Multiple Choice

This activity contains 15 questions.

1. [Hint]

ANOVA tests use which of the following distributions?

- *t*
- Chi-square
- Z
- F

2. [Hint]

Which of the following statistical concepts is used to test differences in the means for more than two independent populations?

- Confidence interval
- Regression analysis
- Analysis of variance
- Multiple *t* test

3. [Hint]

Determining the table value for the F distribution is different than finding values for the *t* distribution because the F table requires which of the following?

- one degree of freedom term
- two degree of freedom terms
- values for alpha and beta
- no degree of freedom terms

4. [Hint]

The one-way ANOVA is used to test statistical hypotheses concerning which of the following?

- Proportions
- Means
- Variances
- Standard deviations

5. [Hint]

In a one-way ANOVA F test, the "among-group" variation is attributable to what source of variation?

- Unexplained variation
- Residual variation
- Experimental error

- Treatment effects

6. [Hint]

In a one-way ANOVA, if the computed F value exceeds the critical F value, what decision is made regarding the null hypothesis?

- Do not reject H_0 because a mistake has been made.
- Reject H_0 since there is evidence that all means differ.
- Reject H_0 since there is evidence of a treatment effect.
- Do not reject H_0 since there is no evidence of a difference.

7. [Hint]

Which of the following ANOVA components are not additive?

- Sum of squares
- Mean squares
- Degrees of freedom
- All of the above are additive

8. [Hint]

The Tukey-Kramer procedure is used for which of the following purposes?

- Test for differences in pairwise means
- Test for normality
- Test for independence of errors
- Test for homogeneity of variance

9. [Hint]

Which of the following formulas is used to calculate the F statistic for a one-way ANOVA experiment?

- MSW/MSA
- SSW/SSA
- MSA/MSW
- SSA/SSW

10. [Hint]

Which of the following F tests is used in a two-way ANOVA?

- MSE/MSB
- MSB/MSE
- MSE/MSAB
- MSE/MSA

11. [Hint]

In a two-way ANOVA, how many degrees of freedom exist for the interaction term?

- (r – 1)(c – 1)
- rcn + 1
- rc(n – 1)
- (r – 1)

12. [Hint]

In a one-way ANOVA, how many degrees of freedom exist for the F test?

- (n – c) and (c – 1)
- (n – 1) and (c – n)
- (c – 1) and (n – c)
- (c – n) and (n – 1)

13. [Hint]

In a one-way ANOVA, which of the following statements is correct?

- There are multiple interactions.
- An interaction can be tested.
- An interaction is present.
- There is no interaction.

14. [Hint]

In a two-way ANOVA, how many degrees of freedom are used for the error term?

- (r – 1)(c – 1)
- (r – 1)
- rcn + 1
- rc(n – 1)

15. [Hint]

A completely randomized design has 3 different treatments and a total of 30 measurements in the study. For alpha = 0.0.5, which of the following indicates the critical F value?

- 39.46
- 3.35
- 4.24
- 19.45