Quiz 1: Understanding Two-Factor ANOVA

1. **What is the main purpose of using a two-factor ANOVA?** a) To compare the means of three or more groups b) To understand the impact of two factors simultaneously c) To test the correlation between two variables d) To evaluate the effect of one factor only

   Answer: b) To understand the impact of two factors simultaneously

Quiz 2: Hypotheses in Two-Factor ANOVA

2. **What is the null hypothesis (H0) in a two-factor ANOVA?** a) All treatment group means differ significantly b) At least one treatment group mean differs significantly c) All treatment group means are equal d) The variance within groups is identical

   Answer: c) All treatment group means are equal

Quiz 3: Interaction Effects

3. **What indicates the presence of an interaction effect in a two-factor ANOVA?** a) The lines in an interaction plot are parallel b) The F-test statistic for interaction is less than 1 c) The effect of one factor is the same across all levels of the other factor d) The lines in an interaction plot are not parallel

   Answer: d) The lines in an interaction plot are not parallel

Quiz 4: Adjusting for Violations of Assumptions

4. **What is a common method to handle non-normal and heteroscedastic data in a two-factor ANOVA?** a) Applying Welch's adjustment b) Performing a power transformation, such as logarithms c) Ignoring the violations and proceeding with ANOVA d) Using a one-way ANOVA instead

   Answer: b) Performing a power transformation, such as logarithms