STATISTICS WORKSHEET – 1

Q1 to Q12 have only one correct answer. Choose the correct option to answer your question.

1. In hypothesis testing, type II error is represented by β and the power of the test is 1−β then β is:

a. The probability of rejecting H0 when H1 is true

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

c. The probability of failing to reject H1 when H0 is true

d. The probability of rejecting H0 when H1 is true

Answer : **B**

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

a. correct hypothesis

b. null hypothesis

c. alternative hypothesis

d. level of significance

Answer : **B**

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

a. level of significance

b. Type II error

c. critical value

d. Type I error

Answer : **D**

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

a. the z distribution

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

c. the t distribution with n + 1 degrees of freedom

d. none of the above

Answer : **B**

5. A Type II error is the error of

a. accepting Ho when it is false

b. accepting Ho when it is true

c. rejecting Ho when it is false

d. rejecting Ho when it is true

Answer : **B**

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

a. the null hypothesis

b. the alternative hypothesis

c. a one-tailed test

d. a two-tailed test

Answer : **D**

7. In hypothesis testing, the level of significance is

a. the probability of committing a Type II error

b. the probability of committing a Type I error

c. the probability of either a Type I or Type II, depending on the hypothesis to be tested

d. none of the above

Answer : **B**

8. In hypothesis testing, b is

a. the probability of committing a Type II error

b. the probability of committing a Type I error

c. the probability of either a Type I or Type II, depending on the hypothesis to be test

d. none of the above

Answer : **A**

9. When testing the following hypotheses at an α level of significance

H0: p = 0.7

H1: p > 0.7

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

a. $z > z\alpha$

b. $z < z\alpha$

c. $z < -z$

d. none of the above

Answer : **A**

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

a. knowledge of whether the test is one-tailed or two-tail

b. the value of the test statistic

c. the level of significance

d. All of the above are needed

Answer : **A**

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

a. level of significance

b. critical value

c. decision value

d. probability value

Answer : **A**

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

a. Degrees of Freedom

b. The t-ratio

c. Standard Error of the Means

d. All of the Above

Answer : **D**

Q13 to Q15 are subjective answers type questions. Answers them in their own words briefly.

13. What is Anova in SPSS?

Answer :

ANOVA (Analysis of Variance) is a statistical technique used to test the equality of means between two or more groups. In SPSS, ANOVA is used to analyse the variation between group means and to determine whether any of the differences are statistically significant.

14. What are the assumptions of Anova?

Answer:

The assumptions of ANOVA (Analysis of Variance) include:

1. Independence: The observations should be independent of each other. Each observation should not be affected by any other observation.

2. Normality: The data within each group should be normally distributed.

3. Homogeneity of variance: The variance of the data in all the groups should be equal.

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

Answer:

The main difference between one-way and two-way ANOVA is the number of independent variables being examined. One-way ANOVA involves one independent variable, while two-way ANOVA involves two independent variables. Additionally, two-way ANOVA is more complex than one-way ANOVA because it involves examining both main effects and interaction effects.