



General Certificate of Education

Statistics 6380

SS06 Statistics 6

Report on the Examination

2010 examination – June series

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General

Most candidates were well-prepared and had a good working knowledge of all the topics. However, their ability to express themselves when interpreting results was not always as strong. Many candidates stated hypotheses precisely throughout but a significant number worded hypotheses carelessly, not mentioning population parameters.

Question 1

Several candidates did not seem able to comment on experimental design problems and many were unclear about the randomised block design in part (a). In part (d), several candidates omitted to mention that the technique was **2-factor** analysis of variance.

Question 2

Many perfect solutions were seen. There were some problems in part (c), with a significant number of candidates failing to evaluate the mean and range from the sample data, and many others failing to identify the 'action' that should be taken in each case: 'stop production' in part (c)(i) and 'take a further sample immediately' in part (c)(ii).

Question 3

Most candidates were very confident with the paired t test and part (a) was very well answered. Efforts were made to state conclusions in context as requested but they were frequently muddled. In part (b), a comment regarding the normal distribution of the differences was required. There were many intelligent, correct solutions to parts (c) and (e), but several candidates assumed that the test that detected a significant difference was the appropriate test to use and they did not consider the power of the tests or the distributional assumptions required for the t test.

Question 4

This question was either answered very well or not attempted at all. Candidates seem uneasy about attribute sampling schemes. In part (b), candidates often lost marks when no method was shown.

Question 5

There were many errors on this question with candidates evaluating incorrect binomial probabilities in part (a). Surprisingly, most candidates made a fair effort at part (c) and a significant number found the correct probability of acceptance for the double sampling scheme. It should be noted that the operating characteristic should be plotted to pass through the point (0, 1). Candidates were confident to comment in part (e) but did not gain marks if they repeated in part (e)(ii) reasons also given in part (e)(i).

Question 6

Part (b) was generally completed accurately with many candidates gaining full marks. This was not the case in part (a) for the 1-factor analysis of variance. The degrees of freedom were frequently incorrect. In part (c), there was a lack of understanding of blocking factors and how the low F ratios compared to a critical value of 19 indicated that those factors were not effective.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the [Results statistics](#) page of the AQA Website.