Pearson

Examiners' Report
Principal Examiner Feedback

January 2018

Pearson Edexcel Level 1 Award
In Statistical Methods (AST10)
Paper 1

edexcel

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Principal Examiner Feedback – Level 1

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.

Candidates are advised to use a ruler when drawing straight lines and for joining points within a time-series graph.

The design of this paper was consistent with previous papers and the performance of students on this paper was consistent with that expected when the paper was set so that a pass mark of about 66% of the total mark could be considered as showing proficiency in Statistical Methods at Level 1.

Reports on Individual Questions

Question 1

Part (a) was generally answered well. Many students were able to calculate the key by dividing 12 by 3 to obtain the correct answer.

Part (b) was answered very well as many students used their key to obtain the correct answers.

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

Question 2

It was encouraging to see this question was answered fairly well. Many students could identify at least one reason why the bar chart could be misleading or was wrong. A common error was to state that the bars are different sizes without specifically referring to the misleading aspect which was that the width of the flies bar was different.

Question 3

Many students answered this question well and many students obtained 1 mark easily for writing down one thing wrong with the question, usually either that there was no time frame or the options overlap. A common incorrect answer was to write "No box for never".

Question 4

Part (a) was generally answered well. The vast majority of students were able to complete the two-way table. Students that did not gain full marks often gained 2

marks, as they were able to either place 5 and 8 or 38 and 16 in the correct place in the table.

Part (b) was poorly answered. Too many students used words like 'likely' rather than writing probabilities. Part (b) (i) was answered better than the other two parts and often students gained this mark. A common incorrect for (ii) was to write $\frac{4}{20}$ and (iii) was to write $\frac{27}{35}$.

Question 5

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 6

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 e.g. "Friend". Some students thought that the question required a diagram and common errors here were to draw a bar or pie chart.

Question 7

This question was done well. Most students were able to write down all the possible combinations from the two sets of cards. A common mistake was to write down the all the correct combinations and then repeat them e.g. (X, R) and (R, X). A few students gave incorrect combinations like (X, Y) as they had failed to read the question carefully.

Question 8

Part (a) of 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.

Part (b) was also answered well by the majority of students. The common incorrect answer was "curry" presumably missing that the question asked for the least popular.

Question 9

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

Part (b) was well answered as many students were able to mark a cross at the 0 on the probability scale.

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

Part (d) was not answered as well as the other three parts. Too many students used words like 'likely' rather than writing a probability.

Question 10

Part (a) was answered well by the majority of students. Many students drew the bar chart clearly and gained this mark.

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

Question 11

Part (a) was answered well. Many students knew how to find the mode of the times from the stem and leaf diagram. Some students who did have some idea wrote down 5 as their answer omitting the stem (4) 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.

Question 12

Part (a) and Part (b) was not answered well. Many students did not write down the correct probabilities.

For parts (a) and (b), students should be encouraged to write probabilities as fractions, decimals or percentages. Again here too many students gave likelihood answers rather than probabilities.

Part (c) was answered better than in previous series. Many students wrote down the correct answer followed by the correct reason.

Question 13

In part (a) many students were able to read the time-series graph accurately to find the number of new cars sold in quarter 1 of 2015.

Part (b) was not answered well. Many students were not able to plot the points correctly and therefore did not gain full marks. Students should be encouraged to look carefully at the scale given in the diagram.

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

Question 14

In part (a) many students were able to draw correct scatter diagrams for positive and negative correlation. A few candidates drew these the wrong way round.

Part (b) was answered well by the majority of candidates. Common errors included positive correlation and negative correlation.

Question 15

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 or found the middle number without ordering the data.

Part (b) was answered well as many students could add up the values to obtain 990 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 113 – 104, i.e. 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 the values for the mean/range for Fred and Sally. This is not a comparison but a statement. A few students compared the mean with the range. Some students left this part of the question blank.

Question 16

In part (a) most students were able to make at least one correct comparison. However some students did not make a comparison between the results for males and the results for females.

Part (b) was answered poorly and many students failed to link the 18 females to the quarter of the pie chart. Those students that did often gained 1 mark but then failed to realise that the question required the total number of people asked in the survey.

Question 17

Part (a) was answered quite well. Some students wrote their answer as $\frac{0.35}{1}$. Some students wrote their answers in the form of a ratio which of course is incorrect. Again as with other probability questions words like "Unlikely" were used for probability.

Many students, in part (b), failed to recall the fact that total of the probabilities is 1. Many students did not apply the correct method. Again as with other probability questions words like "Unlikely" were used for probability.

Question 18

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 of the numbers. Students should check their work more carefully, e.g. by comparing the total of their frequencies with the total number of pieces of data.

Part (b) was not done well. Few students were able to work out the total number of eggs laid from the results. Many students did not know the method to calculate the total number of eggs laid, i.e.:
$(1 \times 2) + (2 \times 5) + (3 \times 7) + (4 \times 4) + (5 \times 2)$.

A very common incorrect answer here was 20 which was calculated from
$2 + 5 + 7 + 4 + 2$

Question 19

This question was done reasonably well by most candidates. As with other probability questions words like "likely" were seen too often. Common error in part (b) was to give the probability that card was A rather than not A. Common error in part (c) was to give the probability of E and the probability of T and not add the two probabilities together.

Question 20

Part (a) was answered well by many students. The common error was to give the total number of scarves sold on Tuesday rather than the number of grey scarves.

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

Parts (c) and (d) were answered well by the majority of students. Many students were able to read and interpret the required information from the dual bar chart to answer each part of the question correctly.

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 and joining points e.i. Q10 (a), 20 (b) Q13 (b).
- 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

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