Teaching Plan

Academic year 2015-2016

Class B. Sc. Ist Year **Semester I** **Paper-I Title of paper** **Mineralogy and crystallography**

Periods Per week (Theory- 3 /Practical-1) Test Date .

Weeks Total 15 Tutorial Date - /08/2015

Week	Theory/ Practical	Topic to be Covered
1	L-1 L-2 L-3	Introduction to Mineralogy and its branches Importance availability of minerals in nature Sources of minerals(magma)
2	L-1 L-2 L-3	Formation of minerals different process, Crystallization from melt Crystallization from solution (Evaporation & Sublimation) Crystallization from solution (Precipitation)
3	L-1 L-2 L-3	Metamorphic process and metamorphic minerals Atomic Number, wt, elemental Valencies, Association Atomic Bonding(Covalent bond & Ionic Bond)
4	L-1 L-2 L-3	Atomic Bonding(Metallic Bond & Vander walls' bond) Major Elements and formations of minerals Trace Elements and their importance in atomic substitution
5	L-1 L-2 L-3	Geochemical affinity & Chemical Behavior of Minerals Classification of element Geometrical and electrical stability of minerals
6	L-1 L-2 L-3	concept of relative sizes, ions, radius ,ratios Co-ordination numbers, Ionic substitution Isomorphism & Polymorphism Psedumorphism
7	L-1 L-2 L-3	Silicate Structures Physical Properties of Minerals Colour, Streak Physical Properties of Minerals Luster, Cleavage,
8	L-1 L-2 L-3	Physical Properties of Minerals fracture and Hardness Physical Properties of Minerals Forms, Physical Properties of Minerals Specific Gravity and its determination
9	L-1 L-2 L-3	Physical Properties of Minerals Magnetism, Electrical property and Radioactivity Physical Properties of Minerals Luminesencence, (phosphorescence and Fluorescence) Definition of crystal , condition of crystallization ,formation of crystal and glass
10	L-1 L-2 L-3	Crystallography, its relation to mineralogy Importance of study of crystals Crystal morphology : Faces, Edges, Solid angles& forms Interfacial Angle, its measurement with contact Goniometer, Law of constancy of Interfacial angle
11	L-1 L-2 L-3	Crystal symmetry, Crystallographic and Geometrical Symmetry, Elementary of symmetry, Planes, Axis and Center of symmetry Crystallographic axis , Lettering and order of crystallographic axis , Parameters
12	L-1 L-2 L-3	Crystallographic notation, Parametral system of Weiss, Index system of Miller , General Millenrium Symbol Classification crystals, based on nature of crystallographic axes into system Classification crystals, into classes based on number of elementary of symmetry
13	L-1 L-2 L-3	Distinction between crystal system and classes Normal symmetry class and lower symmetry classes Axial characters elements of symmetry and forms occurring in Normal symmetry classes of cubic systems Galena type Axial characters elements of symmetry and forms occurring in Normal symmetry classes of Tetragonal systems Zircon type
14	L-1 L-2 L-3	Axial characters elements of symmetry and forms occurring in Normal symmetry classes of Hexagonal cubic systems Beryl type Axial characters elements of symmetry and forms occurring in Normal symmetry classes of Orthombic systems Barytes type Axial characters elements of symmetry and forms occurring in Normal symmetry classes of Monoclinic systems Gypsum type
15	L-1 L-2 L-3	Axial characters elements of symmetry and forms occurring in Normal symmetry classes of Triclinic systems Axinite type Comparative study of all the Six Crystal Systems Revision

Teaching Plan

Academic year 2015-2016

Class B. Sc. Ist Year **Semester I** **Paper-II Title of paper** **General Geology & Structural Geology**

Periods Per week (Theory- 3 /Practical-1) Test Date .

Weeks Total 15 Tutorial Date - /08/2015

Week	Theory/ Practical	Topic to be Covered
1	L-1	Geology, its definition and sub division. Retentation of the subject with other branches of science
	L-2	Position of the Earth in the solar system
	L-3	Size, Shape, Density and Gravitation of the Earth
2	L-1	Temperature variation with depth, Pressure and Magnetism of the Earth
	L-2	Historical Method of determination of the age of the Earth
	L-3	Radioactive age determination of the age by K/Ar and U/Pb ratio
3	L-1	Earth's Crust, Mantle and Core
	L-2	Concept of Pangea, Panthalasa, Gondwana land and Lauresia
	L-3	Theories of Continental drift and its Evidences
4	L-1	Broad out line of plate Tectonics
	L-2	Process of physical weathering
	L-3	Process of chemical weathering
5	L-1	River types of drainage
	L-2	Erosional Process performed by river and related land forms
	L-3	Landforms produced due to depositional work done by river
6	L-1	Development of river valley and life history of river
	L-2	Process of wind Erosion and related land forms
	L-3	Depositional work performed through wind action
7	L-1	Land form produced due to wind action and desert scenario
	L-2	Glacier, their origin their types& movement and surfaces features
	L-3	Glacial erosion and related landforms
8	L-1	Glacial deposition and related landforms
	L-2	Ice ages and causes of glaciations
	L-3	Concept of Isostacy Pratts model
9	L-1	Concept of Isostacy Airy's model
	L-2	Residual mountains
	L-3	Folded Mountains & Orogenesis
10	L-1	Morphology of Volcanoes - Central type of Eruption
	L-2	Products of volcanic activity
	L-3	Distribution of volcanoes – Volcanic Belts on the Earth
11	L-1	Earthquakes causes and their effects
	L-2	Magnitude and intensity of Earthquakes
	L-3	Earthquake waves and their characteristics
12	L-1	Seismograph and seismogramme
	L-2	Distribution of Earthquakes
	L-3	Definition and scope of structural geology
13	L-1	Study of outcrops Identification of bedding
	L-2	Attitude of beds
	L-3	Counter maps and its interpretation
14	L-1	Broad outline of fold ,Genetic classification of fold
	L-2	Geometric Classification of fold
	L-3	Unconformity, nonconformity
15	L-1	Study of faults identification in field studies
	L-2	Types of fault , genetic classification
	L-3	Study of different types of Joints

Teaching Plan

Academic year 2015-2016

Class B. Sc. Ist Year Semester II Paper-V Title of paper: Petrology

Periods Per week (Theory- 3 /Practical-1) Test Date .

Weeks Total 15 Tutorial Date - /01/2016

Week	Dates	Topic to be Covered
1	L1	Introduction to petrology
	L2	Rock cycle
	L3	Major divisions and diagnostic features of Igneous, Sedimentary and Metamorphic rocks
2	L1	Primary Sources of Igneous Rocks
	L2	Magma and its Composition
	L3	Magma and its Composition
3	L1	Cooling nature of magma
	L2	Pyrogenitic Minerals
	L3	Formation of Glass and Crystals
4	L1	Intrusive :Concordant Sill, Lacoliths, Lopoliths
	L2	Phacoliths and concordant Batholiths
	L3	Discordant intrusions: Discordant Dykesand veins, cone sheets, ,
	L1	ring dykes, stock boss, conoliths and discordant Batholiths
	L2	Extrusive: Lava flows, Pahohoe and “aa”lava
	L3	Textures of Igneous rocks Glassy, Equigranular, granitic
6	L1	Textures of Igneous rocks Inequigranulr- porphyritic- poikolitic
	L2	Structure of Igneous rocks Vesicular, amygdaloidal, blocky, Pillow
	L3	Structure of Igneous rocks flow and columnar Joints
7	L1	Basis of classification of igneous rocks
	L2	Tabular classification
	L3	Descriptions of the Volcanic, Hypabassal and Plutonic rocks
8	L1	Process of weathering and products ,
	L2	denudation, transportation of sediments
	L3	Deposition, Cementation,sedimentation ,
9	L1	lithification and formation of sedimentary rocks
	L2	Clastic Textures of sedimentary rocks
	L3	Non Clastic Textures of sedimentary rocks
10	L1	Structure of sedimentary rocks : Lamination, Beddig (concordant and Discordant)
	L2	Structure of sedimentary rocks graded bedding, Ripple marks
	L3	Description and classification of sedimentary rocks : Laterite,bauxite,
11	L1	Breccia, conglomerate, sandstone,
	L2	shale, limestone , mudstoneand coral limestone
	L3	Definition , process and agents of metamorphism,
12	L1	Types of metamorphism and temp-pressure condition
	L2	Structures of metamorphic rocks: Schistose, slaty cleavages
	L3	Structures of metamorphic rocks: Gneisose, granulose and maculose
13	L1	Classification of metamorphic rocks(based on original rock type)
	L2	Classification of metamorphic rocks(based on different agents)
	L3	Classification of metamorphic rocks(based on type of metamorphism)
14	L1	Description of the rocks: Mica Schist, Hornblende Schist, slate,
	L2	Description of the rocks: Marble , Quartzite
	L3	Description of the rocks: Augen Gneiss, Hornblende Gneiss
15	L1	Revisions of the Igneous rocks
	L2	Revisions of the sedimentary rocks
	L3	Revisions of the metamorphic rocks

Teaching Plan

Academic year 2015-2016

Class B. Sc. Ist Year Semester II Paper-VI Title of paper: Paleontology and Stratigraphy

Periods Per week (Theory- 3 /Practical-1) Test Date .

Weeks Total 15 Tutorial Date - /01/2016

Week	Dates	Topic to be Covered
1	L1	Introduction and branches of paleontology
	L2	Scope and application of paleontology
	L3	Condition and modes of preservation of fossil
2	L1	Fauna and flora
	L2	Index fossils
	L3	Introduction to phylum
3	L1	Classifications of Phylum mollusca
	L2	Morphology of class lamellibranchia
	L3	Morphology of hard parts of the shells of lamellibranchia
4	L1	Ornamentation and type of hinge lines and dentitions of lamellibranchia
	L2	Morphology of class gastropoda
	L3	Morphology of hard parts of the shells of gastropoda
5	L1	Forms of Gestropod shell
	L2	Morphology of class cephalopoda
	L3	Morphology of hard parts of the shells of cephalopoda
6	L1	Types of suture lines in cephalopod
	L2	Classifications of Phylum branchiopoda and Articulate and Inarticulate Brachiopods
	L3	Types of Brachial skeleton and pedicle openings
7	L1	Comparison between Brachiopod and lamellibranch shells
	L2	Classifications of Phylum echinodermata
	L3	Morphology of hard parts of the test of regularia echinods
8	L1	Morphology of hard parts of the test of irregular echinoid and comparison between regular and irregular echinoids
	L2	Classifications of Phylum arthropoda class trilobita
	L3	Morphology of dorsal shield of Trilobites
9	L1	Types of facial suture and appendages in trilobites
	L2	Morphology of phylum coelenterata and class anthozoa madreporaria
	L3	Morphology of phylum coelenterata and class polypmedusa and type of septa
10	L1	Principles of stratigraphy
	L2	Evidences of paleo-ecology, Paleo climates
	L3	Pangea and panthalsia
11	L1	Laurasia and Gondvana land
	L2	Physiographic divisions of India
	L3	Extra peninsular India
12	L1	Peninsular India
	L2	Indo-gangetic alluvial Plains
	L3	Standard geological time scale
13	L1	Era/Epoch, System/Super groups, Series/Groups, Beds/Strata
	L2	Indian stratigraphical time scale
	L3	Correlation
14	L1	Criteria of correlation of nonfossils forms hard rock
	L2	Stratigraphical codes and nomenclature
	L3	Indian stratigraphic units in Archean-Precambrian, Cambrian
15	L1	Indian stratigraphic units of Mesozic group- Triassic, Jurassic and cretaceous
	L2	Indian stratigraphic Tertiary group- Eocene Oligocene, Miocene, Pliocene.
	L3	Revision

Teaching Plan

Academic year 2015-2016

Class B. Sc. IIst Year Semester III Paper-IX Title of paper MINERALOGY & IGNEOUS PETROLOGY

Periods Per week (Theory- 3 /Practical-1) Test Date .

Weeks Total 15 Tutorial Date - /08/2015

Week	Theory/ Practical	Topic to be Covered
1	L-1 L-2 L-3	Broad outline of crystalline minerals Broad outline of non-crystalline minerals Classification of minerals based on chemical compositions
2	L-1 L-2 L-3	Classification of silicates based on composition Classification of mineral based on silicate
3	L-1 L-2 L-3	Introduction to the following rock forming silicate groups Olivine--- composition, members, optical properties Pyroxene—composition, members, structure
4	L-1 L-2 L-3	Pyroxene-- optical properties, Hess Diagram Amphibole—composition, members, structure Amphibole – optical properties comparison with pyroxene
5	L-1 L-2 L-3	Mica-- composition, members, structure Mica – optical properties, economic importance Chlorite -- composition, member, structure
6	L-1 L-2 L-3	Feldspar – composition, member, structure Feldspar varieties optical properties economic importance Feldspar Plagioclase – Solid solution series, Parthite & Antiperthite
7	L-1 L-2 L-3	Silica – Physical properties & varieties, of crystalline silica Silica – Physical properties varieties, of non crystalline silica Silica – Occurrence and economic importance
8	L-1 L-2 L-3	Felspathoid -- composition, member, structure Occurrence and composition of Secondary minerals in basalt Economic importance, genesis of secondary minerals.
9	L-1 L-2 L-3	Physico – chemical constitution of megma Diversity of ligneous rocks. Concept of Primary Megma
10	L-1 L-2 L-3	Magmatic differentiation Crystallization of Uni-component magma Phase rule
11	L-1 L-2 L-3	Bi-component Binary magma Ternary magma Bowens reaction series
12	L-1 L-2 L-3	Fractional crystallizarion Igneous textures and microstructures introduction Factors controlling textures of rock
13	L-1 L-2 L-3	Various of textures- characteristics of texture Various structures of rock Various microstructures of rocks
14	L-1 L-2 L-3	Study of basic rocks Study of ultra basic rocks Study of fractional crystallization of basaltic magma
15	L-1 L-2 L-3	Study of fractional crystallization of granitic magma

Teaching Plan

Academic year 2015-2016

Class B. Sc. IIst Year **Semester III** **Paper-X** **Title of paper** **Crystallography and Optical Mineralogy**

Periods Per week (Theory- 3 /Practical-1) Test Date .

Weeks Total 15 Tutorial Date - /08/2015

Week	Theory/ Practical	Topic to be Covered
1	L-1 L-2 L-3	Definition of Crystal and condition of Crystallization Difference between Crystals and Amorphous mineral Imperfection in crystals
2	L-1 L-2 L-3	Importance of Law of constancy of Interfacial angles Elements of symmetry and forms occurring in the class pyrite type Phenomenon of Hemihedrism with examples
3	L-1 L-2 L-3	Elements of symmetry and forms occurring in the class Tetrahedrite type Concept of Holohedrism with example s Elements of symmetry and forms occurring in the class calcite type
4	L-1 L-2 L-3	Elements of Hemihedrism in the class calcite type. Elements of symmetry and forms occurring in the class Tourmaline type. Examples of Hemihedrism and concept of Hemimorphism occurring in the class Tourmaline type.
5	L-1 L-2 L-3	Elements of symmetry and forms occurring in the class Quartz type. Examples of Hemihedrism, Tetartohedrism and enantiomorphism from the class Quartz type. Parts of Petrological Microscope and their functions
6	L-1 L-2 L-3	Difference between ordinary microscope and petrological microscope. Nature of ordinary light and plane polarized light. Concept of reflection , refraction and double refraction.
7	L-1 L-2 L-3	Construction and working of Nicol prism Concept of Isotropism and Anisotropism. Optical properties of minerals under plane polarized light.
8	L-1 L-2 L-3	Form, Colour, Pleochroism in minerals. Relief, Cleavages, Cracks in minerals. Cross-nicols and their functions.
9	L-1 L-2 L-3	Optical properties minerals under cross-nicols. Isotropism and Anisotropism minerals with examples. Interference and Birefringence in mineral.
10	L-1 L-2 L-3	Momrefringent Birefringence Trirefringence minerals. Isotropism and Anisotropism related to crystal system of the minerals. Phenomenon of extinction and extinction angle in the mineral.
11	L-1 L-2 L-3	Types of extinction, straight, parallel, in clined and symmetrical extinctions. Extinction positions of minerals in different crystal system. Observation of minerabections underconvergent light.
12	L-1 L-2 L-3	Optic axis and their position in different crystal system. Interference figures and arrangements necessary for obtaining the interference figure in the petrological microscope. Uniaxial, Biaxial and Triasial minerals .
13	L-1 L-2 L-3	Parts of uniaxial interference figure in an ideal diagram. Explanation of the occurrence of Isogyres, Isochromatic rings emergence of optic axis in the uniaxial figure in section cut Perpendicular to optic axis. Types of accessories used in deciphering some optical properties of minerals gypsum tint, mica plate, quartz wedge.
14	L-1 L-2 L-3	Determination of optic sign of the uniaxial mineral in a section cut perpendicular to optic axis with the help of gypsum sensitive lint. Explanations of the parts deicted in an ideal Biaxial Interference figure obtained in a section cut perpendicular to Bxa. Determination of optics sings in an ideal Biaxial interference figure with the help of accessories.
15	L-1 L-2 L-3	Determination of sign of elongation in the minerals having parallel extinction. Revision Crystallography. Revision optical mineralogy

Teaching Plan

Academic year 2015-2016

Class B. Sc. IInd Year Semester IV Paper-XIII Title of paper: Sedimentary and Metamorphic Petrology

Periods Per week (Theory- 3 /Practical-1) Test Date .

Weeks Total 15 Tutorial Date - /01/2016

Week	Dates	Topic to be Covered
1	L1 L2 L3	Mineral composition of sediments. Concept of interstitial matrix Its effect on porosity and permeability
2	L1 L2 L3	Concept of cementing materials Its effect on porosity and permeability Introduction to textures of sedimentary rocks
3	L1 L2 L3	Wentworth and udden grade scale. Roundness Sphericity
4	L1 L2 L3	Kinds of transport of sediments Introduction to lithification and diagenesis. Brief outline of diagenetic processes
5	L1 L2 L3	Diagenetic processes and their significance. Mechanical structures in sedimentary rocks Types of various mechanical structures and environment of their formation and significance
6	L1 L2 L3	Brief out line of chemical structures in sedimentary rocks Various types of chemical structures in sedimentary rocks Significance of chemical structures in sedimentary rocks
7	L1 L2 L3	Study of Residual deposit Laterite and Bauxite, Formation of soil Study of Rudaceous deposit – Conglomerate and Breccia Study of Arenaceous deposit
8	L1 L2 L3	Genetic classification of sandstone Study of Argillacceous deposit Shales and mud stone
9	L1 L2 L3	Study of Chemical deposit Varieties f chemical lime stones Study of Organic deposit
10	L1 L2 L3	Varieties of organic lime stones Introduction to metamorphism and its distinction from diagenesis and merasomatism. Metamorphic minerals and textures
11	L1 L2 L3	Introduction to regional metamorphism (agents) Regional metamorphism of argillaceous rocks Formation of mica schist
12	L1 L2 L3	Regional metamorphism of Quartzofelspathic rocks Formation of Quartz schist and schistos quartzite Regional metamorphism of Basic igneous rocks
13	L1 L2 L3	Formation of Hornblende schist and Amphibolites Introduction to cataclastic metamorphism and process of cataclasis Formation of cruch breccias and cruch conglomerate, slates
14	L1 L2 L3	Introduction to Thermal metamorphism Thermal metamorphism of Pure and Impure limestones Thermal metamorphism of Pure and Impure limestones
15	L1 L2 L3	Thermal metamorphism of Arenaceous rocks Formation of Hornfels and Quartzite Brief revision of selected difficult topics

Teaching Plan

Academic year 2015-2016

Class B. Sc. IInd Year Semester IV Paper-XIV Title of paper: Structural Geology and Paleontology

Periods Per week (Theory- 3 /Practical-1) Test Date .

Weeks Total 15 Tutorial Date - /01/2016

Week	Dates	Topic to be Covered
1	L1	Introduction to structural geology and its relation with other branches of geology
	L2	Tectonic and non-tectonic structures
	L3	Planar and Linear structures
2	L1	Planar and Linear structures and their attitudes
	L2	Outlier and Inliers; Clinometers compass and its application.
	L3	Introduction to folds
3	L1	Definition and nomenclature of folds
	L2	Brief outline of classification of folds
	L3	Geometric classification of folds
4	L1	Geometric classification of folds
	L2	Genetic classification of folds
	L3	Genetic classification of folds
5	L1	Non tectonic folds
	L2	Introduction to Joints and its nomenclature
	L3	Geometric classification of joints
6	L1	Genetic classification of joints
	L2	Faults : definition and nomenclature
	L3	Different types of movement along fault
7	L1	Geometric classification of fault
	L2	Geometric classification of fault
	L3	Genetic classification of fault
8	L1	Genetic classification of fault
	L2	Recognition of faults in the field
	L3	Fault in the geological map
9	L1	Unconformity- Definition and development stages
	L2	Types of unconformity
	L3	Structural classification of unconformities
10	L1	Structural classification of unconformities
	L2	Recognition of unconformity in the field
	L3	Recognition of unconformity in the field
11	L1	Determination of top and bottom of a bed
	L2	Application of primary structures in determination of top and bottom of the bed
	L3	Interpretation of majors structures with which they are associated
12	L1	Introduction to Paleontology
	L2	Significance of index fossils
	L3	Significance of zonal guide fossils
13	L1	Morphological features of trilobites
	L2	Morphological features of trilobites
	L3	Morphological features of graptolites
14	L1	Introduction to Gondwana plant fossils
	L2	Introduction to Micropaleontology
	L3	Significance of micropaleontology in correlation of petroliferous strata
15	L1	Revision of selected topics in structural geology
	L2	Revision of selected topics in Paleontology geology
	L3	Revision of selected topics in Paleontology geology

Teaching Plan

Academic year 2015-2016

Class B. Sc. IIIrd Year Semester V Paper-XVII Title of paper: Indian Geology

Periods Per week (Theory- 3 /Practical-1) Test Date .

Weeks Total 15 Tutorial Date - /08/2015

Week	Dates	Topic to be Covered
1	L1 L2 L3	Physiographic features Introduction to peninsular India Extra Peninsular India Indogangatic Alluvial Plains
2	L1 L2 L3	Reveiew Indian stratigraphy Introduction to Achaean super group Classification of Dharwar
3	L1 L2 L3	Classification of Dharwar Geographical division of Dharwar Economic importance of Dharwar
4	L1 L2 L3	Bundelkhand gneiss Banded gneisses complex Clospet Granite and Charnokite
5	L1 L2 L3	Sargur formation Sakoli group Chilpighat and Iron Ore group
6	L1 L2 L3	Distribution, Classification of Aravalli group Distribution, Classification of Rayalo group Introduction to Purana Formation
7	L1 L2 L3	Dostribution and Classification of Cuddapah group Economic importance of Cuddapah Economic importance of Kaladgi group
8	L1 L2 L3	Distribution Classification of Vindhyans Kurnool system and equivalents of lower Vindhyans Economic importance of Vindhyans and Kurnool
9	L1 L2 L3	Introduction to Gondwana land Distribution Classification of Gondwana group Clamatic changes during Gondwana Era
10	L1 L2 L3	Floral and Funal fossils Gondwana Coal deposit Equivalents of Gondwana
11	L1 L2 L3	Jurassic formations of cutch Cretaceous of Truchripalli Cuddulore- Rajmundry sandstone
12	L1 L2 L3	Deccon traps occurrence, distribution, lithology Varieties and field characters of basalt Inter and Infra – trapian bed
13	L1 L2 L3	Geology of spity valley Geology of Kashmir valley Karevas formation of Kashmir
14	L1 L2 L3	Permo-Carboniferous formations Tertiary formations of Assam and its economic importance Distribution and classification of siwalik
15	L1 L2 L3	Climatic conditions during deposition of siwaliks Siwaliks mammals and their extinction Revision a review of completed syllabus

Teaching Plan

Academic year 2015-2016

Class B. Sc. IIIrd Year Semester V Paper-XVIII Title of paper: Economic Geology

Periods Per week (Theory- 3 /Practical-1) Test Date .

Weeks Total 15 Tutorial Date - /08/2015

Week	Dates	Topic to be Covered
1	L1	Composition of Magma -
	L2	Source of mineral deposits
	L3	Classification of processes of economic mineral deposits formations
2	L1	Mineral deposits formed due to early magmatic concentration
	L2	Mineral deposits formed due to late magmatic concentration
	L3	Economic mineral deposits resulting from metasomatism
3	L1	Economic mineral deposits resulting from metasomatism
	L2	Economic mineral deposits resulting from metamorphism
	L3	Economic mineral deposits resulting from metamorphism
4	L1	Role of hydrothermal processes in the formation of economic mineral deposits
	L2	Nature of cavities and cavity filling deposits
	L3	Fissure vein filling deposits
5	L1	Economic deposits resulting process of Replacement
	L2	Economic deposits resulting process of Evaporation
	L3	Economic deposits resulting process of Sublimation
6	L1	Economic deposits resulting process of Precipitation
	L2	Economic deposits resulting process of Precipitation
	L3	Economic deposits resulting process of Oxidation
7	L1	Economic deposits resulting process of Supergene Sulfide
	L2	Economic deposits resulting process of Supergene Sulfide
	L3	Economic deposits resulting process of Residual Deposit
8	L1	Economic deposits resulting process of Mechanical Concentration
	L2	Economic deposits resulting process of Sedimentation
	L3	Introduction to economic mineral deposits of India
9	L1	Geological and Geographical distribution of Iron deposits of India
	L2	Geological and Geographical distribution of Manganese deposits of India
	L3	Geological and Geographical distribution of Chromite deposits of India
10	L1	Geological and Geographical distribution of Copper deposits of India
	L2	Geological and Geographical distribution of Zinc deposits of India
	L3	Geological and Geographical distribution of Lead deposits of India
11	L1	Geological and Geographical distribution of Gold deposits of India
	L2	Geological and Geographical distribution of Bauxite deposits of India
	L3	Geological and Geographical distribution of Barytes deposits of India
12	L1	Geological and Geographical distribution of Gypsum deposits of India
	L2	Geological and Geographical distribution of Asbestos deposits of India
	L3	Geological and Geographical distribution of Mica deposits of India
13	L1	Occurrence, formations and distribution of petroleum in India
	L2	Cambay Basin, Bombay Basin, and Assam Arakan basin
	L3	Occurrence, formations and distribution of natural gas in India
14	L1	Occurrence, formations and distribution of coal in India
	L2	Types of coal and its verities
	L3	Gemstones and gemmology
15	L1	Semiprecious gemstones and their properties
	L2	Precious gemstones and their properties
	L3	Revision and review

Teaching Plan

Academic year 2015-2016

Class B. Sc. IIInd Year Semester VI Paper-XIX Title of paper: Applied Geology - I

Periods Per week (Theory- 3 /Practical-1) Test Date .

Weeks Total 15 Tutorial Date - /1/2016

Week	Dates	Topic to be Covered
1	L1	Introduction to Geo-exploration techniques
	L2	Introduction to Prospecting
	L3	Resources, reserves, Deposits, Ore minerals, evaluation.
2	L1	Different Geological and structural methods of prospecting:
	L2	Geophysical Prospecting : Gravity method
	L3	Gravity meter
3	L1	Elements of magnetic method
	L2	Magnetic method and Magnetometer
	L3	Seismic method wave projection
4	L1	Seismic method Reflection
	L2	Seismic method Refraction
	L3	Electrical method SP method
5	L1	Resistivity method
	L2	Resistivity method
	L3	Radioactive method
6	L1	Geochemical Method of prospecting
	L2	Geobotanical method of prospecting
	L3	Introduction to photo-geology and Remote sensing
7	L1	Elements of Photo-geology and Remote sensing techniques ,
	L2	Data Acquisition, Data Analysis and interpretation
	L3	Aerial photograph, satellite imagery ,
8	L1	False Colour Composites, MSS, Thematic mapper, RADAR, SLAR,
	L2	Application of remote sensing in surface mapping
	L3	Application of remote sensing in sub-surface mapping
9	L1	Impact of geo-exploration on Environment
	L2	Geochemical hazards and remedies
	L3	Types of drilling and techniques
10	L1	Core preservation
	L2	Well logging
	L3	Engineering properties rocks
11	L1	Engineering properties rocks
	L2	Application of geology in the engineering projects
	L3	Geo technical orders
12	L1	Different types of surveying methods
	L2	Structural geology applied in engineering
	L3	Brief on fault , fold and joints ,Brief on dykes, sills etc structures
13	L1	application of geology and geography
	L2	Selection of sites for engineering projects
	L3	Major engineering projects : Major Dam , reservoir,
14	L1	Tunnel , Bridges and airports
	L2	Problems of land slide,
	L3	Stability of slope and calamity
15	L1	Disaster management
	L2	Revision on prospecting
	L3	Revision on Engineering geology

Teaching Plan

Academic year 2015-2016

Class B. Sc. IIInd Year Semester VI Paper-XX Title of paper: Applied Geology - II

Periods Per week (Theory- 3 /Practical-1) Test Date .

Weeks Total 15 Tutorial Date - /1/2016

Week	Dates	Topic to be Covered
1	L1	Introduction to Hydrology, Geo hydrology, hydrogeology
	L2	Hydrological Cycle
	L3	Types of Water (fresh and saline)
2	L1	Hydrological properties of rocks: porosity
	L2	Permeability
	L3	Storativity ,Storage coefficient
3	L1	Transmissivity
	L2	Specific Yield, Safe yield,
	L3	Specific Retentation, Drawdown
4	L1	Aquifuse, Aquiclude, Aquitard and Aquifers, types of aquifers
	L2	unconfined aquifers and Water level
	L3	Confined aquifers and Peizo metric level
5	L1	Semi-confined aquifer
	L2	Movement of Ground water vertical and Horizontal
	L3	Sphericity –roundness of minerals in rocks and flow of ground water
6	L1	Darcy's law and Reynolds number
	L2	Occurrence of ground water in Igneous rocks
	L3	Occurrence of ground water in Sedimentary rocks
7	L1	Occurrence of ground water in Metamorphic rocks
	L2	Occurrence of ground water in stratigaphic divisions
	L3	Major Ground water provinces in Indian Subcontinent
8	L1	Hydro-chemical parameters of ground water
	L2	Hydro-chemical parameters of ground water
	L3	Hydrogeological characters of Deccan Basaltic rocks
9	L1	Occurrence and availability of ground water
	L2	Role of Igneous structures in Groundwater percolation and movement
	L3	Role of Igneous structures in Groundwater percolation and movement
10	L1	Concept of Watershed management
	L2	Aspects of watershed development
	L3	Government projects-schemes on watershed management
11	L1	Necessity of water conservation
	L2	Water conservation structures
	L3	Water conservation structures
12	L1	Role of water conservation structures in watershed management
	L2	Soil conservation measures
	L3	Necessity of soil conservation
13	L1	Soil conservation structures
	L2	Application Soil conservation structures in watershed management programme
	L3	Importance of hydrogeology in watershed management
14	L1	Importance of hydrogeology in watershed management
	L2	Preparation of hydrological map for Ground water studies in watershed management
	L3	Importance of well Inventory survey
15	L1	Preparation of Litho logs in watershed management
	L2	Revision of Hydrology
	L3	Revision of Watershed management