1. State the difference between estimation and hypothesis testing.

Both of these terms are related to inferential procedures, but these two techniques differ in terms of the type of question they address,
Estimation is directed toward the more practical question of how much effect and A hypothesis test, for example, addresses the somewhat academic question concerning the existence of a treatment effect.

For more explanation,
In a hypothesis test, we assume that the opposite attribute is correct (null hypothesis) and we start to calculate the possibility of our new goal if the exit value is greater than the value that is acceptable to reject the null hypothesis, we can't reject it and now the time the estimation, in the estimation we have two different topics first point estimate that is pointed to exact value and the second is an interval estimate that knows as confidence intervals. The confidence interval is dependent on different factors but one of the most important ones is, how much the sample size is big it is the cause decreasing of the interval standard deviation.

Another difference is,
in estimation, we try to pick a reasonable high-probability value for *t*, but in the hypothesis test we submitted the value of *t* in the formula and check the null hypothesis for rejecting.

Reference,

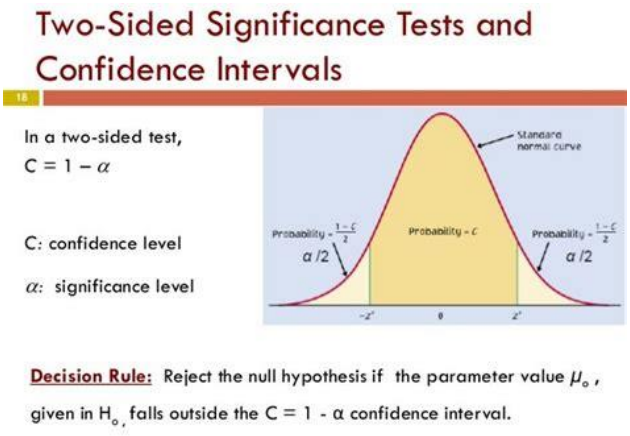
http://www.bristol.ac.uk/medical-school/media/rms/red/6_estimation__hypothesis_testing.html#:~:text=A%20test%20statistic%20from%20a,evidence%20against%20it%20(falsification)

https://home.ubalt.edu/tmitch/631/PowerPoint_Lectures/chapter12/chapter12.ppt

2. Is there a relationship between confidence and significance levels? Explain.

The significance level defines the distance the sample mean must be from the null hypothesis to be considered statistically significant. The confidence level tells you how sure you can be and is expressed as a percentage.
But, the significance level and the confidence level define a distance from a limit to a mean. Broadly we can say that a significance level and a comp confidence level are complements of each other.

Significance level: In a hypothesis test, the significance level, alpha, is the probability of making the wrong decision when the null hypothesis is true, another way of saying this is that it's your probability of making a Type I error.
Confidence level: The probability that if a poll/test/survey were repeated over and over again, the results obtained would be the same. A confidence level = 1 – alpha. The confidence level states how confident you are that your results (whether a poll, test, or experiment) can be repeated ad infinitum with the same result.
A 0% confidence level == no faith at all
A 100% confidence level == no doubt at all



Reference,

https://www.datasciencecentral.com/significance-level-vs-confidence-level-vs-confidence-interval/

https://bestopbook.info/