



**General Certificate of Education**

**Statistics 6380**

**SS02          Statistics 2**

**Report on the Examination**

*2010 examination – January series*

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## General

As usual, candidates were more comfortable with calculation than they were with interpretation. Marks were often lost and/or time wasted by a failure to answer the question asked. The most unfortunate example of this was question 1(a) where a few candidates, instead of answering ' $n = 4$ ', embarked on evaluating eleven values of the moving average.

Some candidates placed too much reliance on their calculators. If no working is shown, the answer has to be correct to score **any** marks. Hence it is wise to check, perhaps by entering the data again in a different order, before relying completely on the answer shown by the calculator.

## Question 1

Although most candidates were able to make a good attempt at forecasting future expenditure, many were unable to deal with the earlier parts of the question. Surprisingly, only about half the candidates were able to recognise that  $n = 4$  in part (a). A substantial minority did not recognise the term 'seasonal variation' and so did not answer part (c) but in part (d), evaluated and used the seasonal variation correctly.

The majority recognised that making a forecast to more than three significant figures was not 'an appropriate level of accuracy'.

## Question 2

The subject of crime set a few candidates on a discourse about increasing crime and a decay in moral standards. What was expected was a critical analysis of the statistics presented. Despite this, most candidates were able to make a sensible attempt at this question. The majority view was that the emphasis in the media on reporting violent crime was the main reason for public perception being out of line with the facts.

## Question 3

Candidates were well prepared for part (a) and generally scored highly. Unfortunately, in part (b), many failed to set up the hypotheses correctly. Possibly they thought that the hypotheses in part (b) were sure to be different to those in part (a). There were some excellent answers to part (c) but those who, usually due to incorrect hypotheses, came to incorrect conclusions in part (b) then had difficulty in giving convincing answers to part (c).

## Question 4

Candidates were able to plot the data. Some joined the points. There was no penalty for doing this but it is unhelpful with annual data, particularly if a trend line is to be added. Joining the points is useful for highlighting seasonal variation but has no real purpose for this data. Most correctly calculated the regression equation but fewer drew the line accurately. Often there was no evidence of a method of drawing the line.

A fairly common error in part (d) was to say because the value from the regression equation was similar to the value shown by the trend line (also found from the regression equation), the forecast must be accurate.

## Question 5

Most candidates scored high marks on this question with only part (e)(ii) causing major problems. Here many candidates did not realise that they needed to compare standard deviations (or variances). Some of those who did realise this found that going back to parts (a) and (b) to obtain the necessary information was a step too far.

## **Question 6**

The standard of answers to questions involving sampling has shown a great improvement over the last few series. A few years ago, it would have been very rare for any candidate to score full marks on this question. This time, although most candidates still found this question challenging, full marks was no longer a rare event.

## **Mark Ranges and Award of Grades**

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