Examiners' Report
Principal Examiner Feedback

Summer 2017

Pearson Edexcel Level 1 Award
In Statistical Methods (AST10)

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Introduction

There was no evidence to suggest that students had difficulty completing the paper in the given time.

Students were able to complete their answers in the spaces provided and many showed intermediate steps in their calculations.

Some students did not use a ruler to draw the bars in Q1(b) and Q9(d).

Some students did not use a ruler to draw the lines for the sectors in the pie chart in Q21.

Report on individual questions

Question 1

Part (a) was answered well and it was encouraging to see students reading the correct answer off the bar chart.

In part (b) a majority of the students drew the bar chart clearly and this part of the question was answered well.

Part (c) was answered well and it was encouraging to see students reading the correct answer off the bar chart.

Many students added up the frequencies and wrote down the correct answer in part (d).

Question 2

Part (a) was generally answered well. Many students were able to calculate the key by dividing 16 by 4 to obtain the correct answer.

Part (b) was answered very well as many students used their key to obtain the correct answers. Some students who calculated the incorrect value in part (a) were able to gain marks by following through.

Part (c) was well answered and it was very encouraging to see students representing the number of songs clearly on the pictogram.

Question 3

Part (a) and part (b) were answered well. Most students were able to circle or underline the correct answer.

Part (c) was well answered as many students were able to mark a cross at the centre of the probability scale.

Part (d) was not answered well. Most students were not able to mark the probability scale correctly to show the required probability. A significant number of students incorrectly marked the probability scale at 0 or 0.5

Question 4

This question was answered very well and nearly all the students gained full marks. It was very encouraging to see evidence that students had read and interpreted the table correctly.

Question 5

This was not done well. Many students were unable to design a suitable and efficient data collection sheet to record the results. A common unacceptable answer was a table with columns headed eg "Friend". It was encouraging to see some students using the word "Sport".

Question 6

This question was answered very well and nearly all the students gained full marks. It was very encouraging to see evidence that students had read the list carefully and diligently to gain the correct answers.

Question 7

This question was done well. Most students were able to write down all the possible combinations from the "steak" and the "sauce". A common mistake was to write down the all the correct combinations and then repeat them eg (F, P) and (P, F).

Question 8

This was answered well. Many students showed the correct method and gained the answer. Some students worked out 0.59 and then stated the answer as $^{0.59}/_{100}$ or wrote down 0.59%

Question 9

Part (a), part (b) and part (c) were answered well. Many students were able to read and interpret the required information from the dual bar chart to answer each part of the question correctly.

Many students were able to draw the bars correctly in part (d). Some students did not shade the bars so losing a mark. Some students were careless in not drawing the bars to the required height thus losing both marks.

Question 10

Part (a) was not answered well. Many students did not write down the correct probability. Common incorrect answers were "likely" and "7:20".

Part (b) was not answered well. Many students did not write down the correct probability. Common incorrect answers were "likely" and "29:60".

For parts (a) and (b), students write probabilities as fractions, decimals or percentages.

Part (c) was answered well. Many students wrote down the correct answer followed by the correct reason. Some students gained 1 mark by writing Sunday followed by an incorrect reason.

Question 11

Part (a) was answered quite well. Some students did write down the correct answer as a fraction. Some students wrote their answers in the form of a ratio or wrote down "likely" both of which are incorrect.

Many students, in part (b), failed to recall the fact that the total probability is 1. Many students did not apply the correct method ie $1 - {}^{8}/_{15}$. Alternatively they could have simply added 3 and 4 and then use this information to write down the correct probability.

Question 12

Part (a) was not answered well as many students did not know how to find the median. They did not order the data as required and simply wrote down the mode.

Part (b) was answered well as many students could add up the values to obtain 45 and then divide by 9 to obtain the correct answer. However, a minority of students confused the mean with the mode or the median.

In part (c) many students could not recall the formula for the range and, therefore, this part was not answered well. A common incorrect answer was 6 – 2 ie the difference between the first and the last number in the list.

Part (d) was not answered well. Many students did not make a comparison and simply wrote "In India it was 5 and in South Africa it was 6.3". This is not a comparison but a statement. Some students wrote "the mean has increased", without referring to the country.

Question 13

Part (a) was answered well. Many students knew how to find the modal length from the stem and leaf diagram. Some students who did have some idea wrote down 6 as their answer omitting the stem (6) which was a common incorrect answer.

For part (b), many students could not recall the formula for range so could not answer the question correctly.

Part (c) was not answered well as many students could not calculate the required probability. A common incorrect answer was ${}^{3}/_{22}$

Question 14

Part (a) was generally done well. Most students were able to complete the frequency table for the given data. A common error was to miss out one or two of the results. Students should check their work more carefully, eg by comparing the total of their frequencies with the total number of results.

Part (b) was done quite well. Many students were able to write down the mode from the frequency table. A common incorrect answer here was 7, ie the frequency of the mode.

Part (c) was not done well. Few students knew how to work out the total number of sweets from the results ie $(1 \times 6) + (2 \times 5) + (3 \times 6) + (4 \times 7) + (5 \times 6)$. A very common incorrect answer here was 30, which was calculated from $6 + 5 + 6 + 7 + 6$

Question 15

Part (a) was answered well. Students could easily extract the number of children who disliked homework from the two-way table.

Part (b) was generally answered well. Many students completed the two-way table. Most students could easily find 14 or 6, however, some students then found it difficult to find the rest of the answers.

Part (c) was poorly answered. Many students did not how to approach the question. A common incorrect answer was to write $^{32}/_{47}$

Question 16

It was encouraging to see this question was answered fairly well. Many students could identify at least one reason why the graph was could be misleading or was wrong.

Question 17

Q17(i) was answered quite well. Some students wrote their answer as $^{0.61}/_{1}$. Some students wrote their answers in the form of a ratio, which of course is incorrect. Another incorrect answer given was "likely".

Many students in Q17(ii) failed to recall the fact that the total of the probabilities is 1. Many students did not apply the correct method.

Question 18

Many students answered this question well and many students obtained 1 mark easily for writing down one thing wrong with the question. A common answer was to write "No box for never" and "No box for other". This only gained 1 mark.

Question 19

Part (a) was answered poorly. Most students did not know how to describe a trend. A common incorrect answer was "it goes up then down then up".

In part (b) many students were not able to read the time-series graph accurately to find the number of vehicles rented quarter 3 of 2013, 2014 and 2015. A significant number of students did not show the values from the graph for the 3 quarters – potentially losing both the method mark and the accuracy mark for writing down an incorrect answer without working. A common incorrect answer here was 350

In part (c) most students were able to use the information given in the graph to write down a suitable estimate for the required quarter.

Question 20

Part (a) was answered well. Most students were able to plot the points correctly and gain full marks. Some students were careless and did not plot the points correctly ie just missing the coordinate at which the point should be plotted.

Part (b) was answered well. Many students stated negative. Some students wrote that it is decreasing which is an incorrect answer.

Question 21

A significant number of students were able to score at least 2 marks in this question - usually for correctly calculating one of the required angles and drawing it accurately on the pie chart. A surprising number of those students who were able to calculate all the angles correctly were then unable to draw them accurately for their pie chart, suggesting that they did not have a protractor. Students are encouraged to draw the lines for the sectors with a ruler.

Summary

Based on their performance on this paper, students should:

- Read each question fully and carefully before attempting to answer it
- Show working out to support the final answer
- Check that probabilities do not have values greater than 1
- Use a ruler when drawing straight lines as in bar charts and pie charts
- Write down probabilities as fractions, decimals or percentages
- Understand that a demand for a probability requires a numeric response, whilst a demand for likelihood requires a word response
- Check their methods and answers more carefully

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:
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