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Examiners' Report March 2010

GCSE

GCSE Mathematics (2381)

Higher Paper (5381H/06)

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March 2010

1. PRINCIPAL EXAMINER'S REPORT – HIGHER PAPER 6

1.1 GENERAL COMMENTS

1.1.1 A significant weakness running through some questions relates to poor numerical skills, which indicated the absence of a calculator, particularly on section A.

1.1.2 There were several occasions in this paper where candidates had simply misread the question. Candidates are advised to ensure they understand what the question is asking them to do.

1.1.3 Candidates need to have an awareness of the context of the question. An answer needs to make sense within this context. An answer which does not make sense should be changed.

1.2 Report on Individual Questions (Section A)

1.2.1 Question 1

This question was usually well answered. However, in both parts there were too many instances where candidates had picked the wrong probability values from the table to add. There were also some instances of poor arithmetic where the two decimals had been incorrectly added in (a), or multiplied in (b), even though they should have had a calculator with them.

1.2.2 Question 2.

Many candidates had a general idea as to the process of calculation and it was encouraging to see many correct answers. It was rare to see any confusion, sometimes resulting in attempts at cumulative frequency, finding the mean of the frequency values, or indeed the class interval boundaries. Choice of midpoint values varied from the actual midpoints to the top ends, or an inconsistent mixture of numbers. Even though candidates were told there were 50 customers, the numbers used for the division also varied, from incorrect summation of the frequencies, to the common use of 5 as a divisor. Even if the final answer was not reached, many presented lots of working which usually attracted some intermediary marks.

1.2.3 Question 3.

This question was better answered than is normally the case. The main error was in picking the correct three values to find the mean of. Comments in part (b) usually attracted the mark. Few candidates had little difficulty in describing the movement of the figures. In part (c) many candidates selected the correct figures of 80, 60, 258 but the main error was in understanding the correct operations to process these figures. It was discouraging to find some answers given that were

more than the number of students. Candidates need to ensure their answers make sense within the context of the question.

1.2.4 Question 4.

It was rare to see any working out associated with this question, though the mark scheme does provide methods marks for those calculating frequency density. Again, there were some good responses, but it was usually a case of 2 marks, or none at all, without any evidence of how the heights had been arrived at.

1.3 Report on Individual Questions (Section B)

1.3.1 Question 1.

Most candidates had a good understanding of what was needed, though execution was not always precise. Most attempted to order the numbers, but there were some who did not. There was some confusion over the number to choose for the stem, and some carelessness shown when even better candidates left numbers out. All candidates should be advised to do a quick number count once their answer is complete, to ensure they have the correct number of items in the diagram. Also, some candidates gave a key that was not in the correct format, losing them a mark.

1.3.2 Question 2.

This was usually a well answered question. Many noticed there was no reference to a time period in the given question, and introduced this into their own question. Most also included response boxes relating to monetary values, though on too many occasions these were imprecise and/or overlapping. Candidates need to realise that use of inequality signs to define boundaries for response boxes is not appropriate for a questionnaire. Part (b) was less well answered. Some students failed to read the question properly, and continued the theme of the questionnaire from part (a). Others failed to give an adequate reason for it being a poor sample, giving alternative methods or approaches which did not necessarily relate to the scenario presented here.

1.3.3 Question 3.

Drawing box plots should be familiar to students, so it was disappointing to see diagrams which were no more than a series of plotted points, a single straight line, or a series of boxes. It was not uncommon to find the median missing from the box, or the box drawn as far out as the ends of the whiskers. There were also many cases of lines being drawn inaccurately on the grid. Basically this was a straight forward question in which disorganised and inaccurate work cost students points unnecessarily.

1.3.4 Question 4.

This was a well answered question. Most obtained a reading that was acceptable in part (a). In part (b) many answered correctly, but too many either came to the wrong deduction, even though they had correct readings, or gave a reason without quoting any evidence from the second graph.

1.3.5 Question 5.

Many candidates drew a tree diagram to assist them in completing this question, and found greater success at its solution as a result. In part (a) many candidates realised that $\frac{4}{5}$ was involved, and a good number realised that this fraction was involved three times, but then added the three fractions or multiplied by 3. Even those that realised that the answer was $\frac{4}{5}\times\frac{4}{5}\times\frac{4}{5}$ often made errors, sometimes in the numerator, sometimes in the denominator, sometimes in both. Poor arithmetic work such as $5\times5\times5$=100, 50 or even 15 was regularly seen. In part (b) many found all seven possible combinations to work with, and a minority undertook a subtraction from 1. There were many examples of sound working, though many struggled to predict the number of combinations they needed to work with, 7 not seen very often. Again work was punctuated by poor arithmetic, and frequent additional of fractions where they should have been multiplied.

2 STATISTICS

2.1. MARK RANGES AND AWARD OF GRADE

Unit/Component	Maximum Mark (Raw)	Mean Mark	Standard Deviation	% Contribution to Award
5381F/05	30	18.6	5.3	20
5381H/06	30	17.3	6.7	20
5382F/07	25	14.6	4.2	15
5382H/08	25	13.9	5.0	15
5383F/09	25	13.1	5.4	15
5383H/10	25	13.9	5.4	15

2.2. GRADE BOUNDARIES

The table below gives the lowest raw marks for the award of the stated uniform marks (UMS).

Unit 1 – 5381

	A*	A	B	C	D	E	F	G
UMS (max: 55)				**48**	**40**	**32**	**24**	**16**
Paper 5381F				**24**	20	16	**13**	10
UMS (max: 80)	**72**	**64**	**56**	**48**	**40**	**36**		
Paper 5381H	28	**23**	16	**10**	**7**	5		

Unit 2 Stage 1 – 5382

	A*	A	B	C	D	E	F	G
UMS (max: 41)				**36**	**30**	**24**	**18**	**12**
Paper 5382F				**19**	16	13	10	7
UMS (max: 60)	**54**	**48**	**42**	**36**	**30**	**27**		
Paper 5382H	23	**19**	14	**10**	**8**	7		

Unit 2 Stage 2 – 5383

	A*	A	B	C	D	E	F	G
UMS (max: 41)				**36**	**30**	**24**	**18**	**12**
Paper 5383F				**20**	15	11	**7**	3
UMS (max: 60)	**54**	**48**	**42**	**36**	**30**	**27**		
Paper 5383H	23	**19**	14	**10**	**7**	5		

2.3. UMS BOUNDARIES

Maximum Uniform mark	A*	A	B	C	D	E	F	G
400	360	320	280	240	200	160	120	80

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