General Certificate of Education

Statistics 6380

SS03 Statistics 3

Report on the Examination

2010 examination – June series

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General

Most candidates seemed well prepared for all topics and the Kruskal-Wallis test was carried out very well this series. Candidates generally quoted final answers to three significant figures and the new layout of the answer booklet, with questions printed alongside the space for the answer, meant that required ranks and/or method used were usually seen and therefore candidates did not lose marks by not demonstrating the method used. Hypotheses were stated accurately by most candidates but interpretation of results caused many problems.

Question 1

Some candidates seemed unaware that they might be asked to perform a sign test on paired data in part (a). Conclusions were often nonsense. In part (b)(i), many candidates found the product moment correlation instead of the required Spearman's rank correlation coefficient. The distinction between these two coefficients is important for candidates to grasp. In part (b)(iii), some candidates made a good attempt at interpretation but many wrote irrelevant comments. In part (b)(iv), candidates often muddled Type I and Type II errors.

Question 2

Candidates seemed comfortable with this topic and many fully correct solutions were seen in part (a). Some candidates did not give the expected values used for comparison in the χ^2 test and therefore lost most of the marks in part (a) if their test statistic was incorrect. Any necessary working should always be given even if the procedure is completed on a graphics calculator. Some candidates persisted in quoting expected values as integers, which is not appropriate. The hypotheses were usually correctly stated. In part (b), few candidates compared expected and observed data to explain identified sources of association. Part (c) was completed very well by the majority of candidates.

Question 3

Some excellent solutions were seen and the majority of candidates managed to evaluate H correctly. The main mistakes occurred when candidates failed to realise that $\nu = 2$, frequently choosing $\nu = 17$ instead. The interpretation in context was poorly done.

Question 4

Many candidates left out this question and should realise that the structure of a hypothesis test may form the basis of a question as well as an execution of that test. Those who attempted to carry out a Mann Whitney *U* test tended to score highly in part (b)(i), and most of those were able to interpret their conclusion accurately in part (b)(ii).

Question 5

The majority of candidates made a good effort at part (a) and evaluated differences correctly. Part (b) was very well answered by many candidates who provided clear explanations and the correct z test in part (b)(iii).

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the **Results statistics** page of the AQA Website.