

B.A. 4th Semester (M)
(Surveying Techniques)

classmate

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Surveying: its meaning, types and significance in geography.

Ans:- Surveying is commonly considered to be the science of making measurements needed to locate accurately the details of the earth's surface. Map making in its complete sense involves surveying, for only by surveying can the first accurate map of a given part of the earth's surface be made. The details of the earth's surface change through time. It is only by surveying that changes, which have occurred in the area mapped earlier, can be incorporated accurately and expressed with exactness in the symbolic language of cartography.

Surveying involves extensive field work and elaborate laboratory work. In addition, it involves a good knowledge of the instruments used in the field. Field work includes

- 1) the measurement of distances and angles.
- 2) the preparation of the field notes.

Field noting consists of the recording of the numerical values, the preparation of sketches of the areas and features surveyed and the explanation of the recorded data.

Types: Surveying can be classified into several types.

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If we take the purpose of the survey as the criterion we can have:

- 1) Cadastral surveying
- 2) Topographical surveying
- 3) Military surveying
- 4) Geological surveying and so on.

If we consider the accuracy desired and the technique used, we can have:

- 1) Geodetic Surveying
- 2) Plane Surveying
- 3) Aero-Surveying
- 4) Hydrographic Surveying etc.
- 5) Surveying by Remote Sensing method

Geodetic surveying: The main purpose of geodetic surveying is to establish a set of control points to which the survey of lower orders can be tied up subsequently. A control point is merely a spot on the earth whose precise location has been established. It is a point of reference from which measurements are made to locate other points. Greater the number of control points in a given area, better is the accuracy with which earth features can be mapped.

Before any definitive geodetic surveying covering an extensive area can be done, two critical factors have to be decided. The first factor is the ~~Datt~~ Datum Point which is the origin

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for further comprehensive linear measurements and the other is the Datum Plane which establishes the base level for determining elevation. Datum Point gives mean earth gravity and the Datum Plane the zero elevation.

Plane Surveying: Unlike geodetic surveying, assumes the earth to be flat. The reason behind this assumption is that plane surveying is used only for relatively small areas. Usually, it is used to fill up the details within the framework of the control points established by geodetic surveying. Plane surveying is also used for such specific purposes as demarcation of various types of boundaries, property lines and alignment of transport lines.

All horizontal and vertical measurements in plane surveying are tied to the measurements given by the trigonometrical stations and bench marks.

There are several types of plane surveying, these are:

- 1) Chain surveying: chain surveying is of two types; a) Open traverse
b) closed traverse.
- 2) Plane-table surveying
- 3) Prismatic compass surveying
- 4) Theodolite surveying
- 5) Levelling.

Moreover surveying by remote sensing method using a) Aerial photography, b) Side looking radar imagery and c) Scanned or photographic imagery etc.