1. Rejection of the null hypothesis is a conclusive proof that the alternative hypothesis is

Ans – A

2. Parametric test, unlike the non-parametric tests, make certain assumptions about

Ans- B

3. The level of significance can be viewed as the amount of risk that an analyst will accept when making a decision

Ans -A

4. By taking a level of significance of 5% it is the same as saying

Ans – B

5. One or two tail tests will determine

Ans – C

6. Two types of errors associated with hypothesis testing are Type I and Type II. Type II error is committed when

Ans – B

7. A randomly selected sample of 1,000 college students was asked whether they had ever used the drug, Ecstasy. Sixteen percent (16% or 0.16) of the 1,000 students surveyed said they had. Which one of the following statements about the number 0.16 is correct?

Ans – A

8. In a random sample of 1000 students, $\hat{p} = 0.80$ (or 80%) were in favor of longer hours at the school library. The standard error of $\hat{p}$ (the sample proportion) is

Ans – B

9. For a random sample of 9 women, the average resting pulse rate is $x = 76$ beats per minute, and the sample standard deviation is $s = 5$. The standard error of the sample mean is

Ans – B

10. Assume the cholesterol levels in a certain population have mean $\mu = 200$ and standard deviation $\sigma = 24$. The cholesterol levels for a random sample of $n = 9$ individuals are measured and the sample mean x is determined. What is the z-score for a sample mean $x = 180$?

Ans – A

11. In a past General Social Survey, a random sample of men and women answered the question "Are you a member of any sports clubs?" Based on the sample data, 95% confidence intervals for the population proportion who would answer "yes" are .13 to .19 for women and .247 to .33 for men. Based on these results, you can reasonably conclude that

Ans – D

12. Suppose a 95% confidence interval for the proportion of Americans who exercise regularly is 0.29 to 0.37. Which one of the following statements is FALSE?

Ans – B

13. How do you find the test statistic for two samples?

Ans - The test statistic for comparing two samples depends on the type of hypothesis test being conducted and the nature of the data. Here are some examples of test statistics for common hypothesis tests:

- Two-sample t-test: The test statistic is calculated as the difference between the sample means divided by the standard error of the difference between the means. This statistic follows a t-distribution with degrees of freedom equal to the sum of the sample sizes minus two.
- Paired t-test: The test statistic is calculated as the difference between the paired observations divided by the standard error of the differences. This statistic also follows a t-distribution with degrees of freedom equal to the number of pairs minus one.
- Two-sample z-test: The test statistic is calculated as the difference between the sample proportions divided by the standard error of the difference between the proportions. This statistic follows a standard normal distribution.

In general, the test statistic is used to calculate the p-value, which is the probability of obtaining a test statistic as extreme or more extreme than the one observed, assuming the null hypothesis is true. The p-value is then compared to the level of significance to determine whether to reject or fail to reject the null hypothesis.

14. How do you find the sample mean difference?

Ans - To find the sample mean difference, you need to take the difference between the means of two samples. It is typically calculated as:

sample mean difference = sample mean of group 1 - sample mean of group 2

For example, if you have a sample of 50 people who took a math test and another sample of 60 people who took the same math test, you can find the sample mean difference between the two groups by calculating the mean score for each group and subtracting them. If the mean score for group 1 is 75 and the mean score for group 2 is 80, then the sample mean difference would be:

sample mean difference = 75 - 80 = -5

A negative sample mean difference indicates that the first group (group 1) scored lower on average than the second group (group 2).

15. What is a two-sample t test example?

Ans - A two-sample t-test is a statistical hypothesis test used to determine if there is a significant difference between the means of two independent groups. Here is an example of a two-sample t-test:

Suppose we want to compare the average height of men and women in a certain population. We randomly sample 50 men and 50 women and measure their heights. The sample mean height for the men is 175 cm with a standard deviation of 6 cm, while the sample mean height for the women is 162 cm with a standard deviation of 5 cm. We want to know if the average height of men is significantly different from the average height of women.

We can use a two-sample t-test to test the hypothesis that the mean height of men is equal to the mean height of women. We would calculate the t-statistic using the formula:

$t = (x1 - x2) / (s1^2/n1 + s2^2/n2)^0.5$

where x1 and x2 are the sample means, s1 and s2 are the sample standard deviations, and n1 and n2 are the sample sizes.

We would then compare the calculated t-statistic to the appropriate critical value from a t-distribution with (n1+n2-2) degrees of freedom at a chosen level of significance (e.g., 0.05). If the calculated t-statistic is greater than the critical value, we would reject the null hypothesis and conclude that there is a significant difference between the mean heights of men and women in the population.