# STATISTICS WORKSHEET

1. In hypothesis testing, type II error is represented by $\beta$ and the power of the test is $1-\beta$ then $\beta$ is:

Answer→ b. The probability of failing to reject H0 when H1 is true.

2. In hypothesis testing, the hypothesis which is tentatively assumed to be true is called the

Answer→ b. null hypothesis

3. When the null hypothesis has been true, but the sample information has resulted in the rejection of the null, a _____ has been made

Answer→ d. Type I error

4. For finding the p-value when the population standard deviation is unknown, if it is reasonable to assume that the population is normal, we use

Answer→ b. the t distribution with n - 1 degrees of freedom

5. A Type II error is the error of

Answer→ a. accepting Ho when it is false.

6. A hypothesis test in which rejection of the null hypothesis occurs for values of the point estimator in either tail of the sampling distribution is called

Answer→ d. a two-tailed test

7. In hypothesis testing, the level of significance is

Answer→ b. the probability of committing a Type I error.

8. In hypothesis testing, b is

Answer→ a. the probability of committing a Type II error.

9. When testing the following hypotheses at an $\alpha$ level of significance

H0: p = 0.7

H1: p > 0.7

The null hypothesis will be rejected if the test statistic Z is

Answer→ a. z > zα


10. Which of the following does not need to be known in order to compute the P-value?

Answer→ c. the level of significance


11. The maximum probability of a Type I error that the decision maker will tolerate is called the

Answer→ a. level of significance


12. For t distribution, increasing the sample size, the effect will be on

Answer→ d. All the Above


13. What is Anova in SPSS?

Answer→

 Analysis of Variance i.e., ANOVA in SPSS, is used for examining the differences in mean values of the dependent variables associated with the effect of the controlled independent variables, after taking into account the influence of the uncontrolled independent variables. Essentially, ANOVA in SPSS is used as the test of means for two or more population.

ANOVA in SPSS must have a dependent variable which should be metric (measured using an interval or ratio scale).ANOVA in SASS must also have one or more independent variable, which should be categorical in nature. In ANOVA in SPSS, categorical independent variables are called factors. A particular combination of factor levels or categories is called a treatment.


14. What are the assumptions of Anova?

Answer→

The three main assumptions of ANOVA are:

   ➢ The responses for each factor level have a normal population distribution.
   ➢ These distributions have the same variance.
   ➢ The data are independent.

15. What is the difference between one-way Anova and two way Anova?

Answer→

| BASIS OF COMPARISON | ONE WAY AVONA | TWO WAY ANOVA |
|---|---|---|
| Meaning | One way ANOVA is a hypothesis test, used to test the equality of three of more population means simultaneously using variance. | Two-way ANOVA is a statistical technique wherein, the interaction between factors, influencing variable can be studied. |
| Independent Variable | One | Two |
| Compares | Three or more levels of one factor. | Effect of multiple level of two factors. |
| Number of Observation | Need not to be same in each group. | Need to be equal in each group. |
| Design of Experiments | Need to satisfy only two principles | All three principles needs to be satisfied. |