

Question 1

Not yet answered

Marked out of 1.00

Why does sample size need to be accounted for in the t-distribution?

- ☐ a. The t-distribution should not be used for large sample sizes.
- ☐ b. The t-distribution becomes less skewed as the sample size increases.
- ☐ c. The accuracy of the t-distribution depends on the sample size.
- ☐ d. The t-distribution changes for different sample sizes.
- ☐ e. The t-distribution should not be used for small sample sizes.

Question 2

Not yet answered

Marked out of 1.00

Rejecting the null hypothesis when the null hypothesis is true is called a

- ☐ a. Type 2 Error
- ☐ b. Correct decision
- ☐ c. Type 3 Error
- ☐ d. Type 1 Error

Question 3

Not yet answered

Marked out of 1.00

Heights (cm) and weights (kg) were measured for 100 randomly selected adult males. The fitted regression model for predicting weight based on height is $\hat{y} = -63 + 1.02x$. Predict the weight of an adult male who is 142 cm tall.

- ☐ a. 81.8 kg
- ☐ b. 142 kg
- ☐ c. 100.4 kg
- ☐ d. 201 kg

Question 4

Not yet answered

Marked out of 1.00

In linear regression analysis, what are residuals?

- ☐ a. The independent variables used to predict the dependent variable.
- ☐ b. The difference between the predicted values and the actual values of the dependent variable.
- ☐ c. The coefficient estimates obtained from the regression model.
- ☐ d. The correlation between the independent and dependent variables.

Question 5

Not yet answered

Marked out of 1.00

Failing to reject the null hypothesis when the null hypothesis is false is called a

- ☐ a. Type 2 Error
- ☐ b. Type 1 Error
- ☐ c. Correct decision
- ☐ d. Type 3 Error

Question 6

Not yet answered

Marked out of 1.00

A 95% confidence interval for the mean normal body temperature (in degree F) was computed as (98.123, 98.375), based on a sample of 130 observations of body temperature. What is the correct interpretation of this interval?

- ☐ a. we are confident that 95% of the individuals in the population should have body temperature between 98.123 and 98.375-degree F.
- ☐ b. we are 95% confident that the population mean normal body temperature is between 98.123 and 98.375-degree F.
- ☐ c. none of these interpretations is correct.
- ☐ d. we are confident that 95% of observations in the sample have body temperature between 98.123 and 98.375-degree F.

Question 7

Not yet answered

Marked out of 1.00

There is evidence against the null hypothesis whenever the p-value is

- ☐ a. 0.05
- ☐ b. large.
- ☐ c. small
- ☐ d. 1

Question 8

Not yet answered

Marked out of 1.00

“Significant” in the statistical sense does not mean “important”; it means simply “not likely to happen just by chance.”

- ☐ a. True
- ☐ b. False

Question 9

Not yet answered

Marked out of 1.00

Suppose a researcher sets the significance level at 5% prior to conducting an experiment. After conducting the study, the researcher computes a p-value of 0.4. The researcher can conclude that the null hypothesis is false.

- ☐ a. True
- ☐ b. False

Question 10

Not yet answered

Marked out of 1.00

Random sampling is useful for finding evidence of a causal relationship.

- ☐ a. True
- ☐ b. False

Question 11

Not yet answered

Marked out of 1.00

What does statistical inference mean?

- ☐ a. The process of collecting and organizing data.
- ☐ b. The process of making conclusions or decisions about a population based on sample data.
- ☐ c. The process of calculating descriptive statistics.
- ☐ d. The process of conducting experiments and analyzing the results.

Question 12

Not yet answered

Marked out of 1.00

What is random sampling?

- ☐ a. selecting individuals from a population based on a specific characteristic of interest.
- ☐ b. choosing individuals from a population using a random number generator.
- ☐ c. sampling individuals who are readily available and accessible.
- ☐ d. collecting data from a sample without any specific process.

Question 13

Not yet answered

Marked out of 1.00

A researcher comparing the average growth of four varieties of plants got a p-value of 0.01 following a one-way ANOVA test. From this p-value, the researcher can infer that at least one average growth is different from at least one other average growth.

- ☐ a. True
- ☐ b. False

Question 14

Not yet answered

Marked out of 1.00

A linear regression model was fitted to the data below. Identify a characteristic or property of the data that is ignored by the regression line.

- ☐ a. There is no characteristic of the data that is ignored by the regression line.
- ☐ b. The data has a pattern that is not a straight line.
- ☐ c. There is an influential point that strongly affects the graph of the regression line.
- ☐ d. There is no trend in the data.

Question 15

Not yet answered

Marked out of 1.00

We say that there is a positive correlation between x and y if the x-values increase as the corresponding y-values increase.

- ☐ a. True
- ☐ b. False

Question 16

Not yet answered

Marked out of 1.00

The purpose of a confidence interval is to give a range of likely or plausible values for the

- ☐ a. population parameter.
- ☐ b. sample statistic.
- ☐ c. confidence level.
- ☐ d. difference between the sample statistic and the population parameter.

Question 17

Not yet answered

Marked out of 1.00

Researchers conducted a study and obtained a p-value of 0.75. Based on this p-value, what conclusion should the researchers draw?

- ☐ a. Fail to reject the null hypothesis but do not accept the null hypothesis as true either.
- ☐ b. Reject the null hypothesis and accept the alternative as true.
- ☐ c. Fail to reject the null hypothesis and, therefore, accept the null hypothesis as true.
- ☐ d. Redo the study as it is not possible to get a p-value that high.

Question 18

Not yet answered

Marked out of 1.00

The larger the sample, the less accurate the sample statistic will be as an estimate of the population parameter.

- ☐ a. True
- ☐ b. False

Question 19

Not yet answered

Marked out of 1.00

If the population distribution is highly skewed, then the central limit theorem will never apply to the sampling distribution of sample means.

- ☐ a. True
- ☐ b. False

Question 20

Not yet answered

Marked out of 1.00

A p-value of 0.03 indicates that there is a 3% chance of obtaining the observed data or more extreme if the null hypothesis is true.

- ☐ a. True
- ☐ b. False