M.D.UNIVERSITY, ROHTAK
M.Sc(Final) Geology - 2010-11

Note : The examination will consist of four theory papers, each of three hours duration, and two practical examination, each of three hours duration and the examination of Dissertation (Geological field report) with Viva-voce i.e. geological surface/sub- surface mapping.

Note : The candidate will have to study the following three compulsory papers and one optional paper.

III - SEMESTER	Max. Marks	IA	Teaching Hrs. Per Week
Paper 301 - Stratigraphy	80	20	4 and half
Paper 302 - Ore genesis and Indian Mineral deposits	80	20	-do-
Paper 303 - Engineering Geology	80	20	-do-
Paper 304 - Optional	80	20	-do-
Paper 305 - Economic Geology Practical	50		-do-
Paper 306 - Engineering Geology and Hydrogeology Practical	50		-do-
Paper 307 - Dissertation	----		-do-
Total	500		36

Note:- The candidate will opt for one of the following papers.

(i) Sedimentology
(ii) Advance tectonics and Himalayan Geology.
(iii) Environmental Geology.

IV - SEMESTER	Max. Marks	IA	Teaching Hrs. Per Week
Paper 401 - Palaeontology	80	20	4 and half
Paper 402 - Ore genesis and Indian Mineral deposits	80	20	-do-
Paper 403 - Hydrogeology	80	20	-do-
Paper 404 - Optional	80	20	-do-
Paper 405 - Economic Geology Practical	50		-do-
Paper 406 - Engineering Geology & Hydrogeology Practical		50	-do-
Paper 407 - Dissertation		100	-do-
Total		600	36

Note:- The candidate will opt for one of the following papers.

(i) Petroleum Geology.
(ii) Advance Tectonics and Himalayan Geology.
(iii) Environmental Geology.

Note : Dissertation (Field Work) :-

(i) Each student shall be required to go for a field work to a suitable area for geological mapping i.e. surface/sub-surface for minimum one weeks in a type geological area under the supervision of the teachers of the department.

(ii) The Dissertation will be submitted normally at the end of second semester and will be examined along with the practical papers.

The procedure of award of Internal Assessment will be as under:-

I - The marks of internal assessment may be split as under:

(A) One class tests of 10 marks. The class test will normally be held in the months of September for IIIrd Semester and in the months of April for IVth Semester.

(B) Assignment/term paper & Presentation 5 marks

(C) Attendance 5 marks

Below 65%	0 marks
65% to 75%	2 marks
76% to 85%	3 marks
86% to 90%	4 marks
Above 90%	5 marks

1. The record of internal assessment be kept by the HOD/Principal concerned for three months only.
2. Each Department/College concerned may form a committee to deal with complaints, if any, in this regard.
3. The test of internal assessment shall be conducted by the Department/College concerned at their own level without any financial liability on the University and the student shall use 8 pages answer sheets which will be provided by the office of Dean Academic Affairs for University Teaching Departments & P.G. Regional Centre Rewari only. The words M.D.University, Rohtak (for internal test) be fabricated on the answer sheet by the University Press for Departments and PGRC, Rewari. Colleges shall arrange such answer sheets of 8 pages at their own level.

IIIRD SEMESTER - PAPER - 301
STRATIGRAPHY

Theory Marks: 80
Periods/ Week: 4 and Half hrs. Time: 3 Hrs.

Note:- In all nine questions will be set by the examiner, selecting two questions from each unit. The student will attempt any five questions, selecting at least one question from each unit. Question No. I will be compulsory and will have five to seven parts covering whole of the syllabi. All questions carry equal marks.

UNIT - I

Stratigraphic principles and practice : Basic principles and definition stratigraphic classification and nomenclature. Stratification and stratigraphic columns. Lateral variation and facies. Stratigraphic correlation. Orogenic succession.

Indian Stratigraphy : Review of chief structural and stratigraphical features of Indian sub-continent. Structural and tectonic history of Indian sub-continet (Aravalli, Easternghats, Satpura and Maha nadi strike trends and their relative ages). Structure of Himalayas.

Archean Groups : Distribution in peninsular and extrapeninsular regions. Classification and Correlation of Dharwars.

UNIT - II

Cuddapah and Vindhyan system : Distribution and geological succession in Peninsular India. Age and correlation of Vindhyans.

Palaeozoic group : Distribution, geological succession and fauna of each. Age of the saline series.

UNIT - III

Gondwana Group : Distribution, geological succession and classification, fauna and flora. Age limits and structure of Gondwana basins. Palaeogeography.

Mesozoic group : Distribution, geological succession, classification, fauna and flora of triassic of spiti, Jurassic of Kutch and cretaceous of Trichinopoly.

UNIT - IV

Deccan Traps : Distribution, geological succession, petrology and alteration of traps. Lameta beds. Inter-trappeans and infra trappeans age.

Tertiary group : Break up of Gondwana land. Himalayan orogeny. Distribution, succession and fauna of each of the systems.

Siwalik system : Distribution, succession, conditions of sedimentation, fauna and correlation.

BOOKS RECOMMENDED

1. Geology of India and Burma by D.N. Wadia, McMillan.
2. Goodwin, A.M. 1991 : Precambrian Geology : The Dynamic Evolution of Continental Crust. Academic Press.
3. Boggs, Sam Jr., 1995 : Principles of Sedimentology and Stratigraphy, Prentice Hall.
4. Brenner, R.E. and MeHargue, T.R., 1998 : Integrative Stratigraphy : Concepts and Applications Prentice Hall.
5. M.S. Krishan : Geology of India.

.IVth SEMESTER - PAPER - 401
Palaeontology

Theory Marks: 80
Periods/ Week: 4 and Half hrs.
Time: 3 Hrs.

Note:- In all nine questions will be set by the examiner, selecting two questions from each unit. The student will attempt any five questions, selecting at least one question from each unit. Question No. I will be compulsory and will have five to seven parts covering whole of the syllabi. All questions carry equal marks.

UNIT - I

Fossils, their nature, conditions of fossilisation, mode of preservation and uses. Detailed morphology, classifiction and geological history of Brachiopods, Lamellibranchs and Gastropods.

UNIT - II

Morphology, classification and geological history of echinoderms and foraminifera.

Evolutionary history of Man, Horse and Elephant.

UNIT - III

Morphology, classification, geological history and evolution of Trilobites, Graptolites and Ammonites.

Principal groups of vertebrates with emphasis on Gondwana and Siwalik fauna.

UNIT - IV

Plant fossils : Flora of lower and upper Gondwana, its significance and distribution.

Micropalaeontology : It importance with special reference to foraminifera, their ecology and palaeoechology.

BOOKS RECOMMENDED

1. Geology of Indian and Burma by D.N. Wadia.
2. Goodwin, A.M. 1991 : Precambrian Geology : The Dynamic Evolution of Continental Crust. Academic Press.
3. Woods, H.Paloentology.
4. Moore, Lalicker & Fischer : Invertebrate Fossils.

IIIRD SEMESTER - PAPER - 302

Ore genesis & Indian Mineral Deposits

Theory Marks: 80
Periods/ Week: 4 and Half hrs. Time: 3 Hrs.

Note:- In all nine questions will be set by the examiner, selecting two questions from each unit. The student will attempt any five questions, selecting at least one question from each unit. Question No. I will be compulsory and will have five to seven parts covering whole of the syllabi. All questions carry equal marks.

UNIT - I

Ore deposits & ore minerals : Classification of ore deposits, magma and its relation to mineral deposits, orthomagmatic deposits, pegmatic deposits, Pyromagmatic deposits, hypothermal, mesothemal and epithermal deposits : Processes of formation of mineral deposits : Magmatic concentration - early and late magmatic deposits.

UNIT - II

General form, structures & textures of mineral deposits, control of mineralisation; Structural and stratigraphic:Geological thermameters, metallogenetic epochs & provinces.

Secondary Enrichment : Oxidation, solution and precipitation in the zone of oxidation & supergene sulphide enrichment.

UNIT - III

Deposits formed by the processes of Mechanical concentration. Weathering products and residual deposits. Metasomatism and metamorphic deposits.

Hydrothermal deposits : Cavity filling and replacement deposits.

UNIT - IV

Mode of occurrence of ore bodies - morphology & relationship of host roccks. Textures, paragenesis & zoning of ores.

Fluid inclusion in ores : principles, assumptions, limitations and applications.

Mode of occurrence, association & distribution of atomic minerals in India. Atomic minerals as a source of energy.

BOOKS RECOMMENDED

1. Craig, J.M. & Vaughan, D.J., 1981 ; Ore Petrography and Mineralogy. John Wiley.
2. Evans, A.M., 1983 Ore Geology and industrial Minerals, Blackwell.
3. Guilbert, J.M., and Park, Jr. C.F., 1986 : The geology of ore Deposits. Freeman.
4. A.M. Bateman : Principles of Economic Mineral Deposits.

IVth SEMESTER - PAPER - 402
Ore genesis & Indian Mineral Deposits

Theory Marks: 80
Periods/ Week: 4 and Half hrs. Time: 3 Hrs.

Note:- In all nine questions will be set by the examiner, selecting two questions from each unit. The student will attempt any five questions, selecting at least one question from each unit. Question No. I will be compulsory and will have five to seven parts covering whole of the syllabi. All questions carry equal marks.

UNIT - I

Mineralogy, genesis, uses and Indian distribution of ore minerals related to iron, manganese, chromium, copper, lead & zinc, aluminium, gold & molybdenum.

UNIT - II

Study of origin, mode of occurrence, use and Indian distribution of - Mica, Asbestos, Baryte, Gypsum, Apatite, Beryl, Garnet, kyanite, sillimanite & Andalusite and Talc.

UNIT - III

Study of Mineralogy, Indian distribution of important non metals related to refractory, fertilizer, cement, Abrasive & gem stone Indsustry.

UNIT - IV

Definition & origin of coal, foundamentals of coal petrology, peat, lignite, bituminous and Anthracite coal. Geological and geographical distribution of coal deposits in India.

Petroleum : Composition, origin and migration of oil and gas, oil bearing basins of India. Geology of productive oil fields of India.

BOOKS RECOMMENDED

1. A.M. Bateman : Principles of Economic Mineral Deposits.
2. W.L. Lindgreen : Mineral Deposits.
3. J. Coggin Brown and A.K. Day, Indian Mineral Wealth.

IIIRD SEMESTER - PAPER - 303
Engineering Geology

Theory Marks: 80
Periods/ Week: 4 and Half hrs. Time: 3 Hrs.

Note:- In all nine questions will be set by the examiner, selecting two questions from each unit. The student will attempt any five questions, selecting at least one question from each unit. Question No. I will be compulsory and will have five to seven parts covering whole of the syllabi. All questions carry equal marks.

UNIT - I

Engineering Geology : Introduction, application of geology to engineering and coordination between the two discipline. Engineering properties of rocks. Effects of geological structures. Rocks in foundation materials. Rock defects, treatments and grouting. Clay minerals and their properties. Engineering behaviour of clays and soils.

UNIT - II

Landslides : Definition, classification, causes and stability of hill slopes.

Soils : Formation of soils, soil profile, soil types of India, soil organisation and conservation. Elements of soil mechanics.

UNIT - III

Dams and reservoirs : Introduction, classification according to use, classification according to hydraulic design and classification according to material. Types of dams; criteria for the selection of a dam site. Forces acting on a dam.

UNIT - IV

Tunnels : Their types, Alignment of tunnel in relation to geological air fields. Problems of their construction in mountainous regions. Bridge abutments. Geology of aggregates, pozzolanic materials; rocks, gravels, sand, clays and construction materials. Elements of sub-surface geological investigation.

BOOKS RECOMMENDED

1. Krynine, D.H., and Judd, W.R., 1998 : Principles of Engineering Geology. C.B.S Edition.
2. Dr. Vinod Aggarwal & Dr. Mukesh Kumar Jagetia : Introduction to geological and Mining environment and related issues. Aravaili Reasearch & Development Society, Udaipur.

IVth SEMESTER - PAPER - 403
HYDROLOGY

Theory Marks: 80
Periods/ Week: 4 and Half hrs. Time: 3 Hrs.

Note:- In all nine questions will be set by the examiner, selecting two questions from each unit. The student will attempt any five questions, selecting at least one question from each unit. Question No. I will be compulsory and will have five to seven parts covering whole of the syllabi. All questions carry equal marks.

UNIT - I

Hydrology : Introduction, definition, origin and vertical distribution of ground water. Hydrological cycle, precipitation, evapotranspiration, infiltration and surface run off. Geological formations as aquifers. Types of Aquifers, Springs & Geysers.

Ground water flow, Darcy's law and its range of validity, steady & unsteady flow.

UNIT - II

Hydrological properties of water bearing materials : Porosity, permeability, transmissibility and storage coefficient. Principles of ground water occurrence; occurrence of ground water in Igneous, sedimentary and metamorphic rocks. Confined and unconfined ground water.

UNIT - III

Ground water development : Surface Investigation of ground water, prospecting for ground water, construction, design and development of water wells. Hydraulics of well : Water table and artesian well. Pump test analysis and determination of aquifer characteristics. Theory of image well. Leaky aquifer & partially penetrating wells. Relation of yield to drawdown and diameter. Ground water level fluctuation : Secular & seasonal variations, stream flow and ground water levels, fluctuation due to evapotranspiration, fluctuation due to meteorological phenomena, fluctuation due to tides, external bodies & Earth quakes.

UNIT - IV

Artificial recharge of ground water : Methods of artificial rechage. Fresh & salt water relationship in coastal area. Ground water provinces of India.

Quality of ground water : Sources of salinity, ground water samples, measures of water quality, chemical analysis, physical analysis bacterial analysisl. Water quality criteria. Base exchange. Deterioration of ground water quality. Temperature.

BOOKS RECOMMENDED

1. Todd. D.K., 1980 : Groundwater Hydrology. John Wiley.
2. Davies, S.N. & De Wiest, R.J.M., 1966 : Hydrology. John Wiley.
3. Fetter, C.W., 1990 : Applied Hydrogeology, Merill Publishing.
4. Raghunath, N.M., 1982 Ground Water. Wiley Eastern.
5. Karanth, K.R. 1987 : Groundwater Assessment. Development and Management. Tata McGraw Hill.

IIIRD SEMESTER - PAPER - 304

Sedimentology

Theory Marks: 80
Periods/ Week: 4 and Half hrs.
Time: 3 Hrs.

Note:- In all nine questions will be set by the examiner, selecting two questions from each unit. The student will attempt any five questions, selecting at least one question from each unit. Question No. I will be compulsory and will have five to seven parts covering whole of the syllabi. All questions carry equal marks.

UNIT - I

Earth surface system : The study of sediments, liberation and flux of sediments; Processes of transportation and generation of sedimentary structures.

Sedimentary environment : Continental, alluvial, fluvial, Lacustrine, desert, aeolian and glacial sedimentary system. Shallow coastal clastic, marine and continental evaporites, shallow water corbonates.

UNIT - II

Palaeocurrent basin analysis : Cross-bedding and linear structures and paleocurrent studies.

Evolution of sedimentary basins : tectonics and sedimentation, sedimentary domains and their classification, the geosynclinal cycle.

Facies concepts : Sedimentary facies, the operational concept of facies.

UNIT - III

Properties, classification and petrography of various sedimentary rocks.

Lithification & Diagenesis : Cementation & decementation, Authigenesis, Diagenetic Differentiation, Diagenetic metasomatism, interastatal solutions, compaction.

UNIT - IV

Sedimentary texture : Texture of clastic rocks - shape, roundness, surface texture, fabric & packing, porosity & permeability. Texture of non-clastic (chemical) sediments.

Sedimentary structures : Introduction and classification, mechanical (primary) structures and chemical (Secondary structures) organic structures. Principles and methods grain size and shape analysis. Techniques of heavy mineral separation, heavy mineral suits and provinces.

BOOKS RECOMMENDED

1. Hoison G.D. and Tiratsoo, E.N. 1985 : Introduction to Petroleum Geology. Gulf Publ. Houston, Texas.
2. Selley R.C. 1988 : Elements of Petroleum Geology. Academic Press.
3. F.J. Petti John : Sedimentary rocks.
4. A.V. Corrozzi, Microscopic Sedimentary Petrography.

IVth SEMESTER - PAPER - 404

Petroleum Geology

Theory Marks: 80
Periods/ Week: 4 and Half hrs. Time: 3 Hrs.

Note:- In all nine questions will be set by the examiner, selecting two questions from each unit. The student will attempt any five questions, selecting at least one question from each unit. Question No. I will be compulsory and will have five to seven parts covering whole of the syllabi. All questions carry equal marks.

UNIT - I

Introduction, composition and occurrence of petroleum - mode of occurrence, surface and sub-surface occurrences, oilpools, fields and provinces.

Origin of Petroleum : Inorganic & organic origin, transformation of organic matter in to Kerogene, thermal cracking of kerogene.

Migration & accumulation of petroleum : Short or long migration. Primary migration and secondary migration.

UNIT - II

Characteristics of reservoir rocks : Reservoir rocks, classification, nomenclature fragmental, chemical and miscellaneous, Marine & non-marine reservoir rocks, reservoir pore spaces - porosity & permeability.

Reservoir Traps: Introduction, General, structural, stratigraphic and combination traps.

UNIT - III

Reservoir fluids : Water, oil and gas.

Surface geological methods : Prospecting for oil and gas, drilling methods, drilling fluids, sub-surface sampling and examination of well-cuttings, interpretation and correlation of well logs, methods of estimation of oil and natural gas reserves.

UNIT - IV

Petroleum provinces : Oil and gas fields of the world. Sedimentary basins and oil fields of India, oil prospects in India, position of oil and natural gas in India, future prospects and economic scenario.

BOOKS RECOMMENDED

1. Hoison G.D. and Tiratsoo, E.N. 1985 : Introduction to Petroleum Geology. Gulf Publ. Houston, Texas.
2. Tissot, B.P. and Welte, D.H., 1984 : Petroleum Formation and Occurrence. Springer Verlag.
3. A.V. Corrozzi, Microscopic Sedimentary Petrolography.
4. A.I., Levorsan, Petroleum Geology.

IIIRD SEMESTER - PAPER - 304
ADVANCED TECTONICS AND HIMALAYAN GEOLOGY

Theory Marks: 80
Periods/ Week: 4 and Half hrs. Time: 3 Hrs.

Note:- In all nine questions will be set by the examiner, selecting two questions from each unit. The student will attempt any five questions, selecting at least one question from each unit. Question No. I will be compulsory and will have five to seven parts covering whole of the syllabi. All questions carry equal marks.

UNIT - I

Earth movements and their influence on sedimentation. Study rocks deformation continuous and discontinuous. Rock displacements.

UNIT - II

Deformations of non-tectonic origin. Kinematic interpretation of tectonic deformations. Tectonics of flow. Dynamic and mechanical interpretations.

UNIT - III

Mechanism of over thrusts and nappe structures. Gravitational tectonics. Rift and Wrench fault systems.

UNIT - IV

Orogeny, characteristics of various orogenies. Alpine and Himalayan orogenies and tectonic approach to continental drift. Review of various theories of mountain building. Growth of continents.

BOOKS RECOMMENDED

1. Himalayas by Gansser.

IVth SEMESTER - PAPER - 404
ADVANCED TECTONICS AND HIMALAYAN GEOLOGY

Theory Marks: 80
Periods/ Week: 4 and Half hrs. Time: 3 Hrs.

Note:- In all nine questions will be set by the examiner, selecting two questions from each unit. The student will attempt any five questions, selecting at least one question from each unit. Question No. I will be compulsory and will have five to seven parts covering whole of the syllabi. All questions carry equal marks.

UNIT - I

Island arcs and oceanic trenches. Geological cycles. Drainage patterns and its relation to the tectonics.

UNIT - II

Structural and tectonic units of earth's crust. Detailed study of the structural and tectonic history of India.

UNIT - III

The wider frame of Himalaya. Geological history of Himalaya. Regional history of Himalaya. Regionsl structural pattern of Himalaya.

UNIT - IV

Study of various tectonic elements of Himalaya. Geology and structure of the Himalayan belts of Kashmir, Himachal, Garhwal, Kumaon, Nepal, Kikkim-Bhutan and Nefa.

BOOKS RECOMMENDED

1. Himalayas by Gansser.

IIIRD SEMESTER - PAPER - 304
ENVIRONMENTAL GEOLOGY

Theory Marks: 80
Periods/ Week: 4 and Half hrs.
Time: 3 Hrs.

Note:- In all nine questions will be set by the examiner, selecting two questions from each unit. The student will attempt any five questions, selecting at least one question from each unit. Question No. I will be compulsory and will have five to seven parts covering whole of the syllabi. All questions carry equal marks.

UNIT - I

Time scales of global changes in the ecosystems and climate. Impact of circulations in atmosphere and oceans on climate, rainfall and agriculture.

UNIT - II

Carbon di-oxide in atmosphere, limestone deposits in the geological sequence, records of palaeotemperatures in ice cores of glaciers. Global warming caused by CO_2 increase in present atmosphere due to indiscrete exploitation of fossil fuels, volcanic eruptions and afforestation.

UNIT - III

Cenozoic climate extremes, evolution of life, especially the impact on human evolution. Impact assessment of degradation and contamination of surface water and ground water quality due to industrialization and urbanization.

UNIT - IV

Water logging problems due to the indiscrete construction of canals, reservoirs and dams. Soil profiles and soil quality, degradation due to irrigation, use of fertilizers and pesticides.

BOOKS RECOMMENDED

1. Valdiya, K.S., 1987 : Environmental Geology - Indian Context. Tata McGraw Hill.
2. Keller, E.A., 1987 : Environmental Geology, Bell and Howell, USA.
3. Subramaniam. V. 2001 A Textbook in Environmental Science, Narosa International.
4. Bell, F.G., 1999 : Geological Hazards, Routledge, London.
5. Smith, K., 1992 : Environmental Hazards, Routledge, London.

IVth SEMESTER - PAPER - 404
ENVIRONMENTAL GEOLOGY

Theory Marks: 80
Periods/ Week: 4 and Half hrs. Time: 3 Hrs.

Note:- In all nine questions will be set by the examiner, selecting two questions from each unit. The student will attempt any five questions, selecting at least one question from each unit. Question No. I will be compulsory and will have five to seven parts covering whole of the syllabi. All questions carry equal marks.

UNIT - I

Influence of neotectonics in seismic hazard assessment. Preparation of Seismic hazard maps. Distribution, magnitude and intensity of earthquakes.

UNIT - II

Study of seismic and flood - prone areas in India. Analyses for aklalinity, acidity, pH and conductivity (electrical) in water samples.

UNIT - III

Classification of ground water for use in drinking, irrigation and industrial purposes. Presentation of chemical analyses data and plotting chemical classification diagram.

UNIT - IV

Evaluation of enviromental impact of air pollution groundwater, landslides, deforestation, cultivation and building construction in specified areas.

BOOKS RECOMMENDED

1. Valdiya, K.S., 1987 : Environmental Geology - Indian Context. Tata McGraw Hill.
2. Bryant, E., 1985 : Natural Hazards, Cambridge University, Press.
3. Subramaniam. V. 2001 A Textbook in Environmental Science, Narosa International.
4. Smith, K., 1992 : Environmental Hazards, Routledge, London.

IIIRD SEMESTER - PAPER - 305
ECONOMIC GEOLOGY PRACTICAL

Max. Marks: 50
Periods/Week: 4 and half hrs.
Time: 3 Hrs.

1. Megascopic study of structures and fabric of different ores and their associations.
2. Mineralogical and textural studies of important ore minerals under ore microscope.
3. Study of other industrial and non-metallic minerals in hand specimen of the following:
   A. Refractories.
   B. Glass & Ceramic
   C. Abrasives
4. Preparation of polished ore specimen.

IVth SEMESTER - PAPER - 405
ECONOMIC GEOLOGY PRACTICAL

Max. Marks: 50
Periods/Week: 4 and half hrs.
Time: 3 Hrs.

1. Mineralogical and textural studies of important ore minerals under ore microscope.
2. Study of other industrial and non-metallic minerals in hand specimen of the following:
   A. Fertilizers.
   B. Building material
   C. Gemstones
   D. Cement
3. Study of important metallic ore minerals in hand specimen with special refernence to their physical characters, association, structure and probable origin.
4. Preparation of Mineral maps of India.
5. Diagramatic representation of open-cast and underground mining.

IIIRD SEMESTER - PAPER - 306
ENGINEERING GEOLOGY AND HYDROGEOLOGY PRACTICALS

Max. Marks: 50
Periods/Week: 4 and half hrs.
Time: 3 Hrs.

1. Study of properties of common rocks with reference to their Utility in engineering projects.
2. Study and interpretation of geological maps involving dam site, tunnels, roads and stability of hillslopes.
3. Interpretation of bore hole data.

IVth SEMESTER - PAPER - 406
ENGINEERING GEOLOGY AND HYDROGEOLOGY PRACTICALS

Max. Marks: 50
Periods/Week: 4 and half hrs.
Time: 3 Hrs.

1. Study of properties of common rocks with reference to their Utility in engineering projects.
2. Study and interpretation of hydrogeological maps involving groundwater conditions & nature of streams.
3. Delineation of hydrological boundaries on water table contour maps.
4. Pumping test : time, draw down and time-recovery test and evaluation of aquifer parameters.