

AMEV04 SURVEYING

UNIT-1 FUNDAMENTALS AND CHAIN SURVEYING

- 1.1 Definition- Classifications- Basic principles- Mistakes, errors and accuracy.
- 1.2 Equipment and accessories for ranging and chaining- Methods of ranging
- 1.3 Well-conditioned triangles- Errors in linear measurement and their corrections
- 1.4 Obstacles- Traversing- Plotting- applications.

UNIT-2 COMPASS SURVEYING AND PLANE TABLE SURVEYING

- 2.1 Compass- Basic principles- Types- Bearing - Systems and conversions
- 2.2 Sources of errors- Local attraction- Magnetic declination-Dip-Traversing
- 2.3 Plotting- Adjustment of closing error- applications- Plane table and its accessories
- 2.4 Merits and demerits- Radiation – Intersection- Resection
- 2.5 Traversing- sources of errors- applications.

UNIT-3 THEODOLITE SURVEYING

- 3.1 Theodolite- Types- Description-M Horizontal and vertical angles
- 3.2 Temporary and permanent adjustments- Heights and distances
- 3.3 Tangential and Stadia Tacheometry
- 3.4 Subtense method - Stadia constants- Anallactic lens.

UNIT-4 ROUTE SURVEYING

- 4.1 Reconnaissance- Route surveys for highways, railways and waterways
- 4.2 Simple curves- Compound and reverse curves- Setting out Methods- Transition curves
- 4.3 Functions and requirements- Setting out by offsets and angles
- 4.4 Vertical curves- Sight distances.

UNIT-5 HYDROGRAPHIC AND MINE SURVEYING

- 5.1 Tides- MSL- Sounding methods- Three-point problem
- 5.2 Strength of fix- Sextants and station pointer- River Surveys
- 5.3 Measurement of current and discharge- Mine Surveying Equipment
- 5.4 Weisbach triangle- Tunnel alignment and setting out- Transfer of azimuth
- 5.5 Gyro Theodolite - Shafts and Adits.

References Books

- 1 James M. Anderson and Edward M. Mikhail, Surveying, Theory and Practice, 7th Edition, McGraw Hill 2001.
- 2 Bannister and S. Raymond, Surveying, 7th Edition, Longman, 2004.
- 3 S.K. Roy, Fundamentals of Surveying, 2nd Edition, Prentice Hall of India, 2004.
- 4 Arora K.R., "Surveying Vol I & II", Standard Book house, 10th Edition 2008.