

# AMMI-12 MINE SURVEYING-II

## UNIT-1 CORRELATION SURVEY

- 1.1 Principles, Classification, Methods, Shaft Plumbing, Assumed Bearing,
- 1.2 Weisback Triangle, Co-planning,
- 1.3 Weis-back quadrilateral, Problems on correlation survey etc. and degree of accuracy.
- 1.4 Orientation of underground net through adits, inclines and shafts.
- 1.5 Depth of shaft. Magnetic and gyroscopic orientation

## UNIT-2 OPENCAST, STOPE & SUBSIDENCE SURVEY

- 2.1 Opencast: Principles, methods and survey network, Calculation of areas and volumes, mid ordinate and average ordinate, trapezoidal method, Simpson method, contour method.
- 2.2 SUBSIDENCE SURVEY: Principles, method and degree of accuracy, underground traversing, setting out gradients in tunnels and adits.
- 2.3 STOPE SURVEYING: Definition, purpose, methods: Tape triangulation, Ray, steeply dipping ore bodies, moderately dipping ore bodies, degree of accuracy.

## UNIT-3 CURVE SETTING

- 3.1 Types of curves, simple and compound curves by linear and angular methods on surface and in the underground.
- 3.2 Requirements and functions of a super elevation and transition curve.

## UNIT-4 MODERN SURVEY

- 4.1 Special Mine surveys-survey of installations of Mine,
- 4.2 EDM & ITS Application, GPS, total station, survey for connecting national grid.
- 4.3 Field Astronomical terms and definitions.
- 4.4 Determination of the meridian Longitude and latitude of a place.

## UNIT-5 PHOTOGRAMMETRY

- 5.1 General principles, Elements of photogrammetry; orientation of photographs, finding heights and distances of ground points from photographs. Gyro theodolite survey.
- 5.2 Elements of Photogrammetry, field astronomy: Principles & Definitions, Determination of true Meridian, Latitude & Longitude & Time

## UNIT VI: PROBLEMS IN MINE SURVEYING.

- 6.1 Dip & fault problems.
- 6.2 Mine plans & sections, Types of plans, preparation and preservation of plans and sections.
- 6.3 Regulations pertaining to mine plans and sections and mine surveying. Duties and responsibilities of surveyors care and precaution in storage statutory responsibilities.

### Reference Books:

1. JJ.Holland K.Wardell "Coal mines series editor E.Mason". Vol – II
2. Statham "Coal Mining Practice" Vol- IV