



**General Certificate of Education (A-level)
January 2011**

Statistics

SS02

(Specification 6380)

Statistics 2

Report on the Examination

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General

Candidates were, in the main, well prepared for this paper, particularly the hypothesis test and the time-series question. There was some evidence of increased use of graphics calculators, usually with beneficial results. However, when used without understanding, they sometimes led to catastrophe.

Question 1

Parts (a) and (b)(i) were well answered, with nearly all candidates realising that in part (b)(i) it was insufficient just to write down the answer from a calculator. Part (b)(ii) caused more problems, with many candidates just comparing the means; others believed the key was to compare the standard deviations.

Question 2

There were no problems with part (a). In part (b), nearly all candidates realised that a Poisson distribution with mean 13 had to be used, but it was not uncommon for candidates to evaluate $P(15 \text{ or fewer}) - P(10 \text{ or fewer})$.

Question 3

This question proved a good source of marks for most candidates. In part (g), some candidates felt that the problem with forecasting quarter 1 of 2010 was that it involved extrapolation, apparently not realising that forecasting **is** extrapolation. Others thought that the problem was that quarter 1 of 2010 was off the graph and that all would be well if the graph paper was wider. The best answers pointed out that the further ahead the forecast the more the uncertainty and then gave a possible reason why current trends may not continue, eg recession.

Question 4

Candidates were well prepared for this question and answered it well. It was particularly pleasing to see a substantial minority demonstrating their understanding of hypothesis testing by their answers to part (c), even though this was a little different from anything which has appeared in past papers.

Question 5

Some candidates gave a good description of selecting a stratified sample in part (a), but others merely described a random sample of all employees.

In part (b), few candidates described the numbering of the employees. If the employees were numbered in random order, the sample would not be systematic. The numbering needs to be in some way systematic — in this case the obvious system would be to number the medical employees 000 to 389, the ancillary employees 390 to 609 etc, but other ways of numbering would be equally valid.

Question 6

Parts (a) and (b) were generally well answered, although some candidates ignored the words “Using this information” in part (b). A surprising number were unable to correctly evaluate the formula for outliers given in part (c)(i). Explaining why the median lay between 18.0 and 19.0 in part (d)(i) defeated most candidates.

Mark Ranges and Award of Grades

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