A-LEVEL
STATISTICS

SS03

Report on the Examination

6380

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General

Candidates made good use of calculators when appropriate and many also used them efficiently to obtain probabilities from distributions. Most candidates seemed well prepared and stated hypotheses correctly and interpreted conclusions in the context of the question. Some candidates failed to start Q5 or Q6 and centres are reminded that some secure background understanding of the appropriate test to use in different circumstances is an essential part of this course.

Question 1

Most candidates scored full marks on part (a), using a calculator as is suggested, with a few giving their answer to fewer than three significant figures and some incorrectly calculating Spearman's coefficient of rank correlation. (b) Hypotheses were generally stated appropriately but some candidates used the two tail critical value. The wording of conclusions was generally in context and correct. (c) Many candidates demonstrated good general knowledge and careful reading of the scenario given, to answer this part correctly

Question 2

(a) Most got this part correct but some candidates managed to get the correct total for those answering 'yes' but then failed to complete the table correctly. (b) Many candidates stated hypotheses that were nonsense. It is advised that candidates repeat the exact wording given in the question or, alternatively, state simply 'No Association' and 'Association' for null and alternative hypotheses. There were many incorrect attempts at applying Yates correction. The majority of candidates found the correct critical value. Marks were lost in the conclusion where a common mistake was to say that the *question* was independent of the year of study rather than the correct conclusion that the *answer* is independent of the year of study.

Question 3

(a) Candidates often lacked the simple approach of writing out what would happen in this situation and a few then confused T with U. (b) The majority of candidates stated appropriate hypotheses for this test. The test statistic and critical value were usually correct but marks were lost by candidates who didn't appreciate that this is a lower tail test, and drew the wrong conclusion for that reason, and by others who didn't express their conclusion in the context of the question.

Question 4

(a) Most candidates ranked the columns consistently with a few ranking pairs in the incorrect orders and a minority ranking all three columns as if they were one group. (b) There were many correct solutions to part (b) but some candidates compared the test statistic and critical values in the wrong tails. (c) Some candidates referred to the mean rather than median in their hypotheses and conclusion. Also, some were confused by the high probability of the test statistic, or a more extreme value, occurring but most were able to phrase their conclusions correctly in context. Some failed to quote the relevant probability or made a comparison with 0.10.

Question 5

(a) Most candidates were able to correctly complete the ranking process although some started their ranking at 8 rather than 9 because of a lack of understanding of tied ranks. (b) Many candidates stated the hypotheses incorrectly, for example, 'samples are identical' for Ho. The calculation of the test statistic was successfully done by the majority, with varying levels of accuracy. A significant number of candidates failed to draw the correct conclusion in context, possibly because they had not read carefully the information given regarding the ranking. The majority of candidates correctly identified the costume worn by the children displaying the most exuberance but few candidates supported their conclusion with correct values of an appropriate average.

Question 6

(a) This question was done well but some candidates failed to find the differences between the observations and 6.5 and many summed the differences instead of the ranks or ranked the data. Conclusions were often correct but there was sometimes a lack of detail in these or confusion over the two populations. (b) Very few candidates appreciated that the order in which the different doses were taken may affect the outcome of the trials in part (i) and there was a lack of care over calculating the difference in values required to identify the type of change. There was also a large number who mistakenly obtained the critical value for a two tailed test. The final conclusion was often incorrect or not in context.

Mark Ranges and Award of Grades

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

Converting Marks into UMS marks

Convert raw marks into Uniform Mark Scale (UMS) marks by using the link below.

UMS conversion calculator