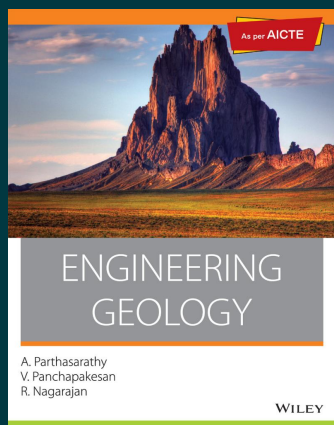




Engineering Geology, As per AICTE

By A. Parthasarathy, V. Panchapakesan, R. Nagarajan

Paperback

9788126509461

₹1,499.00

Pages: 532

Description

This book contains all the essential ingredients required for the students of Geology and Engineering at Bachelors and Masters levels in addition to all those desirous of pursuing various projects in Earth Sciences. Keeping in view the recent developments in Geology, every chapter has been enriched with detailed illustrations and examples that provide practical understanding to readers. In addition to elucidating on the basic concepts and ideas of geology, the book depicts hazards of various nature and environmental changes. The book is structured in a clear and logical manner to cater the academic and practical requirements of geoscientists and engineers.

About the Author

A. Parthasarathy, V. Panchapakesan, R. Nagarajan

Prof. A. Parthasarathy graduated from the Presidency College, University of Madras in 1945 and joined the faculty. He joined the faculty of the Indian Institute of Technology, Bombay

Table of Contents

Foreword

Preface

About the Authors

Acknowledgements

I Basic Geosciences

1. Geological Concepts and Data

1.1 Introduction

1.2 Solar System

1.3 Earth and Its Origin

2 Geological Processes on the Earth's Surface

2.1 Introduction

2.2 Weathering and Soil Formation

2.3 Geological Work of Wind

2.4 Geological Work of Running Water

2.5 Glaciers

2.6 Oceans and Seas

3 Materials of the Earth's Crust

3.1 Introduction

3.2 Mineralogy

3.3 X-Ray Methods of Mineral Identification

3.4 Select Rock-Forming Minerals

3.5 Petrology

4 Disposition of Rocks

4.1 Introduction

4.2 Forms of Intrusive Rocks

4.3 Planar and Linear Features

4.4 Geological Structures

4.5 Geological Maps

II Engineering Geology and Allied Fields

5 Geomorphology and Hydrogeology

5.1 Introduction

5.2 Geomorphology

5.3 Hydrogeology

5.4 Geothermal Springs

6 Natural Hazards and Environment

6.1 Introduction

6.2 Natural Hazards

6.3 Environmental Hazards

7 Clay Mineralogy

7.1 Introduction

7.2 Classification of Clay Minerals

7.3 Clay Mineral Groups

7.4 Crystal Structure of Clay Minerals

7.5 Clay Mineral Properties

7.6 Thermal Methods

7.7 Base Exchange Capacity

7.8 Industrial Applications

7.9 Origin of Clay

7.10 Clay Mineral Equilibria

8 Remote Sensing and Geographic Information System

8.1 Introduction

8.2 Aerial Photographs

8.3 Orbital Satellites

8.4 Spectral Reflectance

8.5 Visual Interpretation of Satellite Image

8.6 Airborne Survey

8.7 Geographical Information System

8.8 Applications

9 Quarrying, Excavation and Drilling

9.1 Introduction

9.2 Surface Investigations

9.3 Sub-Surface Investigations

10 Geophysical Methods

10.1 Introduction

10.2 Resistivity Methods

10.3 Seismic Methods

11 Geotechnical Aspects of Soils

11.1 Introduction

11.2 Soil Investigations

11.3 Soil Engineering Properties

11.4 Soil Classification

III Rock Properties, Behaviour and Applications

12 Geo-Engineering

12.1 Introduction

12.2 Stress and Strain in Rocks

12.3 Intact and In Situ Rocks

12.4 Evaluation for Suitability of Site

12.5 Weathering

12.6 Physical and Engineering Properties

12.7 Discontinuities, Joints and Bedding

13 Engineering Rock Classifications

13.1 Introduction

13.2 Intact Rock Classifications

13.3 Rock Mass Classifications

13.4 Significance of Q-System and RMR Studies

14 Engineering Behaviour of Rocks

14.1 Introduction

14.2 Hard Rocks

14.3 Soft Rocks

14.4 Engineering Properties of Select Rocks

15 Dams and Reservoirs

15.1 Introduction

15.2 Dam Site Investigations and Data Acquisition

15.3 Types of Dams

15.4 Properties of Rocks and Soils of Dam Sites

15.5 Major Criteria for the Selection of Dam Sites

15.6 Failure Risks and Remedial Measures

16 Tunnels and Underground Openings

16.1 Introduction

16.2 Terminology and Prime Requirements for Tunnelling

16.3 Geological and Structural Guidelines

16.4 Tunnelling and Strata Disposition

16.5 Arching and Lining of Tunnels

16.6 Rock Loads and Support System

16.7 Rock Classification – Application to Tunnelling

16.8 An Integrated Approach – Tunnel Geology and Engineering Rock Classification

17 Landslides

17.1 Introduction

17.2 Landslide – Definition and Characteristics

17.3 Lithology, Structure and Stratigraphy

17.4 Classification of Slides

17.5 Failure and Slide Type

17.6 Causes of Failure

17.7 Slope Stability

17.8 General Observations

17.9 Case Studies

18 Rocks in Construction

18.1 Introduction

18.2 Building Stones

18.3 Aggregates

18.4 Foundations

18.5 Grouting

19 Case Studies

19.1 Dams and Reservoirs

19.2 Tunnels

IV State-Wise Indian Geological Set-Up

20 Geology of India

20.1 Introduction

20.2 Physiography of India

20.3 Indian Stratigraphy

Summary
Objective-Type Questions
Review Questions
Answers
Conversion Table
References
Bibliography
List of Permissions
Index

To purchase this product, please visit:

<https://www.wileyindia.com/engineering-geology-as-per-aicte.html>



Scan to buy