Question 1

The table t-value associated with the upper 10% of the t-distribution and 17 degrees of freedom is:

Select one:

a. 2.567

b. 1.333

c. 1.337

d. 1.740

Question 2

Catherine Cho, Director of Marketing Research at Vitalglow Pty Ltd, is evaluating consumer acceptance of a new toothpaste package. She randomly selects a sample of 200 Darwin households. Forty households prefer the new package to all other package designs. The point estimate for this population proportion is:

Select one:

a. 0.20

b. 0.25

c. 0.40

d. 0.45

Question 3

James Weepu, Human Resources Manager with Auckland First Bank (AFB), is reviewing the employee training programs of AFB branches. His staff randomly selected personnel files for 100 tellers in the Southern Region and determined that their mean training time was 25 hours. Assume that the population standard deviation is 5 hours. The 95% confidence interval for the population mean of training times is:

Select one:

a. 24.18 to 25.82

b. 16.78 to 33.23

c. 24.02 to 25.98

d. 15.20 to 34.80

Question 4

When a range of values is used to estimate a population parameter, it is called:

Select one:

a. a point estimate

b. a statistical parameter

c. a range estimate

d. an interval estimate

Question 5

The table t-value associated with the upper 0.5% of the t-distribution and 4 degrees of freedom is:

Select one:

a. 2.776

b. 4.604

c. 2.353

d. 2.132

Question 6

In order to find values in the t- distribution table, you must convert the sample size or sizes to:

Select one:

a. population sizes

b. z-values

c. student values

d. degrees of freedom

Question 7

Life tests performed on a sample of 13 batteries of a new model indicated: (1) an average life of 75 months, and (2) a standard deviation of 5 months. Other battery models, produced by similar processes, have normally distributed life spans. The 90% confidence interval for the population mean life of the new model is:

Select one:

a. 72.72 to 77.28

b. 66.09 to 83.91

c. 66.78 to 83.23

d. 72.53 to 77.47

Question 8

The table t-value associated with the upper 10% of the t-distribution and 23 degrees of freedom is:

Select one:

a. 1.319

b. 1.321

c. 1.714

d. 2.069

Question 9

The z-value associated with a two-sided 95% confidence interval is:

Select one:

a. 1.645

b. 2.575

c. 1.28

d. 1.96

Question 10

Nick Petritis, Operations Manager with the Palmerston North Trust Bank, is evaluating the service level provided to walk-in customers. Accordingly, his staff recorded the waiting times for 45 randomly selected walk-in customers, and calculated that their mean waiting time was 15 minutes. If Nick concludes that the average waiting time for all walk-in customers is 15 minutes, he is using:

Select one:

a. an interval estimate

b. a statistical parameter

c. a range estimate

d. a point estimate

Question 11

A random sample of 64 items is selected from a population of 400 items. The sample mean is 200. The population standard deviation is 48. From this data, a 90% confidence interval to estimate the population mean can be calculated as:

Select one:

a. 188.24 to 211.76

b. 190.94 to 209.06

c. 189.21 to 210.79

d. 190.13 to 209.87

Question 12

The lengths of steel rods produced by a shearing process are normally distributed. A random sample of 10 rods is selected; the sample mean length is 119.05 cm; and the sample standard deviation is 0.10 cm. The 95% confidence interval for the population mean rod length is:

Select one:

a. 118.82 to 119.28

b. 118.85 to 119.25

c. 118.99 to 119.11

d. 118.98 to 119.12

Question 13

Nick Petritis, Operations Manager with the Palmerston North Trust Bank, is evaluating the service level provided to walk-in customers. Accordingly, his staff recorded the waiting times for 64 randomly selected walk-in customers and determined that their mean waiting time was 15 minutes. Assume that the population standard deviation is 4 minutes. The 95% confidence interval for the population mean of waiting times is:

Select one:

a. 13.88 to 16.12

b. 8.42 to 21.58

c. 7.16 to 22.84

d. 14.06 to 15.94

Question 14

The z-value associated with a two-sided 82% confidence interval is:

Select one:

a. 1.41

b. 1.34

c. 0.46

d. 1.75

Question 15

The weights of aluminium castings produced by a process are normally distributed. A random sample of 5 castings is selected; the sample mean weight is 2.21 kg; and the sample standard deviation is 0.12 kg. The 98% confidence interval for the population mean casting weight is:

Select one:

a. 1.93 to 2.49

b. 1.76 to 2.66

c. 2.01 to 2.41

d. 2.08 to 2.34

Question 16

Sam Gates, Marketing Director of Mansfield Motors' Electrical Division, is leading a study to assess the relative importance of product features. An item on a survey questionnaire distributed to 100 Mansfield customers asked them to rate the importance of 'efficiency of operation' on a scale of 1 to 10 (with 1 meaning 'not important' and 10 meaning 'highly important'). His staff assembled the statistics shown in the table below. If Sam concludes that the average rate of 'efficiency of operation' for all customers is 6.0, he is using:

 

Select one:

a. an interval estimate

b. a statistical parameter

c. a point estimate

d. a range estimate

Question 17

A random sample of 225 items from a population results in 60% possessing a given characteristic. Using this information, the researcher constructs a 99% confidence interval to estimate the population proportion. The resulting confidence interval is:

Select one:

a. 0.59 to 0.61

b. 0.52 to 0.68

c. 0.54 to 0.66

d. 0.57 to 0.63

Question 18

Sam Gates, Marketing Director of Mansfield Motors' Electrical Division, is leading a study to assess the relative importance of product features. An item on a survey questionnaire distributed to 121 of Mansfield's customers asked them to rate the importance of 'ease of maintenance' on a scale of 1 to 10 (with 1 meaning 'not important' and 10 meaning 'highly important'). His staff assembled the following statistics. The 95% confidence interval for the population mean rating of 'ease of maintenance' is:

 

Select one:

a. 5.34 to 9.66

b. 7.30 to 7.70

c. 5.69 to 9.31

d. 7.34 to 7.66

Question 19

Rosie, a manager in a 5-star hotel in Adelaide, is reviewing the employee mentoring programs. She plans to use a 98% confidence interval estimate of mean mentoring time and is willing to accept an error of 1 hour; previous studies indicated a standard deviation of 4 hours. The sample size should be at least \_\_\_\_\_\_\_.

Select one:

a. 81

b. 87

c. 62

d. 107

Question 20

The table t- value associated with the upper 5% of the t-distribution and 12 degrees of freedom is:

Select one:

a. 2.179

b. 1.356

c. 1.782

d. 3.055