Gross Errors

Gross errors or blunders are errors in the measurement that arise due to the surveyor's carelessness and cannot be corrected. The Law of probability also cannot be applied to gross errors. These are unpredictable and can't be estimated. Due to gross errors, a large impact on the measurement can be seen, so it should be avoided in the measurement.

Gross error can also occur if the surveyor works over a long time, and due to tiredness, improper measurement can occur. It can also occur due to mistakes in the setting of the instruments. Correct reading taken by the improperly adjusted instrument leads to incorrect reading and the generation of gross errors.

Gross Error Definition

Gross errors can be defined as the blunders or mistakes occurred by the human being during the measurement. As per the GATE exam, Gross errors are generally not categorized in terms of the types of errors because no theory of errors applies to gross errors. The measurement can observe gross errors even by taking high-precision instruments.

Measurement consisting of the blunders must be revised before the calculation work using that observation. These errors can only be checked during the overall check of the survey data. But small errors still remain undetected.

Gross Errors in Measurement

Gross measurement errors are the blunders that can occur due to the mistake taken by the surveyor during the measurement. Gross measurement errors can occur due to the carelessness of the surveyor or due to the improper adjustment of the instrument while taking the observations. Here, different measurement errors as per the GATE CE syllabus are explained below.
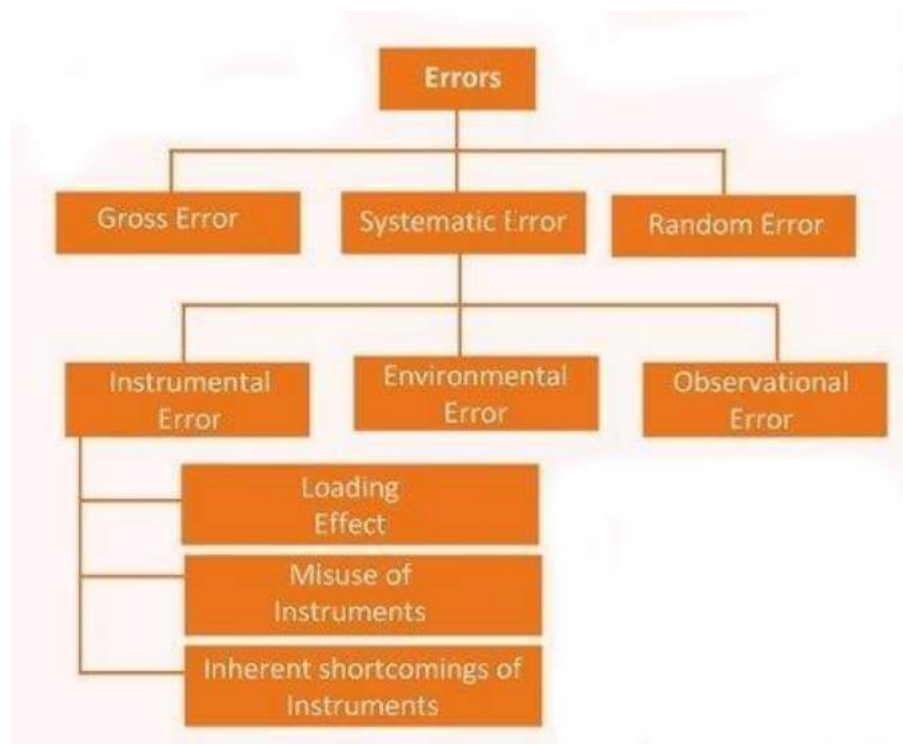
Types of Gross Errors

As mentioned in the theory of errors, Gross errors are blunders that can cause by various reasons during the measurement of the survey work. An incorrect measurement taken by surveyors mainly causes gross errors. Based on the generation of the blunders, the gross error can be classified into the following types.

- It can occur due to misreading the measurement.
- This may be due to incorrect adjustments to the instruments
- It can occur due to improper application of the instruments
- It can occur due to computational mistakes during the calculation of survey data

Example of Gross Errors

As we know, gross errors are the blunders caused by improper measurement or surveyors' mistakes. A gross error check can be done during the computational of the surveying data. For example, if the surveying data of 114.30 is written as 140.30 by mistake, it will be considered a blunder. Here a few examples of blunder mistakes are given below.

- Improperly leveling the surveying instrument.
- Setting up the instrument or target over the wrong control point.
- Incorrectly entering a control point number in the data collector.
- Transposing numbers or misplacing the decimal point.