

**S.S. COLLEGE, JEHANABAD
(GEOGRAPHY DEPARTMENT)**

B.A. PART - 3 (PRACTICAL GEOGRAPHY)

TOPIC : METHODS AND TECHNIQUES OF SURVEYING

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Methods/Techniques of Surveying

Chain and Tape Survey

In this the distances are measured with the help of chains and tapes. The chain is made of strong iron or steel wire with a brass handle at each end. There are two kinds of chains:

- (i) Engineer's chain, 100 ft. long.
- (ii) Gunter's chain, 66 ft. long.

Tapes are of three kinds:

- (i) Cloth tapes,
- (ii) Brass wire tapes,
- (iii) Steel tapes.
- (iv) Invar tapes (best of all)

The Equipments used for Surveying

Ranging Rods: Rods made of bamboo or iron rod to aid visibility.

Arrow or Pins: These are 15" to 18" long iron and steel wires pointed at one end and bent into loop at other.

Offset Staff: Wooden rods round or square and with a pointed into iron shoe. The length is generally 10 ft. and every foot is alternately coloured with different colours.

Magnetic compass: an instrument having magnetic needles used for determining the direction of the north point.

Plane Table Survey

The following equipments are generally necessary:

- (i) The plane-table with a tripod.
- (ii) An alidade or sighting rule.
- (iii) A chain or tape for measurement.
- (iv) A spirit level for levelling the table.
- (v) A trough compass for determining the north direction.
- (vi) A plumb-bob for centering the table

Procedure: A drawing sheet is affixed on the plane-table, the objects are located with the help of alidade, a suitable scale is chosen and the objects are plotted on the sheet then and there on the field.

Compass Surveying

This type of surveying is done with the help of prismatic compass. With the help of this compass magnetic bearing, i.e., the angle which a line joining the observer with the object makes with the magnetic north-south line at a place, measured from the latter in clockwise direction. (It should be distinguished from true bearing which means the angular inclination of a line from the geographical north-south line, i.e., the line joining the North Pole with the South Pole.)

Open traverse method: When the surveyor goes to other stations and does not return to the starting point.

Closed traverse method: When the surveyor goes to other stations for surveying but finally returns to the starting point.

Theodolite Surveying

In this, the surveying is done with the help of a theodolite. It is an instrument used for measuring horizontal and vertical angles more precisely and accurately than any other instrument.

Other instruments used for surveying

Clinometer: This is a kind of spirit level used to measure the angle, which the line of sight makes with a horizontal line. In other words, it measures the slope of land.

Abney level: A kind of clinometer.

Aneroid Barometer: This is used for getting the absolute height of places. It depends on the fact that the pressure of the atmosphere varies with the height above the sea level. So the aneroid barometer shows different readings at different heights.

Sextant: It is a handy instrument used to measure the angles of the objects located on the field.

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