General Certificate of Education

Statistics 6380

SS02   Statistics 2

Report on the Examination

2010 examination – June series

General

Candidates were generally well-prepared for this paper, particularly for time series and hypothesis testing. As usual, premature approximation in calculations led to some inaccurate results, particularly in question 4 where rounding of the sample mean led to substantial errors in the test statistic.

Question 1

Part (a) was well done apart from a very few candidates who squared the probability instead of the fare in part (a)(ii), and others who confused standard deviation with variance in part (a)(iii). Many candidates were unprepared for part (b) which defeated a surprisingly large number. Many candidates thought the mean fare would be unchanged in part (c) but there were also some excellent explanations as to why it would be smaller.

Question 2

Parts (a) and (b) were well answered. Most candidates made a good attempt at part (c)(i) but often there was little effort to demonstrate the method used. Parts (c)(ii) and (d) proved more demanding than expected and only the best candidates provided appropriate calculations and convincing arguments.

Question 3

A good proportion of candidates were well prepared for this question and scored full marks without difficulty.

Question 4

Candidates were well prepared for this question and generally scored well. Candidates from a few centres used p-values which is, of course, perfectly acceptable, but it often led to problems such as comparing p-values with z-values. Some first calculated the mean and then entered insufficient significant figures in their graphics calculator. This produced a p-value outside the acceptable range and, in the absence of supporting work, led to no marks.

Question 5

Parts (a)(i) and (a)(ii) were answered well apart from those who omitted the units. Part (a)(iii) was expected to provide a challenge but in fact was nearly always answered correctly. In part (b), candidates often missed the obvious point that gas reserves had reduced from 1995 to 2006, and often made nonsensical statements such as 'proven reserves are about the same' when what they presumably meant was that the **proportion** of reserves which are proven is about the same.

Question 6

This question on the Poisson distribution was surprisingly poorly answered. In recent years, questions such as parts (a), (b)(i) and (ii) had led to a good proportion of candidates scoring full marks with only the explanations such as in parts (b)(iii) and (c) presenting a substantial challenge. This year, candidates struggled with all parts of this type of question.

Question 7

The improvement shown in recent years in answering questions on sampling has been maintained as most candidates scored some marks on this question although, as would be expected, full marks were rare. A common error in part (b)(i)(B) was to say that because the strata were not all of the same size, the shops were not equally likely to be chosen. In part (b)(ii)(C), 'it is not random because it is systematic' was not accepted as a sufficient explanation. Pointing out that not all subsets were possible or more simply that two shops numbered 000 and 001 could not both be included in the same sample gained the mark.

Mark Ranges and Award of Grades

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