SYLLABUS FOR SURVEYOR

1. **Letter and Numbering**: Details layout of lettering, lines & dimensioning system.
2. **Introduction of surveying**, types of surveying, use, application principal.
3. **Scales**: Knowledge of different type of scale, determine of R. F. & uses of scales.
4. **Different types of projection** views orthographic, sectional, isometric view.
5. Use & application of conventional sign & symbol
6. 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.
7. 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.
8. **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.
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 co-ordinates, calculation of omitted measurements.
10. **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.
11. **Introduction of tachometry** & terms advantages & disadvantages. Tachometric constants & its determination of horizontal & vertical distances by various methods.
12. **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.
13. **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.
14. Familiarisation with modern survey instruments. Parts of Total station, temporary adjustment of T. S.., working procedure of T. S.
15. Familiarisation with cadastral map, terms used in cadastral survey, preliminary knowledge for prepare a site plan. Calculation of area by digital planimeter.
16. Types of Surveys for location of a road. Points to be considered during reconnaissance survey. Classification of roads and terms used in road engineering, alignment of roads, relative importance of length of road, height of embankment, depth of cutting and filling, road gradients, super elevation etc

17. Knowledge for preparation of topographical map. Knowledge for preparation of cadastral map. Knowledge for preparation of a road project.
18. Importance of cartographic projection. Uses of various types of cartographic projection for mapping.
19. 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.
20. Introduction to hydrographic survey, practice various methods of water depth measurement process, floe velocity measurement & determination of cross-sectional area of a river. Handling of eco sounder, current meter.
21. Basic terms used in transmission line 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. Use of sag template, various type of tower, construction of tower foundation.
22. 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.
23. 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.
24. Basic knowledge of Auto CAD

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