

AMMI-4 MINE SURVEYING-I

UNIT-1 INTRODUCTION & DISTANCES AND DIRECTION

- 1.1 Overview of plane surveying (chain, compass and plane table), Objectives,
- 1.2 Principles and classifications.
- 1.3 Direct and indirect ranging, chaining along sloping ground.
- 1.4 Obstacle in chaining, errors and their elimination.
- 1.5 Distance measurement conventions and methods; use of chain and tape,
- 1.6 Electronic distance measurements, Meridians,
- 1.7 Azimuths and Bearings, declination, computation of angle.

UNIT-2 LEVELING AND CONTOURING

- 2.1 Concept and Terminology,
- 2.2 Temporary and permanent adjustments-method of leveling.
- 2.3 Characteristics and Uses of contours
- 2.4 Methods of conducting contour surveys and their plotting.
- 2.5 Methods of plane table, radiations.
- 2.6 Intersection, traversing and resection. 2-point and 3-point problem.
- 2.7 Adjustment and common error in plane table survey.

UNIT-3 COMPUTATION OF AREAS AND VOLUMES

- 3.1 Area from field notes,
- 3.2 Computation of areas along irregular boundaries and area consisting of regular boundaries.
- 3.3 Embankments and cutting for a level section and two level sections with and without transverse slopes,
- 3.4 Determination of the capacity of reservoir, volume of barrow pits.

UNIT-4 THEODOLITE & TACHEOMETRIC SURVEYING

- 4.1 Theodolite, description, uses and adjustments- temporary and permanent,
- 4.2 Measurement of horizontal and vertical angles.
- 4.3 Principles of Electronic Theodolite.
- 4.4 Trigonometrically leveling, traversing.
- 4.5 Stadia and tangential methods of Tachometry.
- 4.6 Distance and Elevation formulae for Staff vertical position.

UNIT-5 SURVEY AND CURVES

- 5.1 Survey dealing with curves, both simple and compound curves.
- 5.2 Designing & setup of curves are dealt in this unit Curves:
- 5.3 Types of curves, design and setting out- simple and compound curves.

UNIT-6 GEODETIC SURVEYING

- 6.1 Geodetic surveying, global positioning systems and introduction to GIS.
- 6.2 Introduction to geodetic surveying,

- 6.3 Total Station and Global positioning system,
6.4 Introduction to Geographic information system (GIS).

Reference Books

- 1 “Surveying (Vol – 1, 2 & 3), by B.C.Punmia, Ashok Kumar Jain and Arun Kumar Jain - Laxmi Publications (P) ltd., New Delhi
- 2 Duggal S K, “Surveying (Vol – 1 & 2), Tata Mc.Graw Hill Publishing Co. Ltd. New Delhi, 2004.

