

**DETAILED SYLLABUS FOR THE POST OF TRADESAMAN – SURVEY IN
TECHNICAL EDUCATION AND SURVEYOR GRADE II IN KERALA WATER
AUTHORITY - DIRECT RECRUITMENT**

(Cat.No.: 418/2023, 683/2023)

(Total Marks - 100)

MODULE: 1

BASIC ENGINEERING DRAWING

(10 Marks)

Drawing Instruments, Drawing sheet, Types of lines, Lettering, Dimensioning, Scales, Geometrical constructions, Conic sections, Projection.

MODULE: 2

CHAIN SURVEY

(12 Marks)

Introduction of Survey, Main divisions, classifications, Principles, Instruments used in Chain survey, Terms used in Chain survey, Ranging, Offsetting, Field book, Errors in Chain survey, Area calculation.

MODULE: 3

COMPASS SURVEY

(12 Marks)

Basic terms, Instruments used, Setting up of Compass, Conversion of bearings from one system to other, Included angles, Local attraction, Dip, Magnetic declination, Closing error.

MODULE: 4

PLANETABLE SURVEY

(5 Marks)

Instruments used, Setting up of Plane table, Methods of Plane tabling, Errors.

MODULE: 5

LEVELLING AND CONTOURING

(15 Marks)

Terms used, Types of Levelling, Temporary and Permanent adjustments, Curvature and Refraction, Sensitivity of bubble tube, Common errors, Contouring, Characteristics of Contours, Interpolation, Computation of Volume, Gradient, Abney level.

MODULE: 6

THEODOLITE SURVEY

(10 Marks)

Types of Theodolite, Parts of Theodolite, Terms used, Temporary and Permanent adjustments, Angle measurement processes, Traversing, Consecutive and Independent co-ordinates, Gales Traverse Table, Terms used in Tacheometry, Tacheometric constants, Horizontal and Vertical distance, Curves, Types of Curves, Elements of Curves.

MODULE: 7 MODERN SURVEY INSTRUMENTS

(8 Marks)

Digital Theodolite, GPS, GIS, Total Station, Cartographic Projection, Hydrographic Survey.

MODULE: 8 AutoCAD

(8 Marks)

Introduction, Basic commands, Tool bars, Function keys and shortcut keys, 2D drafting, knowledge of layout and printing.

MODULE: 9

WORKSHOP CALCULATION AND SCIENCE

(12 Marks)

Units, Fractions, Square Root, Ratio and Proportions, Percentage, Mensuration, Trigonometry, Material science, Mass, Weight and Density, Speed and Velocity, Work, Power and Energy, Heat and Temperature, Basic Electricity, Simple Machines.

MODULE: 10

BUILDING MATERIALS AND CONSTRUCTION

(8 Marks)

Building Stones, Bricks, Lime, Timber, Tiles, Sand, Mortar, Concrete, R C C, Foundation, Irrigation – Terms used in irrigation, Factors affecting duty of water, measures to improve duty of water, Roads – Important terms, Classification, Road gradient, Estimation – Terms used, Types of Estimate.

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.