

# Syllabus of Surveyor

**Total Question 100**

**Total Marks 100**

**1/ Tools & equipments, scales, Geometrical Construction**

Importance of safety, Use of different instruments & equipments used by Surveyor, their types and uses. Lettering using stencils. Scales-different types, principles. Geometrical construction.

**2/ Classification of Survey, Signs & symbols**

Classification of survey. Common terms used and definitions Conventional signs and symbols. Use of legends.

**3/ Chain Survey**

Linear measuring instruments, Types & principles of chain survey. Field book-types, methods of entry of check lines-its importance. Types of offset and their limit. Types of obstacles in chaining and methods of overcoming them. Errors in chain survey & their remedies, problems in chain survey, degree of accuracy required procedure of inking & coloring.

**4/ Compass Survey**

Use of magnetic needles in survey, compass survey. Technical terms used in compass survey, difference between angles & bearings, magnetic & true meridians, declination and its variations, local attraction, its detection & elimination. Locating details by Barings, traversing methods, methods of determining true meridians & declination, limits of precision required, field book entries. Relaying of old service errors in compass survey. Testing & adjustment of compass.

*12/11/20*

**5/ Plane table Survey**

Plane table survey-merits, demerits and methods Tangent clinometers, Delisle's clinometers & telescopic alidade. Survey maps-care & maintenance of plane table accessories, procedure of plane tabling.

**6/ Leveling**

Leveling, types of staff, permanent adjustment of leveling instruments. Methods of observation, booking, reduction of levels, types of field book, Working out problems on reduction, longitudinal sectioning, cross sectioning etc. Plotting of sections and working profiles establishment of gradient, effects of Ea refraction in leveling, common errors and their elimination, degree of accuracy.

**7/ Contouring**

Contouring-contour interval-selection of contour interval-characteristics of contours-uses of contours-contouring by various methods- interpolation of contours by various methods - drawing of contours-computation of volume-Prismoidal formula & trapezoidal formula. Construction and use of boning rods. Establishment of gradient using Ceylon ghat Tracer, Delisle' Clinometers & Abney level.

**8/ Theodolite Survey**

Theodolite surveying, temporary adjustments of theodolite, reading of verniers, booking readings, permanent adjustments of theodolite. Measurement of horizontal angle by repetition method, reiteration method setting out angles by repetition methods, measurement of vertical angle, measurement of deflection angle, measurements of bearings, prolongation of lines and locating the intersection points of directions. Traversing using theodolite (closed and open), traverse computation determination of consecutive co-ordinates, independent co-ordinates, checks for traverse, balancing of traverse, closing error, preparation of Gale's table, computation of area using co-ordinates, omitted measurements.

*Handwritten signature*

## 9/ Curves

Curves purpose types of curves Simple-compound-reverse-transition elements of simple curve-computation of elements of simple curve-various method for setting out simple curves.

## 10/ Tacheometry & Triangulation

Introduction to tacheometry- advantages and disadvantages- constants of tacheometer and its determination- various method of tacheometry- determination of horizontal and vertical distances by various methods. Technical terms in connection with simple triangulation-base line measurements & its correction.

## 11/ Digital Theodolite

Modern survey instrument and Familiarization Digital theodolite-study of parts-adjustments-measurement of angles by various methods-traversing using digital theodolite (closed and open). Traverse survey of closed and open fields-determination of enclosed areas using total station. Introduction to GPS and its uses-adjustment-determination of co-ordinates. Photogrammetry- terms-terrestrial and aerial photogrammetry.

## 12/ CAD, Estimation, Irrigation :

Introduction to computer aided drafting-advantages- working with CAD-setting limits-drawing lines-using grid and snap-saving work-drawing simple shapes-Exit and quit commands. Editing, adding dimension and text. Editing drawing using various MODIFY commands. Developing simple buildings with CAD. Preparation of estimates for simple buildings. Glossary of terms of building construction, building material and irrigation.

*12/12/20*