

SYLLABUS FOR INSTRUCTOR
(SURVEYOR)



1. **Letter and Numbering:** Details layout of lettering, lines & dimensioning system.
2. **Scales:** Knowledge of different type of scale, determine of R. F. & uses of scales. Use & application of conventional sign & symbol.
3. **Different types of projection views** orthographic, sectional, isometric view.
4. **Introduction of surveying,** types of surveying, use, application principal.
5. Uses of chain/ tape, testing of a chain & correction. Ranging (direct & indirect). Principle of chain survey application. Terms used in chain Survey, Offset – types of offset, limit of offset, Field book – types of field book, entry of field book method of chaining in slopping ground. Calculation of area (regular & irregular figure), knowledge of site plan.
6. Basic terms used in compass survey, Instrument & setting up. Conversion of bearing web to R. B. Calculation of included angle from bearing local attraction, magnetic declination and true bearing, closing error. Adjustment of closing error, precaution in using prismatic compass.
7. **Plane table survey,** principle, merits and demerits, instruments used in plane table, survey setting up the plane table. (Centering, levelling, orientation), Methods of plane table survey (radiation, intersection, resection, traversing), error in plane table survey.
8. **Introduction to levelling –** Types of levelling instrument. Technical terms used in levelling. Temporary & permanent adjustment. Different types of levelling Entry of level book. (Reduced level calculation method) Curvature & refraction effect sensitivity of bubble tube. Common error and their elimination. Degree of accuracy.
9. **Introduction to Theodolite.** Types of theodolite, parts of Theodolite, terms used in Theodolite survey. Temporary adjustment of Theodolite, Angle measurement process. Reading of angels, field book entry of measured angles. Permanent adjustment to Theodolite. Traversing using theodolite (closed & open), traverse computation, determination of consecutive coordinates, independent coordinates, checking & balancing of traverse, preparation of gales, traverse table, computation of area using coordinates, calculation of omitted measurements.
10. **Introduction of tachometry & terms** advantages & disadvantages. Tachometric constants & its determination of horizontal & vertical distances by various methods.
11. **Contouring,** contour interval selection of contour interval, characteristics of contour, uses of contour, contouring by various method. Interpolation of contour by various methods, drawing of contours, computation of volume establishment of gradient by abney level.
12. **Curves,** purposes, Types of curves- simple, compound, reverse, transition, vertical. Elements of simple curve. Various methods for setting out simple, compound, reverse, transition & vertical curve.
13. **Modern survey instruments.** Total station, temporary adjustment of T. S., working procedure of T. S.
14. **Introduction of GIS & GPS.** Elements of GPS/DGPS. Observation principles. Sources of error & handling of error in GPS. Various types of GPS application. Concept and uses of survey software.
15. Specification & uses of various types of building materials, types of foundation, knowledge of RCC works & other construction related items. Procedure to prepare a detail estimate.
16. Knowledge for preparation of topographical map. Knowledge for preparation of cadastral map. Knowledge for preparation of a road project.
17. Basic terms used in railway line project survey, justification criteria for constructing new line, marking process of tentative alignment, selection process of a good alignment. Process of detail survey and final location survey.

SYLLABUS FOR WRITTEN TEST FOR THE POST OF SURVEYOR (CIVIL ENGINEERING)

18. Basic knowledge of Auto CAD

References: - www.nvionline.com, <https://del.gov.in>, <https://bharataskills.gov.in>, <https://sssc.nk.gov.in> & Syllabus of ITI Surveyor Course from SCVT Bihar and of other states

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