SURVEYING LAB

CHAIN SURVEYING

It is the system of surveying in which the sides of the various triangles are measured directly in the field and no angular measurements are taken. The chain surveying is done for the following purposes: a) To secure the necessary data for planning. b) To secure data for exact description of the boundaries of a place of land. c) To determine its area. d) To divide a place of land into several units.

COMPASS SURVEYING

Compass survey is a method of surveying by taking bearings and linear distances to produce plan. Bearing is measured using prismatic compass, while the linear distance is measured using measuring tape. Bearing in compass surveying means angle made by chain line or survey line by referring it to magnetic meridian or magnetic north. By using such angular bearings and linear measurements, we can find Area of a particular field after application of bearing corrections for such measured bearings.

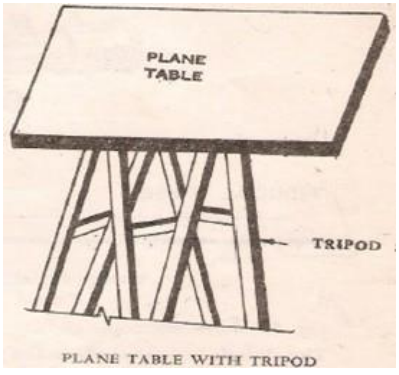
LEVELLING

The art of determining and representing the relative height or elevation of different object/points on the surface of earth is called leveling. It deals with measurement in vertical plane. By leveling operation, the relative position of two points is known whether the points are near or far off. Similarly, the point at different elevation with respect to a given datum can be established by leveling. It is helpful in sketching out the Longitudinal and Cross-sectional levels of field using Simple, Fly and Differential levelling procedures

PLANE TABLE SURVEYING

A plane table is a device used in surveying and related disciplines to provide a solid and level surface on which to make field drawings, charts and maps. The early use of the name plain table reflected its simplicity and plainness rather than its flatness.

Plane table surveying is a graphical method of surveying in which field work and plotting are done simultaneously in the field.

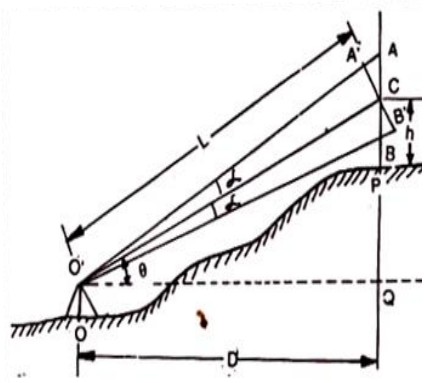


PLANE TABLE WITH TRIPOD

THEODOLITE SURVEYING

Theodolite is a measurement instrument utilized in surveying to determine horizontal and vertical angles with the tiny low telescope that may move within the horizontal and vertical planes. Following are the major uses of theodolite: Measuring horizontal and vertical angles, locating points on a line, Finding the difference in the level, Prolonging survey lines, Ranging curves, Setting out grades etc.,

TACHEOMETRY SURVEYING



Tacheometry is a branch of surveying in which the horizontal and vertical distances are determined by angular observations with a tacheometer, the chaining operation being altogether eliminated. Tacheometry is not as accurate as is changing, but it is far more rapid in rough and difficult country where levelling is tedious and chaining is both inaccurate and slow.

Thus, it is best suited when obstacles such as steep and broken ground, deep ravines, stretches of water or swamps are met with Tacheometry is mainly used while preparing contour plans and traversing and is also suitable for hydrographic surveys, location surveys of roads, railways, etc. It is also sometimes employed for small surveys in which elevations are not determined

TOTAL STATION SURVEYING

A total station (TS) or total station theodolite (TST) is an electronic/optical instrument used for surveying and building construction. It is an electronic transit theodolite integrated with electronic distance measurement (EDM) to measure both vertical and horizontal angles and the slope distance from the instrument to a particular point, and an on-board computer to collect data and perform triangulation calculations