**Quiz Question 1: One-Factor ANOVA**

**What is the primary purpose of performing a one-factor Analysis of Variance (ANOVA)?** A) To determine if there is a significant difference between the means of more than two groups. B) To calculate the mean of one group. C) To compare the variances within a single group. D) To establish a correlation between two variables.

**Correct Answer:** A) To determine if there is a significant difference between the means of more than two groups.

**Quiz Question 2: Assumptions of ANOVA**

**Which of the following is NOT an assumption of the Analysis of Variance (ANOVA)?** A) All samples must be independent of one another. B) All groups must have the same sample size. C) The residuals should be normally distributed. D) All groups should have equal population variances.

**Correct Answer:** B) All groups must have the same sample size. *Explanation: ANOVA does not require equal sample sizes among groups but assumes equal population variances and independence among samples.*

**Quiz Question 3: Two-Factor ANOVA**

**What does an interaction effect in a two-factor ANOVA indicate?** A) The effect of one factor is consistent across the levels of the other factor. B) The effects of both factors are additive. C) The effect of one factor depends on the level of the other factor. D) There are no significant effects from either factor.

**Correct Answer:** C) The effect of one factor depends on the level of the other factor. *Explanation: An interaction effect in a two-factor ANOVA suggests that the impact of one factor varies depending on the level of the other factor, indicating that the effects of the factors are not simply additive.*