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# ADVANCE SURVEYING AND LEVELLING

By Rangwala

Edition : 8<sup>th</sup> Edition : 2025 ISBN : 9789385039591 Binding : Paperback Pages : 336 + 16 = 352 Size (mm) : 235 × 14 × 170 Weight : 480 g

# **ABOUT THE BOOK**

This Eighth revised and enlarged edition provides an up-to-date knowledge of the *advanced topics on Surveying and Levelling.* The subject matter is canvassed along with theory, variety of examples, various types of latest survey techniques like Remote Sensing, Image Interpretation Technique, etc.; Modern Survey Instruments used in the field like - Digital or Micrometer Theodolite, Total Station, Tellurometer, Geodimeter, etc.; Permanent Adjustments of Levels, Theory of Circular-Transition-Vertical and Compound Curves, Field Astronomy, Trigonometric and Tacheometric Surveying, Photographic and Hydrographic Surveying, Setting out of different survey works like Dams, Bridges, Culverts, Tunnels, Buildings, etc. are deeply discussed in this part of book. The subject matter is expressed in a simple language and practical manner. The treatment is clear, methodical as well as interesting and easy to follow.

From the earlier seventh edition, the single volume is now split into two separate independent books:

Book I : Basic Surveying and Levelling

Book II : Advance Surveying and Levelling.

This division has been made to better cater to the diverse needs of students, professionals, and educators in the field of civil engineering, land surveying and related disciplines.

This Advance Surveying and Levelling is arranged in the chapters like: Theodolite traversing, Trigonometric levelling, Tacheometric surveying, Permanent adjustments of levels, Circular curves, Transition curves, Vertical curves, Field astronomy, Hydrographic surveying, Photographic surveying, Modern techniques of surveying, Theory of errors, Setting out works.

Appendix I containing 100 *Multiple Choice Questions (MCQ)* and Appendix II containing *Abbreviated Terms* used in this book are given at the end of the book.

The above chapters now contains:

- \* 176 Self-explanatory and neatly drawn sketches
- \* 97 Solved problems
- \* 25 Useful tables
- \* 220 Questions at the end of the chapters
- \* 100 Multiple Choice Questions (MCQ).

It is hoped that the book in the present form would satisfy the need of the Engineering students preparing for Degree Examinations of all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. It should also prove of interest to the practising professionals.



REVISED

& ENLARGED

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- 2: TRIGONOMETRIC LEVELLING
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- 4: PERMANENT ADJUSTMENTS OF LEVELS
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Determining the level of the top of an object, when its base

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- (1)Sidereal time
- (2)Solar apparent time
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Bed profile

Shore details

Shore line survey

Marine surveying

Soundings

Vertical control

Sounding boat

Lead lines Sounding machine

Fathometer

Location of soundings

By cross rope

Sounding rods or poles

By intersecting ranges

By one angle from the shore and one from the boat

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#### ADVANCE SURVEYING AND LEVELLING DETAILED CONTENTS

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Co-ordinates from the site grid

Offsets from the existing building

APPENDIX I MULTIPLE CHOICE QUESTIONS (MCQ)

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Setting out bridges

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