light in glass is larger (than speed of green light) **ALLOW** speed in glass is different for each colour **DO NOT ALLOW** speed of red light in glass is smaller (than speed of green light) / **ORA** **Examiner's Comments** Most candidates were able to explain that different colours have different wavelengths/frequencies, although some candidates thought that red light has a shorter wavelength than green light. Only the higher-achieving candidates recognised that the amount the speed changes in glass is different for each colour. **Misconception**

					A common misconception was that different colours of light have different speeds in air.
	c		Both rays drawn as straight lines and refract towards principal axis ✓ The green ray crosses the principal axis closer to the lens than the red ray ✓	2 AO 1.2 1.1	**Examiner's Comments** The vast majority of candidates scored at least 1 mark for showing rays that converged as they passed through the lens. However, a significantnumber of these candidates incorrectly thought that rays of light would converge and meet at the principal axis.
			Total	**10**	
5		i	Visible light has a larger frequency (than infrared) / **ORA** ✓ Visible light has shorter wavelength (than infrared) / **ORA** ✓	2 (2 x AO 1.1)	**IGNORE** longer/shorter frequency
		ii	**Any two from:** Count number of waves (passing a point) ✓ Measure time (for these waves with a stopwatch) ✓ Divide number of waves (passing a point) by the time (for these waves) ✓ **Alternative method** (idea of) measure time period / time for 1 wave ✓ Use frequency = 1 ÷ time period ✓	2 (2 x AO 2.2)	**ALLOW** count how many times an object e.g. cork bobs up and down **IGNORE** time it takes waves to travel a certain distance **ALLOW** count number of waves in a certain time for 2 marks **If no other marks scored:** (idea that) frequency is the number of waves per second for 1 mark **Examiner's Comments** The majority of candidates gained full credit for the idea of counting the number of waves passing a point in a certain time. The most common errors stemmed from not reading the question carefully enough and changing the scenario, e.g. using a ripple tank and using the equation $f = v \div \lambda$.
			Total	**4**	
6	a		**First check the answer on the answer line** **If answer = 15 (m / s) award 3 marks**	3 (3 x AO 2.2)	**ALLOW** e.g. 5u ÷ 2 **OR** 0.5xbxh **ALLOW** evidence seen on graph

			Evidence for use of area under line / distance = area under (v-t) graph ✓ 30 = ½ × u × 4 **OR** u = 2 × 30 ÷ 4 ✓ (u =) 15 (m / s) ✓		**ALLOW** use of higher level answers using SUVAT equations of motion e.g. s = (u + v)t ÷ 2 **Examiner's Comments** This question required candidates to equate the distance travelled to the area under the graph (for the 4 seconds of braking). The majority of candisupdates did not realise this and did not gain any credit. Some candidates attempted to use an equation of motion or speed = distance ÷ time. A few candidates used the area under the entire graph rather than just the braking distance, but did gain some credit as they had shown their working.
	b	i	**First check the answer on the answer line** **If answer = 27 (m) award 3 marks** Select and rearrange: (distance =) final velocity^2 − initial velocity^2 ÷ 2 × acceleration **OR** (s =) $v^2 - u^2 \div 2 \times a$ ✓ Substitution: (s =) $-18^2 \div -12$ **OR** $18^2 \div 12$ **OR** 324 ÷ 12 ✓ (s =) 27 (m) ✓	3 (AO 1.2) (2 x AO 2.1)	**ALLOW** correct substitution into unrearranged equation for 1 mark e.g. $0 - 18^2 = 2 \times -6 \div s$ **OR** $18^2 - 0 = 2 \times 6 \times s$ **ALLOW** d for s **ALLOW** −27 (m) **ALLOW** other correct use of SUVAT equations of motion **Examiner's Comments** It was good to see that the majority of candidates could select the correct equation from the Equation Sheet and most gained 1 mark from substituting the values into the unrearranged equation. However, rearranging was again an issue, so something candidates need to practise.
		ii	**First check the answer on the answer line** **If answer = 2400 − 21 000 (N) award 3 marks**	3 (AO 1.1) (2 x AO 2.1)	**ALLOW** 2 marks for force correctly calculated if mass is outside of range **ALLOW** 400 − 3500 (kg)

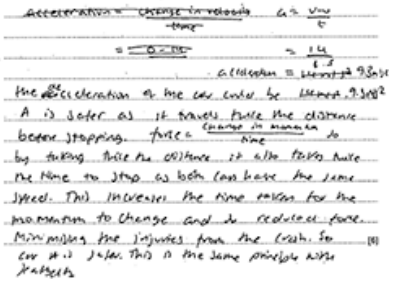
			Estimation of mass of car = 1500 (kg) ✓ (F =) 1500 × 6 ✓ (F =) 9000 (N) ✓		**ALLOW** candidate's mass estimate x 6 for 1 mark **ALLOW** candidate's mass estimate x 6 correctly calculated for 2 marks **Examiner's Comments** The vast majority of candidates scored at least 2 marks for substituting values into the equation and estimating the force acting on car B. However, estimates of the mass of the car varied a lot, with values of 6 kg to 600 000 kg seen. **Assessment for learning** Candidates could benefit from short activities where they estimate values of quantities such as the masses and speeds of objects.
		iii	**Any two from:** Skid mark may not have clear start or end ✓ Skid mark may be curved / difficult to measure ✓ (Idea that) car may not have produced a skid for whole of braking (distance) / **AW** ✓ (Idea that) skid mark only occurs when the wheels stop turning ✓	2 (2 × AO 3.2a)	**ALLOW** skid marks don't appear as soon as braking starts / deceleration is not always large enough to produce skids marks
			Total	**11**	
7			The Earth is accelerating ✓	1 (AO 1.1)	
			Total	**1**	
8			A	1 (AO 2.1)	**Examiner's Comments** Nearly all candidates were able to substitute the values into the equation provided correctly in order to calculate a distance of 0.030 m. However, the majority of candidates did not take into

					account that the distance they had calculated was from the emitter to the soft tissue-bone boundary and back to the receiver, and therefore they made the common error of not halving their answer.
			Total	**1**	
9			C	1 (AO 1.2)	**Examiner's Comments** This question required students to convert between km / h and m / s. Candidates usually find converting compound units challenging so it was pleasing to see that the majority of candidates were able to do this correctly.
			Total	**1**	
10			**C**	1 (AO 2.1)	**Examiner's Comments** The majority of candidates realised that the area under the graph was equal to the distance travelled by the object. Most candidates who did not gain credit incorrectly gave D as the response; this was obtained by just multiplying the two numbers together.
			Total	**1**	
11			**A**	1 (AO 1.2)	**Examiner's Comments** This question was well answered. Good candidates used the white space around the question for their working.
			Total	**1**	
12			**D**	1 (AO 2.1)	**Examiner's Comments** This question was very well answered.
			Total	**1**	
13			**B**	1 (AO 2.2)	**Examiner's Comments** Some candidates believed the car was braking in the first 0.7 seconds of the journey, and therefore calculated the area under that section of the graph (option A) ; this is the thinking distance rather than the braking distance.

			Total	**1**	
14			**A**	1 (AO 1.1)	
			Total	**1**	
15			**B**	1 (AO 2.1)	**ALLOW** 6.0 (m / s^2) **Examiner's Comments** This was a challenging question. Over half of candidates chose an incorrect option. Candidates needed to identify the relevant equation from the equation sheet and rearrange it to determine the deceleration of the vehicle. An alternative approach can be used: use the equation (average) speed = distance ÷ time to determine the deceleration time, and then use acceleration = change in velocity ÷ time. Where this was seen, candidates used the initial speed of 30 m / s instead of the average speed.
			Total	**1**	
16		i	The sound reflects/echoes (from the cliff) ✓ The amplitude of the sound decreases with distance / some of the energy/wave/sound is absorbed (by the cliff/air) ✓	2 (2 × AO1.1)	**IGNORE** bounces **ALLOW** energy lost as travelling through air / energy dissipated into surroundings/cliff **ALLOW** sound/waves/energy spreads out **ALLOW** some sound/waves/energy reflect/travel in different directions **IGNORE** just energy lost **Examiner's Comments** The majority of candidates gained both marks. Of those that did not, it was usually from the lack of scientific terminology, e.g. bounce back instead of reflect, or insufficient detail to explain why the second clap is quieter, e.g. energy is lost.
		ii	**FIRST CHECK THE ANSWER ON ANSWER LINE** **If answer = 231 (m) award 4 marks** (distance =) speed × time ✓ (distance travelled by wave =) 330	4 (AO1.2) (3 × AO2.1)	**ALLOW** symbol equation / equation in any form **ALLOW** 0.7 seen for 1 mark **ALLOW** 330 × 0.7 for 3 marks **ALLOW** 3 marks for answer of 462(m)

			×1.40 ✓ (distance travelled by wave =) 462 (m) ✓ (distance to cliff =) ½ × 462 = 231 (m) ✓		**Examiner's Comments** Nearly all candidates gained full marks or 3 marks. Several candidates did not gain the last mark because they did not divide either the time or their answer for distance by two.
		iii	**Any two from:** Due to reaction time ✓ Sound may not be heard (clearly) ✓ The student might start the stopwatch too early / stop the stopwatch too late / be distracted ✓ Wind/temperature/humidity/rain affects the speed ✓	2 (2 × AO3.2a)	**IGNORE** human error **ALLOW** cliff surface is not flat so waves take different times to return **ALLOW** starts/stops stopwatch at the wrong time / can't clap and press button at the same time **IGNORE** weather conditions **Examiner's Comments** Most marks were gained for ideas about reaction time, pressing the stopwatch too early/late and the difficulty in clapping and pressing the stopwatch at the same time. Of the candidates who did not score both marks, most answers usually referred to human error.
		iv	**Any one from:** Repeat the measurements and take a mean ✓ (Idea of) recording sound (and playback) to find accurate time ✓ Use another person (next to first student) to measure the time between clap and echo ✓	1 (AO3.3b)	**ALLOW** (idea of) clap-echo method / measuring time for multiple claps **ALLOW** (idea of) a method using microphone(s) linked to computer/oscilloscope/electronic timers **Examiner's Comments** The improvements suggested often followed on from the candidate's answer to part (a) (iii) and most candidates were given the mark. Incorrect responses often referred to inappropriate technology such as light gates or vaguely described sound-activated timers. **Assessment for learning**

					It would be beneficial for students to think about which improvements could be made to their method each time they carry out an experiment.
			Total	**9**	
17			**Level 3 (5–6 marks)** Detailed explanation of why car **A** is safer than car **B** **AND** good estimation of deceleration of car **A** / quantitative comparison of decelerations *There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.* **Level 2 (3–4 marks)** Detailed explanation of why car **A** is safer than car **B** **AND** an attempt at estimation/comparison of decelerations **OR** Good estimation of deceleration of car **A** / quantitative comparison of decelerations **AND** a basic explanation of why car **A** is safer than car **B** *There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence.* **Level 1 (1–2 marks)** Basic explanation of why car **A** is safer than car **B** **OR** An attempt at estimation/comparison of decelerations *There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.* **0 marks**	6 (3 × AO2.1) (3 × AO1.1)	**AO2.1 Applies knowledge and understanding of scientific ideas to estimate acceleration** Estimation of acceleration using distance or time • car **B** has a higher/double acceleration • Use of $a = (v^2 - u^2)/2s$ • $a = (-)14^2 / 2 \times$ (their value of distance) • Use of $a = (v - u) / t$ • $a = 14/$ (their value of time) **AO1.1 – Demonstrates knowledge and understanding why car A is safer than car B** • (Smaller force) reduces risk of (serious) injury to driver/passengers Explanation • Increased stopping distance/time for car **A** means deceleration of car **A** is half/less than car **B** / **ORA** • Car **A** slows down over a longer distance/time • Smaller acceleration / smaller rate of change of momentum for car **A** / **ORA** • So force acting on car **A** is half/less than car **B** / **ORA** • Since F = ma / F= rate of change of momentum • Greater distance/time for (kinetic) energy to be dissipated • Since W = Fd / same KE transferred / same KE dissipated over a longer distance/time

			No response or no response worthy of credit		**Examiner's Comments** This was the Level of Response question, targeted up to Grade 9, and assessed AO1 and AO2. There was a wide range of marks achieved and the question discriminated very well. Very few candidates were not given any marks. The majority of candidates were able to give a description of why car A was safer in terms of force and/or injuries or attempted to estimate the deceleration, although the values they used for time or distance were often very unrealistic. Many candidates discussed crumple zones. More detailed responses required for Level 2 and 3 included linking deceleration or rate of change of momentum to force with a reference to relevant equations. Exemplar 2  This response achieved Level 3, 6 marks. The explanation is very detailed, using the equation to link more time for the momentum to change to less force. There is a good estimation of the deceleration using a correct equation from the Data Sheet and a realistic value for the time taken.
			Total	**6**	
18			A ✓	1 (AO2.2)	
			Total	**1**	
19	a	i	1.12 (s)	1 (AO1.2)	**Examiner's Comments** Most candidates correctly calculated the mean to be 1.12.

		ii	(Mistake) Mean for metal / 0.4444✓ (Correction) Calculate mean to two significant figures / 0.44 ✓	2 (AO3.2a) (AO3.3b)	**ALLOW** correct reference to significant figures or decimal places **ALLOW** decimal places for significant figures **ALLOW** three significant figures / 0.444 **Examiner's Comments** Most candidates correctly identified that the mean for the metal, 0.4444, was the mistake and that the correct value of the mean was 0.44 (rounded) or 0.444 (unrounded).
		iii	No, as no-one else has completed the experiment / AW ✓	1 (AO3.2b)	**ALLOW** has not repeated the experiment with different equipment or different techniques **Examiner's Comments** Many candidates did not state that the data showed that the experiment was NOT reproducible. Some high scoring candidates explained that for the experiment to be reproducible, the experiment would need to be compared with someone else doing the experiment or different equipment or techniques being used. **Misconception** Candidates are often confused between the terms repeatable and reproducible. To assist candidates there is a useful publication – Language of measurement.
		iv	**Any one from:** Reduce random errors ✓ To see if the experiment was repeatable ✓ To check for anomalies / outliers✓ To increase precision ✓	1 (AO3.2a)	**ALLOW** reduce errors **IGNORE** accurate / reliable / valid **Examiner's Comments** Many candidates stated that repeating the experiment would be more accurate which did not gain marks. Candidates who gained marks often stated that it would identify anomalies or outliers and increase the precision.

					Candidates could also have stated that it reduced random errors or check that the experiment was repeatable. **Misconception** Candidates are often confused between the terms accurate and repeatable. To assist candidates there is a useful publication – Language of measurement.
	b	i	(1.12 ÷ 0.44) = 2.5 ✓	1 (AO2.1)	**ALLOW ECF** from (a)(i) **ALLOW** any number which rounds to 2.5 **ALLOW** 2.55 **Examiner's Comments** Most candidates scored marks for this question. Some candidates inverted the answer.
		ii	**FIRST CHECK THE ANSWER ON ANSWER LINE** **If answer = 2.7 award 4 marks** (Mean) speed = distance / time ✓ = 1.2 / 0.44 ✓ = 2.73 s = 2.7✓	4 (AO1.2) (AO2.1) (AO2.1) (AO1.2)	**ALLOW ECF** for use of time = 1.12 s **ALLOW** 1.07 for two marks **ALLOW** 1.1 for three marks Correct re-arrangement **ALLOW** 1.2 / 0.444 or 1.2 / 0.4444 **ALLOW** 2.702 or 2.7002 or 2.7 or 2.72or 2.72 **DO NOT ALLOW** 2.7 **Examiner's Comments** This question was well answered. Some candidates used the wrong mean. Useful advice is to underline the quantities in the question.
	c		**Any three from:** falling magnet produces a changing magnetic field ✓ magnetic field / ✓ magnet induces a potential difference / current (in the copper / tube) ✓ magnetic field due to current in copper	3 (3 × AO1.2)	**IGNORE** copper becomes a magnet **Examiner's Comments** Many candidates discussed the magnet being attracted to the copper. Some high scoring candidates realised that the falling magnet produced a changing magnetic field

			is produceds ✓ this magnetic field due to the current opposes the original magnetic field of the magnet✓		which induced a current in the copper tube. To gain further marks, candidates needed to state that the induced current in the copper created a magnetic field that opposed the motion of the magnet. **Misconception** Many candidates stated that the magnet was attracted to copper. Many candidates did not understand electromagnetic induction.
			Total	**13**	
20			A ✓	1 (AO2.1)	**Examiner's Comments** Candidates found this question challenging with the common incorrect answer being B where candidates added together the two areas to work out the distance the object travelled rather than the displacement.
			Total	**1**	
21			A ✓	1 (AO1.2)	**Examiner's Comments** Some candidates incorrectly answered this question often selecting B. Candidates should be able to convert miles per hour to km / h and then to m /s. In this question the number of metres in a mile was given, so candidates needed to do the conversion of hours to seconds (1 hour = 3600 s). High scoring candidates often wrote in the white space $\frac{56\times1609}{60\times60}$ = 25.028.
			Total	**1**	