



General Certificate of Education

Mathematics 6360

MD01 Decision 1

Report on the Examination

2008 examination - January series

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Set and published by the Assessment and Qualifications Alliance.

General

The spread of candidates' ability appeared different this series compared with June 2007. There were very few marks in the 70s and not as many as usual in the 60s. This was due to some topics, such as graph work, algorithm tracing and Dijkstra's algorithm, not being as well understood. However, there were few low marks and very few below 30.

Many scripts were slovenly presented and, crucially, candidates often omitted important details or did not make their working clear. This lax approach can cost a significant number of marks in this unit.

Question 1

There were very few errors in part (a) and very few candidates failed to score the marks in part (b), as most obtained solutions in a satisfactory manner. However, such solutions and their derivation must be presented clearly and unambiguously. Candidates must ensure that they distinguish clearly between paths and a final solution.

Question 2

This question was not well done. In part (a), a large number of candidates could not draw the graph of $y = \frac{1}{2}x$ correctly. Many drew the graph of $y = 2x$ and even more a graph of gradient $-\frac{1}{2}$ that didn't pass through the origin. Even those with the 'correct' graph lost marks through drawing it inaccurately.

In part (b), many candidates assumed that the point (10, 20) must be involved, often for both parts, and some appeared to make no use of objective lines whatsoever. A significant minority, including many able candidates, were content to give only coordinates and failed to calculate the corresponding values of F .

Question 3

This question was well answered by the majority of candidates, often yielding full marks, even to otherwise weak candidates. Presentation was improved compared to equivalent questions from previous series, and only the weakest candidates lost marks through poorly presented work in part (a).

Question 4

The majority of candidates were able to do part (a) correctly and to present their work sufficiently clearly, but there was a significant number of candidates who appeared either to have not studied Dijkstra's algorithm or to have not understood it correctly, as many had alternative values at both E and G .

Part (b) was pleasingly well done, even by those candidates who had not managed part (a) correctly.

Question 5

Part (a) was usually answered correctly by candidates.

Part (b) was more difficult. Many candidates seemed to feel the word 'interpretation' necessitated a verbal answer and a few then completely missed the point. Use of 'between' lost the mark, as it was deemed too vague.

Part (c) did highlight the better candidates. There were many '35's for *CD* in part (c)(i) and after that there was much confusion between diagram and table. This was again not helped by generally poor presentation. Many candidates appeared to leave their question numbering for parts (c)(ii) and (c)(iii) deliberately vague.

Question 6

This question caused problems for many candidates. Apart from the failure to present answers in an acceptable manner, it was the placement of the variable *N* that caused the problem, especially in part (a)(ii). It is recommended that candidates have sight of the mark scheme to see how to set out their solutions in a clear and logical manner.

Many answers to part (b) did not refer to any line in the algorithm at all. Of those that did, Line 50 was by far the most popular answer.

Question 7

This was the first time a question had been set on all four different sorting algorithms. Many candidates scored full marks. The common error in part (a) was to confuse quick sort and bubble sort.

Some candidates did not know what 'the first pass' meant in part (b).

Question 8

This question did differentiate to reveal the more mathematically able. The weakest candidates were unable to distinguish between *A*, *B* and *C*, and *x*, *y*, and *z*; other candidates confused 'rows' and 'columns'.

There was, however, a number of candidates who were able to obtain the first three inequalities and many of these obtained the fourth and were able to simplify it. However, the final inequality proved to be beyond the reach of many; its simplified answer was obtained by just a few of the very best candidates.

Mark Ranges and Award of Grades

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