CHAPTER 23

GEOLOGY

Doctoral Theses

186. CHAUDHRY (Manoj)
Surface and Subsurface Geology of Delhi with Special Reference to Liquefaction and Seismic Hazard Studies.
Supervisor : Prof. C. S. Dubey
Th 16339

Abstract

Deals with geological studies of surface and subsurface of Delhi with an objective to generate a 3-dimensional model of geotectical parameters. Creates a liquefaction and seismic hazard map classifying the study area into areas of varying seismic vulnerability. Seismic hazards map was created by deriving liquefaction susceptibility considering the two new-found NW-SE faults in addition to the six seismo-tectonic events used for estimation of PGA values earlier. The study indicated that about 20-25% of the toal area within flood plains of Yamuna and east of it falls in Very High Hazard category whereas another 25% indicated High Hazard. Rest of the blocks mostly in Western and Southern part showed low to moderate hazard.

Contents

1. Introduction. 2. Regional geology. 3. Petrographic studies. 4. Geomorphology & tectonics. 5. Geophysical survey. 6. Subsurface modeling. 7. Liquefaction and seismic Hazard. 8. Conclusion. References and annexure.

187. LAISHRAM BHAGYAPATI DEVI
Early Neogene Radiolaria of Andaman - Nicobar Islands Northeast Indian Ocean.
Supervisor : Prof. V. Sharma
Th 16338

Abstract

Neogene sequences of Andaman-Nicobar abound in siliceous and calcareous fossil micro-fauna and flora. The present study is undertaken on Radiolaria, a group of siliceous microfauna. For this purpose initially, ninty-eight samples from six stratigraphic sections located on three islands were processed for the quantitative study of radiolarians. However, 56 samples were finally used as the rest of the samples did not yield radiolarians enough for quantitative study because of poor occurence of the microfossils. The study was conducted with the aim of establishing radiolarian biostratigraphy of the studied sequence, identification of radiolarian events, documentation of radiolarian taxa, identification of assemblages by quantitive methods and paleoclimatic and paleoceanographic implications of the radiolarian assemblages and for establishing an integrated radiolarian - foraminiferal biostratigraphy.

Contents

1. Introduction. 2. Study area, materials and methods. 3. Systematics of radiolaria. 4. Radiolarian biostratigraphy and events. 5. Radiolarian assemblages: paleoceanographic and paleoclimatic implacations. 6. Planktic foraminiferal biostratigraphy. 7. Conclusion.

188. PANDEY (Sanjay Kumar)
Petrology and Geochemistry of the MORB from the Fast Spreading Southern East Pacific Rise.
Supervisors : Prof. J. P. Shrivastava & Prof. G. S. Roonwal
Th 16335

Abstract

Deals with Petrographic study of MORB to find out microstructural and mineralogical variations; minaral chemical study to understand mechanism within the crystallizing minerals and their relationship with upper mantle fractionation and major and trace element compositional study to understand the nature of magmatism, petrogenesis of MORB and to understand mantle heterogeneity.

Contents

1. Introduction. 2. Mid-Oceanic ridges. 3. Petrography of MORB. 4. Mineral chemistry of MORB. 5. Major elements geochemistry. 6. Trace elements geochemistry. 7. Petrogenesis. 8. Conslusion.

189. PREETI SINGH
Petrologic and Geochemical Studies of Igneous and Metamorphic Rocks from the Tso Morari, SE Ladakh.
Supervisors : Prof. P. K. Verma and Prof. T. Ahmed
Th 16336

Abstract

High pressure (HP) and ultra-high pressure metamorphic (UHPM) rocks, viz., eclogites are considered to be one of the most important indicators of the deep crustal processes. Their studies provide information about the subduction and exhumation processes during an orogeny. In the Himalayas, there are only few locations where UHPM rocks have been reported viz., Kahagn valley, Pakistan and adjacent Neelum valley; Ama Drime, Nepal and the Tso Morari Crystallines (TMC). The present study is a detailed study of one such occurrence, i.e. the Tso Morari Crystallines (TMC).

Contents

1. Introduction. 2. Petrography. 3.Ultra high-pressure metamorphism (UHPM) and eclogites. 4. Fluids and their role in UHP metamorphism. 5. Geochemistry. 6. Mineral chemistry. 7. Thermobarometry. 8. Metamorphism. 9. Summary and conclusion.

190. SINGH (Kshetrimayum Krishnakanta)
Hydrogeological Studies of the Markanda River Basin in the Himachal Pradesh-Haryana Region, NW India.
Supervisor : Prof. V. N. Bajpai
Th 16337

Abstract

Attempts to describe the hydrogeologic scenario of the Markanda river basin for future groundwater management. Provides an integrated regional hydrogeologic picture of the Markanda river basin and would certainly be helpful in the further management of water resources in the present context.

Contents

1. Introduction. 2. Hydrogeomorphic classification using satellite imageries and its relation to water table mapping. 3. Morphometric analysis for delineation of areas of uplift and

subsidence in relation to aquifer disposition. 4. Vertical electrical resistivity soundings (VES) for delineation of subsurface aquifers and finding missing stream links. 5. Assesment of groundwater quality, hydrochemical facies and evolution of shallow aquifer waters. 6. Summary and conclusions.

M.Phil Dissertations

191. ANAND (Mayank)
Seismic Vulnerability Assessment of Patna City.
Supervisor : Dr. S. K. Singh

192. ISHWAR
Application of Geophysical Data and Remote Sensing Technique in Hydrogelogical Studies of Mahenragarh District of Haryana.
Supervisor : Dr. Vikrant Jain

193. SINGH (Ravindra Pratap)
Advent of Slope Stability Technique using Geospatial, Geotechnical and Geophysical Survey in Parts of Lesser Himalaya (Udhampur District) Jammu & Kashmir.
Supervisor : Prof. C. S. Dubey

194. VERMA (Neelam)
Tectonic and Climate Controls on Geodynamic Evolution of Northwest Himalaya (Bhagirathi and Alaknanda Valleys).
Supervisor : Prof. C. S. Dubey