Quiz 1: Understanding Variance

Question: What does high variance in a dataset indicate about the spread of the data?

- A) The data points are very close to the mean.
- B) The data points are widely spread from the mean.
- C) The data points are perfectly aligned with the mean.
- D) The data points are all identical.

Answer: B) The data points are widely spread from the mean.

Quiz 2: Choosing the Correct Statistical Test

Question: Which test is preferred when the data includes nondetects and the distribution is not normal?

- A) t-test with data substitution.
- B) Bartlett's test for equal variance.
- C) Rank-sum test.
- D) Pearson's correlation test.

Answer: C) Rank-sum test.

Quiz 3: Sensitivity to Assumptions in Variance Tests

Question: Which test is known to be highly sensitive to non-normal distributions when testing for equal variances?

- A) Levene's test.
- B) Fligner-Killeen test.
- C) Bartlett's test.
- D) Fisher's exact test.

Answer: C) Bartlett's test.

Quiz 4: Understanding Nonparametric Tests

Question: What is a key advantage of using nonparametric tests like the Mann-Whitney U test over parametric tests like the t-test?

- A) Nonparametric tests assume data normality.
- B) Nonparametric tests require smaller sample sizes.
- C) Nonparametric tests can be used only when data are ordinal.
- D) Nonparametric tests do not assume data normality.

Answer: D) Nonparametric tests do not assume data normality.

Quiz 5: Types of Tests Used in Variance Analysis

Question: Which test is used to compare the means of two groups when the variances are unequal?

- A) Standard t-test
- B) Welch's t-test
- C) Chi-square test
- D) Kruskal-Wallis test

Answer: B) Welch's t-test