With appropriate explanation for each answer.

1. Is the interaction a source of variance?

Select one:

a. No

b. Yes

2. When is it appropriate to consider outliers?

Select one:

a. Never

b. Always

c. Before beginning and ANOVA

d. Only when using a nonrandom sample

3. Which of the following tests is most likely to identify a statistically significant difference

Select one:

a. Effron's Bootstrap

b. Post hoc comparisons

c. Least significant difference (LSD)

d. Bonferroni Tests

4. In the study portrayed below, you are asked to examine mathematical ability in each group. There are equal numbers of participants in both groups. The mean scores on a math test are given below. Is there an interaction present?

|  |  |  |
| --- | --- | --- |
|  | In a sports team | Not in a team |
| Attend book club | 20.1 | 35.7 |
| Don’t attend | 19.3 | 19.6 |

Select one:

a. No

b. Only in one variable

c. Not enough information to tell

d. Yes

5. In a study you are asked to look at educational attainment in three different cities by gender (male/female). The three conditions for educational attainment are ‘left school at 16’, ‘completed A levels’, and ‘gained bachelor’s degree or higher’. How would the ANOVA be represented?

Select one:

a. 3 x 2

b. 3 × 3 × 2  or  32 x 2

c. 1 x 2 x 3

d. 2 × 3 × 2 or  3 x 22

6. The overall effect of an independent variable on a dependent variable is called?

Select one:

a. Interaction effect

b. Indirect effect

c. Main Effect

d. Direct effect

7. A factorial ANOVA is used to?

Select one:

a. Reduce the interaction effect for both independent variables

b. Reduce human errors

c. Increase the likelihood of achieving a statistically significant result

d. Investigate the interaction effect of the levels for both independent variables

8. Post-hoc tests are used to determine the significance of

Select one:

a. Main effects

b. Interaction effects

c. Factor level effects

d. Model effects

9. On difference between ANOVA and ordinary least squares regression is

Select one:

a. ANOVA has a categorical outcome variable and regression has a continuous outcome

b. Regression equations predict individual scores and ANOVA predicts group scores

c. ANOVA is more powerful than regression and less likely to result in a false rejection.

d. Regression is robust to violations of independence and ANOVA is robust to nonnormality

10. You are asked to go into a primary school and perform a study to look for any correlation between participation in school sports teams and whether the pupil attends the after-school book club. Each independent variable for the study has two conditions attached to it. How would the ANOVA be represented?

Select one:

a. 2 x 2

b. 4 x 4

c. 2 x 2 x 2 x 2

d. 1 x 1 x 1 x 1

11. Error is not a type of variance.

Select one:

a. True

b. False

12. The difference between levels of one independent variable within one level of the other independent variable is?

Select one:

a. The main effect in a 2 × 2 ANOVA

b. A degree of freedom

c. An error

d. A simple effect

13. A 2 × 2 between-participants ANOVA will have?

Select one:

a. No errors of any significance

b. One error term for between participants

c. One error term for the whole analysis

d. One error term for each main effect and one error term for each interaction

14. Which of the following allow for relative comparisons of the contribution of individual factors in a multi-way ANOVA?

Select one:

a. F-Statistics

b. [P-values](https://moodleilp.bellarmine.edu/mod/url/view.php?id=425920)

c. Levene's test

d. Eta Square

15. Apriori contrasts are best used when

Select one:

a. A test more conservative than post hoc comparisons is desired

b. The effect sizes of the main effects are very small

c. The differences between groups are confounded with error

d. You are testing a specific hypothesis between factor levels