

## 2.17 30313 SURVEYING (MINE)

### UNIT-1 INTRODUCTION:-

Definition – Objectives – Classification – Principle – Surveying.

### UNIT-2 METHODS OF MEASURING DISTANCES:-

Classification – Instruments – Constructional details – Reasons for incorrect Length of Chain – Ranging – Direct – Indirect – Measuring Distances on level Ground – Sloping Ground – Sources of Errors – Corrections – Problems – Mistakes – Permissible Limits.

### UNIT-3 CHAIN SURVEYING:-

Purpose – Principle – Steps – Reconnaissance – Factors Governing Selection of Stations – Definitions of offset – Baseline – Tie line – Reference sketch – Instruments for setting offsets – Method of Chaining Vision Free Chaining Obstructed – Vision Obstructed Chaining Free – Both Vision and Chaining Obstructed.

### UNIT-4 COMPASS SURVEYING:-

Uses – Types – Sketch – Purpose of parts – Terms – True meridian – Magnetic Meridian – Arbitrary Meridian – Bearing Whole Circle – Quadrantal – F. B – B. B – Methods of Measuring Bearing conversion W.C.B to Q.B, Q.B to W.C.B, Computed Included Angle – Local Attraction – Reasons – solves Problems on Local Attraction – Magnetic Declination & Dip – Open & Closed Traverse – Traversing with Compass and chain – Permissible errors.

### UNIT-5 LEVELLING:-

Definitions – Type of Instruments – Adjustments – Fundamental Lines – Relations – Principles of levelling – Methods – Curvature and Refraction Reciprocal Levelling – Merits – Applicability – Problems – Permissible Errors. Purpose of Subsidence Levelling – Purpose of H.F.L – Contouring – Method of contouring, Interpolation of contours – Terms

### UNIT-6 THEODOLITE:-

Description of Vernier Theodolite – fundamental lines relation between fundamental lines – Temporary and permanent adjustments – Definition of Various terms – Measurement of horizontal angles – repetition, reiteration methods measurement of vertical angle

### Reference Books:

1. Surveying: Kanetkar & Kulkarni Vol. 1
2. Surveying: Punmiya Vol. 1
3. Mine Surveying: S.Ghattak Vol. 1 & 2