Examiners' Report/
Principal Examiner Feedback

Summer 2013

GCE Statistics S1 (6683)
Paper 01R

PEARSON

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications come from Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk. Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

Statistics S1 (6683R)

Introduction

The paper was accessible to all candidates and they could make some progress on all of the questions. Some parts such as 4(c), 5(d)(e) and 7(f)(g) were particularly discriminating and gave an opportunity for the stronger candidates to shine. The usual problems of premature rounding arose again and candidates should be aiming to keep sufficient figures from preliminary working in order to present their final answers to 3 significant figures or better.

Report on Individual Questions

Question 1

Part (a) was answered very well although some only rounded their value of b to 3 decimal places rather than 3 significant figures as required. Most knew how to start part (b) and made a correct substitution but errors often occurred when simplifying to the required form. The final part was answered well with most substituting $g = 100$ into their answer for part (b) however earlier errors meant that the correct answer was less frequently seen.

Question 2

Candidates for S1 often find the Cumulative Distribution Function a challenging topic but there were many fully correct responses seen to part (a) here with the answers simply summarized in a table. A few weaker candidates attempted a calculation for E(X) by finding $\sum x\mathrm{F}(x)$. In part (b) a number of candidates interpolated and gave an answer of 0.6 failing to appreciate the nature of a discrete random variable.

Question 3

In part (a) some candidates could not calculate the widths of the intervals and therefore lost all the marks. In part (b) the technique of linear interpolation is understood well but a number of candidates could not find the correct end-points. Candidates should look carefully at tables of grouped data and determine carefully the end points and widths of the intervals.

Parts (c) and (d) were answered well without quite so many false attempts at standard deviation as is often the case on S1. Part (e) was not answered so well as many candidates didn't appreciate the need to interpolate. Those who did usually arrived at the correct answer quite efficiently.

Question 4

The normal distribution was handled well by most candidates on this paper. Part (a) caused few problems although some candidates failed to subtract their tables' value from 1 and most made good progress in part (b) too although some failed to use the table of percentage points of the normal distribution and had a z value of 1.04 or 1.03 rather than 1.0364. Part (c) was more challenging requiring the identification of a conditional probability and then the correct evaluation of the numerator using the symmetry of the distribution but there were a good number of correct responses seen.

Question 5

Parts (a) and (b) were answered very well with only minor slips causing a loss of marks in a few cases. In part (c) most candidates realized there was positive correlation but some went on to state that this suggested support for the researcher's belief and only the more astute explaining that the researcher should have been expecting a negative correlation and these data therefore did not offer support. Parts (d) and (e) were challenging. In part (d) many stated that S_{xx} would remain the same but they were unable to provide an adequate reason. In part (e) most thought that r would stay the same giving the text book reason that "it is not affected by coding" but a few did realize that S_{xy} would stay the same and so the increase in S_{yy} meant that r would in fact decrease.

Question 6

In part (a) most used the independence property correctly to show that $P(A) = 0.25$ but some mistakenly assumed $p = P(A)$. The conditional probability formula was usually used correctly in part (b) to find $P(C)$ and often the value of q as well and many were also able to find the value of r too although occasionally candidates seemed to miss this demand. There were some good responses to part (c) despite the rather unusual nature of the conditional probability. Many candidates were able to write down a correct ratio of probabilities and there weren't too many cases of candidates attempting to evaluate the numerator as 0.69×0.4.

Question 7

Parts (a), (b), (c) and (d) were answered very well and most candidates scored well here. In part (e) most knew they had to solve the inequality and arrived at $S > 1.5$ but some misinterpreted this and gave $P(S > 1)$ rather than $P(S > 2)$. The final 2 parts caused problems for many candidates. A popular approach was to calculate a sample space showing all 25 products of S_1 and S_2 but they often thought that these 25 cases were all equally likely. Unfortunately this false assumption would lead to the correct answer in part (f), but not of course the available marks, and many candidates never properly considered the correct distribution of X. Some candidates did list the 15 required cases and were able to obtain the correct probability but such cases were rare.

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:
http://www.edexcel.com/iwant_to/Pages/grade-boundaries.aspx

Ofqual

Llywodraeth Cynulliad Cymru
Welsh Assembly Government

Rewarding Learning