SNS COLLEGE OF TECHNOLOGY
(AN AUTONOMOUS INSTITUTION)
COIMBATORE-35

I BE / I SEMESTER

23GET102-BCM(CIVIL)

LEVELLING

It is the art of determining the relative heights of points on earths surface. It deals with the measurements in vertical planes.

OBJECTIVES OF LEVELLING

➢ **For execution of many engineering projects of railways, canals, dams, etc.**

➢ **To plan for good network of levels keeping the economy and safety**

➢ **To give an excellent terrain mapping for project design.**

➢ **For improving the accuracy of alignments**

➢ **To give proper topography of heights**

❖ **Level surface:**

The surface that is normal to the direction of gravity

❖ **Level line:**

It is line lying in level surface

❖ **Horizontal Plane:**

The plane tangential to the level surface at any point

❖ **Vertical plane:**

The plane that contains vertical line at a place is called vertical plane. The vertical line at any point will be perpendicular to the level surface at that point.

❖ **Datum Surface:**

This is an arbitrary surface with reference to which the heights (elevation) are measured and compared.

❖ **Reduced level(R.L.)**

It is the level which is above (or) below the datum

❖ **Back Sight (B.S.):**

It is the first staff reading taken after installing the instrument in any position. This will always be a point of known height.

❖ **Fore Sight (F.S.):**

It is the last staff reading taken on a point before shifting the instrument. This is a point whose height has to be determined.

❖ **Intermediate Sight (IS):**

It is the intermediate staff reading taken after back sight and before the fore sight. It is done, only when we require two readings for the same position.

❖ **Change point(CP):**

It indicates the shifting of the instrument. Both B.S. and F.S. are taken on a change point.

❖ **Bench mark:**

It is fixed point of reference known elevation.

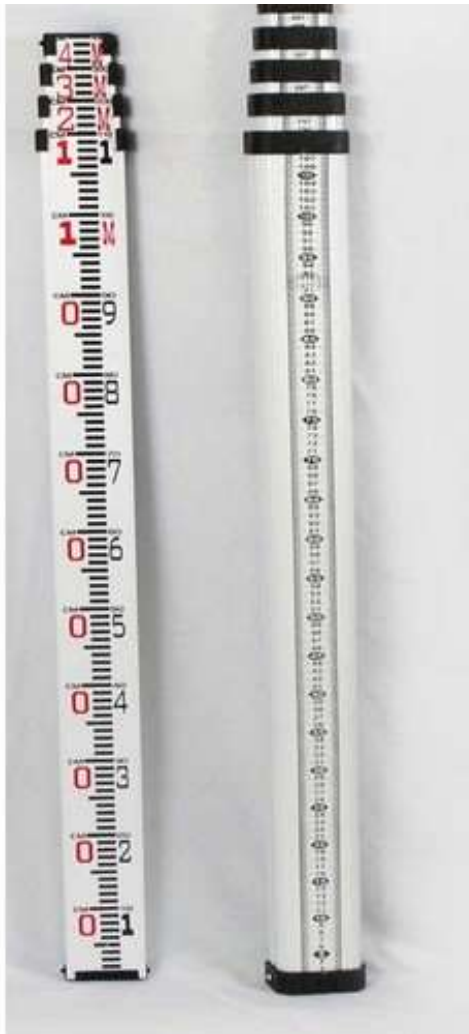# INSTRUMENTS FOR LEVELLING

Dumpy Levels

Levelling staff

DUMPY LEVEL

Dumpy level

SURVEYING/ 23GET102 -CE/ /J.S.MINIMOL. / AP / CIVIL/ SNSCT

LEVELLING STAFF

PRINCIPLES OF LEVELLING

For accurate work, the distance of BS and FS should be nearly equal. This reduce the error of non-parallelism

THANK YOU…