4) Given the null hypothesis: that a process is producing no more than the maximum allowable rate of defective items. In this situation, a type II error would be:

a) to conclude that the process is producing too many defectives when it actually is not

b) to conclude that the process is not producing too many defectives when it actually is

c) to conclude that the process is not producing too many defectives when it is not

d) to conclude that the process is producing too many defectives when it is

Ans: **b) to conclude that the process is not producing too many defectives when it actually is**

A type II error is a statistical term used within the context of hypothesis testing that describes the error that occurs when one accepts a null hypothesis that is actually false.

268) A researcher concludes from his analysis that a placebo cures AIDS. What type of error is he making?

A) Type 1 error

B) Type 2 error

C) None of these. The researcher is not making an error.

D) Cannot be determined

Solution: (D)

By definition, type 1 error is rejecting the null hypothesis when its actually true and type 2 error is accepting the null hypothesis when its actually false. In this case to define the error, we need to first define the null and alternate hypothesis.

269) What happens to the confidence interval when we introduce some outliers to the data?

A) Confidence interval is robust to outliers

B) Confidence interval will increase with the introduction of outliers.

C) Confidence interval will decrease with the introduction of outliers.

D) We cannot determine the confidence interval in this case.

Solution: (B)

We know that confidence interval depends on the standard deviation of the data. If we introduce outliers into the data, the standard deviation increases, and hence the confidence interval also increases.