GCSE
STATISTICS
8382/1H

Higher Tier Paper 1

Mark scheme

June 2022

Version: 1.0 Final

226G8382/1H/MS

Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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Glossary for Mark Schemes

GCSE examinations are marked in such a way as to award positive achievement wherever possible. Thus, for GCSE Statistics papers, marks are awarded under various categories.

If a student uses a method which is not explicitly covered by the mark scheme the same principles of marking should be applied. Credit should be given to any valid methods. Examiners should seek advice from their senior examiner if in any doubt.

M	Method marks are awarded for a correct method which could lead to a correct answer.
A	Accuracy marks are awarded when following on from a correct method. It is not necessary to always see the method. This can be implied.
B	Marks awarded independent of method.
ft	Follow through marks. Marks awarded for correct working following a mistake in an earlier step.
SC	Special case. Marks awarded for a common misinterpretation which has some mathematical worth.
M dep	A method mark dependent on a previous method mark being awarded.
B dep	A mark that can only be awarded if a previous independent mark has been awarded.
oe	Or equivalent. Accept answers that are equivalent. eg accept 0.5 as well as $\frac{1}{2}$
[a, b]	Accept values between a and b inclusive.
[a, b)	Accept values $a \leq \text{value} < b$
3.14…	Accept answers which begin 3.14 eg 3.14, 3.142, 3.1416
Use of brackets	It is not necessary to see the bracketed work to award the marks.

Examiners should consistently apply the following principles

Diagrams

Diagrams that have working on them should be treated like normal responses. If a diagram has been written on but the correct response is within the answer space, the work within the answer space should be marked. Working on diagrams that contradicts work within the answer space is not to be considered as choice but as working, and is not, therefore, penalised.

Responses which appear to come from incorrect methods

Whenever there is doubt as to whether a student has used an incorrect method to obtain an answer, as a general principle, the benefit of doubt must be given to the student. In cases where there is no doubt that the answer has come from incorrect working then the student should be penalised.

Questions which ask students to show working

Instructions on marking will be given but usually marks are not awarded to students who show no working.

Questions which do not ask students to show working

As a general principle, a correct response is awarded full marks.

Misread or miscopy

Students often copy values from a question incorrectly. If the examiner thinks that the student has made a genuine misread, then only the accuracy marks (A or B marks), up to a maximum of 2 marks are penalised. The method marks can still be awarded.

Further work

Once the correct answer has been seen, further working may be ignored unless it goes on to contradict the correct answer.

Choice

When a choice of answers and/or methods is given, mark each attempt. If both methods are valid then M marks can be awarded but any incorrect answer or method would result in marks being lost.

Work not replaced

Erased or crossed out work that is still legible should be marked.

Work replaced

Erased or crossed out work that has been replaced is not awarded marks.

Premature approximation

Rounding off too early can lead to inaccuracy in the final answer. This should be penalised by 1 mark unless instructed otherwise.

Continental notation

Accept a comma used instead of a decimal point (for example, in measurements or currency), provided that it is clear to the examiner that the student intended it to be a decimal point.

Q	Answer	Marks	Comments
1	0.05	B1	

Q	Answer	Marks	Comments
2	skew	B1	

Q	Answer	Marks	Comments
3	$\frac{1}{3}$	B1	

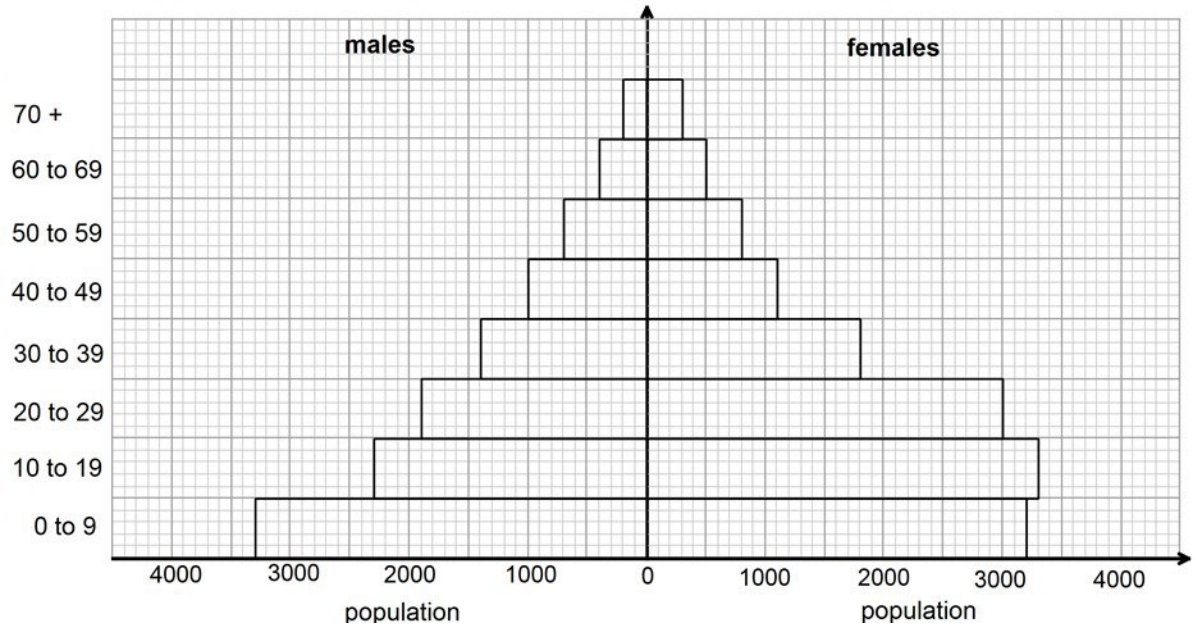
Q	Answer	Marks	Comments
4	stratification	B1	

Q	Answer	Marks	Comments
5(a)	[38, 42]	B1	

Q	Answer	Marks	Comments
5(b)	For: the general trend is (mainly) downwards/decreases or negative correlation	B1	oe general statement
	Against: some older ages are more likely than younger ones with example, eg 61+ compared to 60 or references specific ages which show statement is incorrect or correct reference to peaks/spikes/gradients	B1	oe specific exception

Additional guidance for this question is on the next page

5(b)	**Additional Guidance**	
	Ignore any non-contradictory or irrelevant statements	
	If answers reference numbers rather than percentages then B1Max, eg The numbers of people passing decreases over time and more people aged 17 pass than aged 16	B0B1
	If values are used, they must be between the correct graduations given on vertical axis unless clearly on a given value, eg Age 42 given as 36(%) is acceptable as value [32, 37] Age 23 given as 47(%) is the only possible correct value	
	For: Percentage decreases as age increases Lower percentage of over 40s passed than under 40s From 24 to 42 the pass rate decreases About 48% of 18s pass compared to only 37% of 60+ (implies a trend) Less likely to pass at 40 than 30 (does not imply a trend) Line of best fit is negative A higher proportion of older people fail (repeating the original statement)	 B1 B1 B1 B1 B0 B0 B0
	Against: Pass rate rises and fall Lines goes up at 60+ More likely to pass at 16 than 18 More likely to pass at 16 than 17 Some 40 to 60s are higher than expected Reference to unreliable or inaccurate source/graph/data without another correct evaluation	 B1 B1 B1 B0 B0 B0

Q	Answer	Marks	Comments
6(a)	Labels of (population) and females and the correct scale with a minimum of 1000, 2000 and 3000 labelled	B1	oe
	Bars drawn correctly	B2	assume scale is identical to the scale for males if no scale is added $\pm\frac{1}{2}$ square tolerance B1 4 to 7 bars correct for their scale
	Additional Guidance		
	Condone missing population (as it appears on the left)		
	Condone missing 4000 on the scale		
			

<table>
<tr><th>Q</th><th>Answer</th><th>Marks</th><th>Comments</th></tr>
<tr><td rowspan="11">6(b)</td><td>Any correct comparison of populations in the two years, eg
The population (aged 20-29) is greater (in 1961 than in 1851)</td><td>B1</td><td>oe
eg the number of males (or females) (aged 20-29) is greater (in 1961 than in 1851)</td></tr>
<tr><td>Any correct comparison between genders, eg
In 1851, there were more females than males (in the 20-29 age group)
or
(In 1961,) there were more males than females (in the 20-29 age group)
or
The gender gap / range has decreased
or
The gender gap has reversed</td><td>B1</td><td>oe</td></tr>
<tr><td colspan="3">Additional Guidance</td></tr>
<tr><td colspan="2">Condone any incorrect calculations with a correct statement</td><td></td></tr>
<tr><td colspan="2">Ignore any non-contradictory or irrelevant statements</td><td></td></tr>
<tr><td colspan="2">The males have gone up, the females have gone up, the males have gone up by more than the females</td><td>B1B0</td></tr>
<tr><td colspan="2">There’s a bigger population (now)</td><td>B1</td></tr>
<tr><td colspan="2">There was a smaller population before</td><td>B1</td></tr>
<tr><td colspan="2">They’ve both more than doubled</td><td>B1</td></tr>
<tr><td colspan="2">There was a smaller population in 1851</td><td>B1</td></tr>
<tr><td colspan="2">There was a smaller population</td><td>B0</td></tr>
</table>

Q	Answer	Marks	Comments
7(a)(i)	$\frac{150\,000 - 135\,000}{1000} \times 0.05$	M1	oe
	0.75	A1	oe eg 75%
	Additional Guidance		
	Do not ignore further work, eg 15 × 0.05 = 0.75, answer 99.25		M1A0
	0.75%		M1A0

Q	Answer	Marks	Comments
7(a)(ii)	their 0.75 × their 0.75	M1	oe
	$\frac{9}{16}$ or 0.5625 or 0.56 or 0.563 or 56.25% or 56% or 56.3%	A1ft	oe equivalent fraction ft their 7(a)(i)
	Additional Guidance		
	Answers must be correct to 2sf or better		
	Ignore any attempt to round after the correct answer seen, eg 0.5625 = 0.562		M1A1

Q	Answer	Marks	Comments
7(a)(iii)	Selling in one month is independent to selling in another	B1	oe eg months are independent
	Additional Guidance		
	Condone use of 'probability'/'chance' for 'risk'		
	The risk each month is the same The risk stays the same over time (implies each month) The risk is (still) the same		B1 B1 B0
	The risk of not selling in month one is the same as the risk of not selling in month two		B1
	The risk of not selling in one month is the same as not selling in two months		B0
	She doesn't sell the house in the first month		B0
	The price stays the same		B0

Q	Answer	Marks	Comments
7(b)(i)	**Alternative method 1 – Starting with £135 000**		
	1 ÷ 0.05 or 20 or 20 000	M1	oe
	(£)155 000	A1	
	Alternative method 2 – Starting with £150 000		
	5 (× 1000) or 5000	M1	oe
	(£)155 000	A1	

Q	Answer	Marks	Comments
7(b)(ii)	Any valid reason, eg Risk (of not selling) will change over time or Prices will probably go up making that price more attractive or Natalie might accept a lower offer even though it is on sale at that price	B1	oe
	Additional Guidance		
	Somebody might be willing to pay asking price	B1	
	There's no time limit (so it will sell eventually)	B1	
	House prices may rise	B1	
	The house might be in a desirable location	B1	
	The local schools may be outstanding	B1	
	House/Home improvements	B1	
	It's only a prediction / predicted risk / estimate It's only a model	B1 B1	
	It might be a low price for buying a house (in that area) It's a low price for buying a house (in that area)	B1 B0	
	(The housing) market may change	B0	
	Inflation	B0	

Q	Answer	Marks	Comments
8(a)	Changes in prices (of goods/services)	B1	oe
	Additional Guidance		
	Changes in the price of (everyday) things/products The price of goods/things		B1 B0
	It measures the change(s) in price(s) It measures the changes in prices including mortgages		B1 B0
	Measures inflation of prices/products/services (Changes in) inflation		B1 B0
	It measures the price of goods		B0
	Consumer Price Index		B0

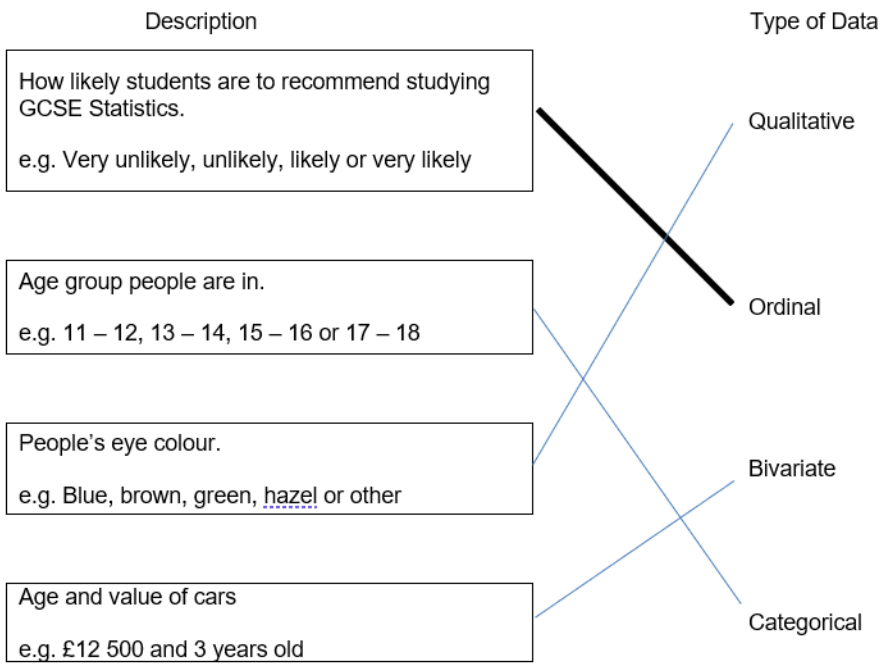
Q	Answer	Marks	Comments
8(b)	5	B1	

Q	Answer	Marks	Comments
8(c)	Any correct statement referring to the trend of both from 2010 to 2018 eg, both private and public sectors increased (from 2010 to 2018)	B1	oe
	Any correct statement referring to pay before and after 2014 eg, before 2014, public was higher but after 2014 private was higher	B1	oe

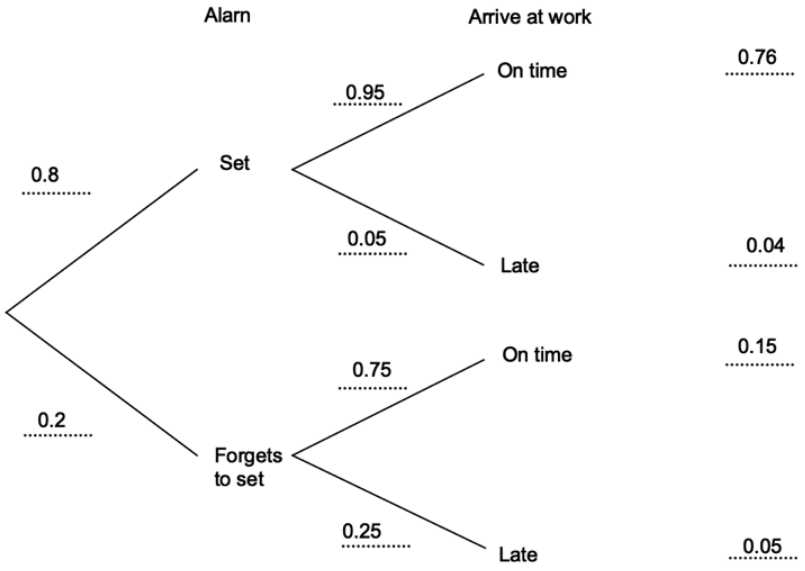
Additional guidance for this question is on the next page

8(c)	**Additional Guidance**	
	Ignore any non-contradictory or irrelevant statements	
	Index values for Jan 2010, if referred to, must be 100 Acceptable Index values for May 2018: Public sector = [112, 115) Private sector = [116, 119]	
	If Index values are used as evidence, they must be correct, eg	
	Private increased to 118, public only increased to 114, before 2014 public was higher, after 2014 private was higher	B1B1
	Private increased to 118, public only increased to 114	B1B0
	Private increased to 118, public only increased to 115	B0B0
	Private increased to 120, public only increased to 115	B0B0
	Private increased to 120, public also increased	B0B0
	Statements must not refer to amounts of pay, eg	
	Private sector has gone up 18(%), public sector has gone up by 14(%), so private sector pay has gone up the most	B1B0
	Private sector has gone up, public sector has gone up, private sector has gone up by a bigger amount (implies a bigger percentage)	B1B0
	Private sector has gone up by £18, public sector has gone up by £14, so private sector has gone up the most	B0B0
	They both increase (implies from 2010 to 2018)	B1B0
	They both increase, private increases at a faster rate	B1B0
	Public increased at a faster rate until 2014, then the private sector increased at a much faster rate (than the public sector)	B1B0
	They both increased, private overtook public in 2014 and has been higher ever since	B1B1
	Private overtook public in 2014 and has been higher ever since	B0B1
	Private overtook public in 2014 (only looking at one point)	B0B0
	There's positive correlation between Index and Time	B1B0
	Both have positive correlation	B0B0
	The private sector showed a more positive trend than public sector	B1B0
	The trends increase	B1B0
	The trend increases	B0B0

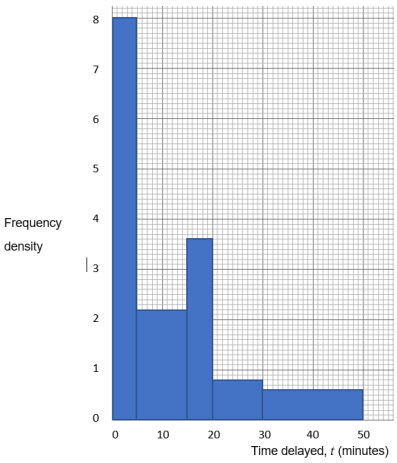
Q	Answer	Marks	Comments
8(d)	$\frac{100}{120}$ (× 100) or 0.83(3…)	M1	oe
	83(.3…)	A1	oe
	83(.3…) and (Jim's) first statement is correct and (Jim's) second statement is incorrect	A1	oe
	Additional Guidance		
	Condone use of %		
	Ignore $\frac{120}{100}$ (may be seen as an attempt to validate the first statement)		
	83 and this is not 80 (to the nearest whole number)		M1A1

Q	Answer	Marks	Comments
9(a)	All 3 correct answers	B2	B1 1 or 2 correct answers
	Additional Guidance		
			

Q	Answer	Marks	Comments
9(b)	multivariate	B1	
	Additional Guidance		
	Condone multivariable or multivariative		

Q	Answer	Marks	Comments
10(a)	0.2 and 0.8 in correct positions	B1	oe
	0.76 ÷ their 0.8 or 0.95	M1	oe may be seen on diagram or can be implied from answer to their calculation
	0.05 ÷ their 0.2 or 0.25	M1	oe may be seen on diagram or can be implied from answer to their calculation
	Fully correct diagram	A1	
	Additional Guidance		
			4 marks

Q	Answer	Marks	Comments
10(b)	**Alternative method 1**		
	their 0.8 × their 0.05 or 0.04	M1	oe from diagram or calculation
	(0.05 + their 0.04) × 225 or 20.25	M1dep	allow their 0.2 × their 0.25 for 0.05
	20 or 21	A1ft	ft for their tree diagram must be integer value
	Alternative method 2		
	their 0.04 × 225 or 9 or their 0.05 × 225 or 11.25	M1	oe from diagram or calculation
	their 0.04 × 225 or 9 and their 0.05 × 225 or 11.25 or 20.25	M1dep	
	20 or 21	A1ft	ft for their tree diagram must be integer value

Q	Answer	Marks	Comments
11(a)	Fully correct histogram with bars correct widths with f.d. of 3.6, 0.8 and 0.6  	B3	B2 2 correct bars or 2 correct frequency densities B1 1 correct bar or 1 correct frequency density $\pm\frac{1}{2}$ square tolerance
	Additional Guidance		
	Condone any shading		

Q	Answer	Marks	Comments
11(b)	Identifies 50th or 50.5th term as median or Identifies $5 < t \leq 15$ as group containing median	M1	could be implied by $5+\frac{n}{22}$ where $n < 22$ or vertical line in bar for $5 < t \leq 15$
	$\frac{10}{22}$ (×10) or $\frac{10.5}{22}$ (×10) **or** [4.5, 4.55] **or** [4.77, 4.8]	M1dep	oe $\frac{10}{22}$ or $\frac{10.5}{22}$ implies M1M1dep
	[9.5, 9.55] **or** [9.77, 9.8]	A1	oe
	Additional Guidance		
	Do not accept 2nd bar circled as identification of their median for M1 unless labelled as median or vertical line drawn in bar		
	Ignore any attempt to round after the correct answer seen, eg 9.77 = 10		M1M1depA1

Q	Answer	Marks	Comments
11(c)	Only shows data for 100 trains/might not be representative **or** Do not know how many trains ran **or** Data only shows trains which were delayed/don't know how many were on time **or** May only have been collected over one day/short time period or no time period given **or** May be performing better than other companies	B1	

Additional Guidance	
Ignore any non-contradictory or irrelevant statements	
Most could have been on time	B1
May have only been for one day (and there might have been bad weather / factors out of their control)	B1
Was only for one day and there might have been bad weather / factors out of their control (we do not know the time period)	B0
Data could be outdated	B0
There may have been something outside the train companies control eg bad weather	B0
Any reference to trains being only delayed for a short time, eg	
Modal class is low / most trains only had a short delay	B0
Positive skew	B0

Q	Answer	Marks	Comments
12(a)	$\frac{n}{800} \times 100$ where $34 < n < 176$	M1	oe
	(9, 17)	A1	

Q	Answer	Marks	Comments
12(b)	top table → – 0.845	B1	
	bottom table → 0.831	B1	

Q	Answer	Marks	Comments
12(c)	… a strong negative correlation between time (after 8 am) and the number of space available	B1ft	oe ft unless 1.25 chosen
	… a strong positive correlation between time (after 1 pm / after 5 hours) and the number of spaces available	B1ft	oe ft for a different value chosen but not 1.25
	Additional Guidance		
	Do not accept trend for correlation		
	Ignore any non-contradictory or irrelevant statements		
	Do not accept correlation without context for B2, eg For top table (The two sets of data have a) strong negative correlation and For bottom table (The two sets of data have a) strong positive correlation		B0B1
	For top table (The two sets of data have a) negative correlation and For bottom table (The two sets of data have a) positive correlation		B0B0

Q	Answer	Marks	Comments
12(d)	The car park is only full for about 2 – 4 hours	B1	oe eg less than 50% of the time
	There is no information about other car parks (which may not be full) or Only talks about one day (not representative) or May be only 800 cars/everyone who needed a space got one	B1	oe
	Additional Guidance		
	Ignore any values or calculations if intention is clear		
	Ignore any non-contradictory or irrelevant statements		
	Condone 10 hours for 10 readings		
	For first B1 Only full between 12 and 2pm Not too full between 8 and 9 (and 4 and 5) For 5 – 7 hours there are spaces available For majority of the day there are spaces Carpark is never full		 B1 B1 B1 B1 B0
	For second B1 It only shows that this car park is full (implies other car parks) This data is only for 8am to 5pm		 B1 B0

Q	Answer	Marks	Comments
13(a)	**Alternative method 1**		
	Any one of: 60 × 82 **or** 4920 40 × 59 **or** 2360 20 × 26 **or** 520 7800	M1	oe
	$\frac{Their\ (4920 + 2360 + 520)}{60 + 40 + 20}$ or $\frac{7800}{120}$	M1dep	oe
	65	A1	
	Alternative method 2		
	Any one of: $82 \times \frac{60}{120}$ or 41 $59 \times \frac{40}{120}$ or 19.7 or 19.6(6…) or better $26 \times \frac{20}{120}$ or 4.3(3…)	M1	oe
	$\left(82 \times \frac{60}{120}\right) + \left(59 \times \frac{40}{120}\right) + \left(26 \times \frac{20}{120}\right)$	M1dep	oe
	65	A1	
	Additional Guidance		
	65% as answer		M1M1depA0
	$\left(\left(82 \times \frac{60}{120}\right) + \left(59 \times \frac{40}{120}\right) + \left(26 \times \frac{20}{120}\right)\right) \div 3$		M1M0depA0
	82 × 0.6 + 59 × 0.4 + 26 × 0.2 = 78 (working with percentages)		M0M0depA0

Q	Answer	Marks	Comments
13(b)(i)	$\frac{58-56}{10}$	M1	oe
	0.2	A1	oe

Q	Answer	Marks	Comments
13(b)(ii)	Paper 1 ticked and highest value / only positive (value)	B1ft	oe
	Additional Guidance		
	Allow any clear indication for selecting Paper 1		
	Paper 1 ticked and only one he scored above/past the class average		B1
	Paper 1 ticked and positive (value)		B0
	Paper 1 ticked and scored above/past the class average		B0
	Paper 1 ticked and his (standardised) score was above zero / the average		B0
	Paper 1 ticked and his (standardised) score was nearest to one		B0

Q	Answer	Marks	Comments
14(a)	control (group)	B1	

Q	Answer	Marks	Comments
14(b)	**1** – (good method because it) avoids bias/ is more representative (of those with pre-conceived ideas about the results) **or** **1** – (good method because it) should ensure a roughly equal split of people allocated to each group	B1	oe
	2 – (good method because) everyone is in the group in which (they think) they would perform the best **or** **2** – (good method because it) will be easier to carry out (no need to select) **or** 2 – (good method because it) is quicker / less time consuming **or** **2** – (poor method because) most people may want to be in Group B (so they listen to their favourite song) **or** **2** – (poor method because) unlikely to be representative/ biased/ people may choose the group they think they'll do better in **or** **2** – (poor method because) groups may be uneven	B1	oe
	Additional Guidance		
	Ignore any non-contradictory or irrelevant statements		
	1 – unbiased/representative and 2 – biased/unrepresentative		B1B1
	2 – may be distracted by their friends and unrepresentative 2 – may be distracted by their friends / may not have a/their favourite song		B1 B0
	1 – time consuming		B0

Q	Answer	Marks	Comments
14(c)(i)	Any variable other than the music that might affect reaction time eg tiredness, eyesight, hearing, other noise, health issues, age, gender	B1	oe
	Additional Guidance		
	Music played to group B may distract Group A (music is 'other noise' to Group A)	B1	

Q	Answer	Marks	Comments
14(c)(ii)	Ensure all participants have similar values for their variable in (i)	B1	oe eg pair participants according to a measure taken of the variable mentioned in (i)
	Additional Guidance		
	B1 can be scored even if B0 awarded in 14(c)(i) eg References volume of music in 14(c)(i) and states effective control measure, eg set all volumes the same	B1	
	Make sure both groups contain similar numbers of males and females	B1	
	Make sure both groups contain males and females	B0	
	Put all the males in one group and all the females in another	B0	

Q	Answer	Marks	Comments
15(a)	A-level maths results in my school are better than national results	B1	oe hypothesis not question accept 'as good as'
	Additional Guidance		
	Accept Shoab's or his school		
	Allow use of country eg Wales for 'national'		
	Condone any reference to Year group eg Year 11 students		
	A-level results are good in my school		B0
	A-level maths results are good in my school		B0
	A-level maths results are better in my school than other schools		B0

Q	Answer	Marks	Comments
15(b)	Any two from: Saves time/cheaper compared to census or easier than obtaining/ dealing with information from all previous students or states it would have been almost as easy to just get all the years results or less reliable/accurate/representative or makes database smaller/more manageable	B2	oe B1 for 1 correct answer
	Additional Guidance		
	Ignore any non-contradictory or irrelevant statements		
	Reference to people not remembering/exaggerating their results		B0

Q	Answer	Marks	Comments
15(c)(i)	The additional data for even years will have altered the overall proportion or the proportions (which were averaged) will have been rounded (so cumulative rounding errors will have occurred) or different years will have different number of students taking A level maths (so the average of each year's proportion should have been weighted according to numbers)	B1	oe
	Additional Guidance		
	Ignore any non-contradictory or irrelevant statements		
	Estimated mean		B0
	Takes the whole population into account X involves all the years (implies Y doesn't) Data not for all years Data for all years		B1 B1 B1 B0
	Referencing A* not existing until 2010 scores B0 without another correct comment		

Q	Answer	Marks	Comments
15(c)(ii)	The proportions (which were averaged) will have been rounded (so cumulative rounding errors will have occurred) or different years will have different number of students taking A level maths (so the average of each year's proportion should have been weighted according to numbers)	B1	oe
	Additional Guidance		
	Ignore any non-contradictory or irrelevant statements		
	Reason given must be different to 15(c)(i) if B1 awarded in 15(c)(i)		
	Estimated mean		B0
	Referencing A* not existing until 2010 scores B0 without another correct comment, eg X has data for all years however A* did not exist before 2010		B1

Q	Answer	Marks	Comments
15(d)(i)	An appropriate stem drawn for their diagram(s) for the given data	B1	stem should cover tens values of 3, 4, 5 and 6 for a back-to-back diagram oe eg decimal values 0.3, 0.4, 0.5 and 0.6
	Shoab's data shown correctly on a stem and leaf diagram (on either side if back-to-back)	B1	Shoab's data may be seen on one side of an unlabelled diagram
	Correct labels and an appropriate key covering both data sets	B1	may see separate keys for each data set which must be correctly orientated for the data set
	Evidence that values for National data are rounded to 2 sf in order to plot	M1	eg may be seen on diagram, eg three correct values plotted in correct stem row(s) with correct single digit leaf
	National data shown fully correctly on a back-to-back stem and leaf diagram	A1	

Additional guidance for this question is on the next page

	Additional Guidance	
15(d)(i)	National / School 7 | **3** | 5 5 4 3 2 1 | **4** | 4 6 7 | **5** | 0 1 6 | **6** | 3 Key : 1 | **4** | 4 represents 41(%) (nationally) and 44(%) (school) or 1 | **3** represents 31(%) **4** | 4 represents 44(%)	5 marks
	Allow consistent use of proportions	
	Data does not need to ordered	
	If data for all years used, maximum, of B1B0B1M1A0	
	If two separate stem and leaf diagrams, maximum B1B1B0M1A0	
	If one separate stem and leaf diagram, then correct key must be seen for that diagram otherwise award maximum of 1 mark Award maximum B1B1B0M0A0 for Shoab Award maximum B1B0B0M1A0 for National	

Q	Answer	Marks	Comments
15(d)(ii)	Correct value for their median for school or correct value for their median for national	B1ft	50 for school 43 for national (if stem and leaf correct) second value may be implied by reference to difference
	Correct comparative contextual statement for their medians with at least one correct	B1ft	eg the school had a higher proportion of A and A* grades (on average) or better results
	Correct value for their IQR for school	B1ft	(56 – 46 =) 10 (if stem and leaf correct)
	Correct value for their IQR for national	B1ft	(45 – 41 =) 4 (if stem and leaf correct)
	Correct comparative contextual statement for their IQRs with at least one correct	B1ft	eg the school had more varied proportions of A and A* grades or more varied results
	Statement correctly comparing the trends	B1	eg both school and national results have generally increased and then decreased a little
	Additional Guidance		
	Condone reference to results rather than proportions/grades		
	For 2nd B1 On average the school did better (than the national average) Median is higher for the school		 B1 B0
	Values may be calculated from a list of data		
	Ignore any comparisons of means or ranges or modes		
	Values for median and IQR must be correctly evaluated for their ordered data		

Q	Answer	Marks	Comments
15(e)	Different entry policies (onto the course or for the exam) at the school/compared to nationally or references that only A/A* grades have been considered, conclusions could have been different if other grades considered (eg looking at C and above) or sampling / some poor performing years could have been missed	B1	oe
	Additional Guidance		
	Ignore any non-contradictory or irrelevant statements		
	Referencing A* not existing until 2010 scores B0 without other correct comment		
	Populations may change / be different		B0
	Unreliable data source for national data		B0