No. 3 Price : Rs. 5

University of Poona

Syllabi for the Three-Year Integrated B.Sc. Degree Course
"85 Pattern" Non-Semester Third Year B.Sc.

GEOGRAPHY

(From June 1989)

Title of the T.Y.B.Sc. Geography

310	Geomorphology and Oceanography
320	Climatology and Major Climate
330	Regional Geography of N. America or Asia
340	Human Geography or Political Geography
350	Principles of Cartography and Remote Sensing
360	Geography of Soils

Practicals

301	Cartographic Techniques and Stat Method
302	Soil Analysis and Geom. Pra.
303	Specilized Study of Toposheet Project Ex.

Gg 310 : Geomorphology and Oceanography

Unit	*Sub-Units*	*Abilities would be developed*	*Periods*
(A) Geomorphology			
1. Nature and scope, present position, Development of Geomorphic thoughts	Introduction. Definition and meaning of Geomorphology. Nature and Scope : Usefulness and importance of Geomorphology. Contributions of Geomorphologists in the subject past and present. Development of geomorphic thoughts Present position of the subject.	To know the definition, importance and usefulness of Geomorphology. To obtain the knowledge of different Geomorphologists who have contributed in the development of Geomorphic thoughts To know the position of Geomorphology in the past and present	3
2. Origin and distribution of oceans and continents.	Origin and distribution of oceans and continents, Wegener's continental drift theory, Theory of Isostacy, Plate Tectonics, Joly's theory of Radioactivity.	To know the information of origin and distribution of oceans and continents. To know the various theories regarding origin and distribution of oceans and continents.	8

3.	Weathering and mass movement	Types and characteristics of weathering and mass movement.	To know the meaning of weathering phenomenon To know the information about mechanical, chemical and biological weathering. To know the information about the types of mass movement.	3
4.	Slopes	Types of slopes and their development.	To know the information about the types of slopes and their development. To know the theories about the development of slopes.	3
5.	Cycles of erosion.	Divisan cycle of erosion, associated Landforms and drainage development.	To know the meaning of cycle of erosion. To know the definition of landforms. To know the information about the development of Landforms and drainage pattern due to the process of erosion.	6
6.	Fluvial erosion.	Glaciers and glacial topography : types of glaciers, the growth of glacier. The work of a glacier-erosion, transportation and deposition. Landforms produced by valley and continental glaciers. Ice age and its probable causes.	To know the information about the types of glaciers and their growths. To know the information about the work of valley glaciers and continental glaciers-erosion, transportation and deposition. To know the meaning of Ice age. To know the causes of Ice age.	7
7.	Work of wind and features of wind erosion and deposition	Mechanism of wind erosion-deflation, attrition, abrasion. Transportation and deposition features of wind erosion and deposition.	1. To acquire the knowledge of mechanism of wind erosion. 2. To admit the differences between river erosion and wind erosion. 3. To acquire the knowledge of features produced by wind erosion and deposition with examples.	5
8.	Sea waves, their work of erosion and deposition.	Mechanism of erosion by sea waves. Features of sea waves, erosion and deposition.	1. To acquire the knowledge of mechanism of sea waves erosion. 2. To acquire the knowledge of features produced by sea waves erosion and deposition with example .	5

(B) Oceanography

1. Nature and Scope of oceanography.	Introduction, Definition and meaning of oceanography. Usefulness and importance of oceanography. Contributions of oceanographers in the subject. Oceanography : Past and Present.	To know the definition importance and usefulness of oceanography. To obtain the knowledge of different oceanographers who have contributed in the development of oceanographic thoughts. To know the position of oceanography in the past and present.	3
2. Hypsographic Curve.	Distribution of Land and water on the surface of the earth.	To know the general distribution of Land and Water.	2
3. Properties of Sea Water.	Temparature, Density and Satinity, their latitudinal and vertical distribution.	1. To know the characteristics of ocean water. 2. To know the factors responsible for distribution of salinily.	6
4. Ocean currents, their causes, effects.	*Ocean circulation* Factors responsible for the origin of ocean currents. Ocean currents in pacific, Atlantic nad Indian oceans.	1. To know the factors responsible for the origin of ocean currents. 2. To obtain the knowledge of ocean currents in Pacific Atlantic and Indian ocean.	6
5. Waves : Capillary, gravity, shallow water and deep water waves, wave refraction and breaking of waves Long waves, and seemic waves (tsunami).	The origin and movements oceanic waves, breaking of wave.	To obtain knowledge regarding, origin and movement of oceanic waves.	7
6. Tides.	The theory of equilibrium, the effects of sun's attraction, spring and neap tides.	To understand the equilibrium theory of tides.	6
7. Tidal current and their channels Tidal bores.	Tidal currents and their channels Tidal bores.	To understand the tidal currents and their channels. To know about the Tidal bores.	5

8. Life in oceans.	The basis of marine life : (1) Phyteplankton, (2) Zooplankton, (3) Life of the oceans floor. (4) Total organic production of sea. (5) Food pyramid.	To know about the marine life.	5

List of Books

(1) Morphology and landscape–Robinson (University Press, London)
(2) A Test book of Geomorphilasy (P. G. Worcester)
(3) The Unstable earth : J. A. Steers
(4) Introduction to Geomorphology : Thornbuy
(5) Geomorphology : B. W. Sparks
(6) Principles of Oceanography : Sharma, Vithal
(7) Oceanography for geographers : C. A. M. King

Gg 320 : Climatology and Major Climates

Topic	*Sub-Units*	*Periods*
	SECTION I	
1. Nature and Scope	(i) Nature and Scope of climatology (ii) Structure and composition of atmosphere (iii) Elements of weather and climate (iv) Factors controlling weather and climate	6
2. Temperature	(i) Concept of solar radiation (ii) Variation of insolation (iii) Terestrial and Stratospheric heat balance (iv) Distribution of temperature and factors effecting distribution (v) Inversion of temperature	10
3. Atmospheric Circulation	(i) Global arrangement of pressure belts (ii) Shifting of pressure belts and their effects (iii) General circulation of atmosphere	8
4. Winds	(i) Planetory winds (ii) Seasonal winds (Mansoon) (iii) Local winds (Land and Sea, Fohin and Chinook, mountain and valley, mistral, sirocco, katabetic)	6
		40
	SECTION II	
5. Humidity	(i) Absolute, specific and relative humidity (ii) Process of evaporation and condensation (iii) Types of condensation (Hail, Rime, Dew, Fog, Frost, Precipitation) (iv) Types and classification of clouds (v) Forms of precipitation (vi) Types of precipitation	10

6. Atmospheric disturbances	(i) Air mass as a concept (ii) Source regions of air mass (iii) Stability and instability of air mass (iv) Classification of air mass (cT, mT, cP, mP) (v) Fronts (Cold, Warm, Occluded) (vi) Extra-tropical cyclones (Polar frunt theory) (vii) Tropical cyclones and dust storms (viii) Anticyclones	10
7. Climatic classification	(i) Bases of climatic classification (ii) Koppens classification (iii) Thornthwaites classification	6
8. Climates dominated by equatorial and tropical air masses	(i) Rainy tropics (ii) Mansoon tropics (iii) Wet and dry tropics (iv) Tropical arid climate (v) Tropical semiarid climate	
9. Climates dominated by tropical and Polar air	(i) Dry summer subtropics (ii) Humid Sub tropics (iii) Marine climate (iv) Mid latitude arid climate (v) Mid-latitude semiarid climate (vi) Humid continental warm summer (vii) Humid continental cool summer climate	6
10. Climates dominated by polar and aretic type air masses	(i) Taiga (ii) Tundra (iii) Polar Climate	6
11. Climates having altitude as the dominant control	(i) Highland climates	2
12. Climatic changes	(i) Changes during recorded history (ii) Recent climatic trends (iii) Climatic cycle (iv) Climatic modifications (v) Theories of climatic changes	4
		40

List of Books

(1) Introduction to weather and climate : Trewartha
(2) Climatology : Kendrew
(3) General Climatology : Critchfield
(4) Climatology : J. Buckmell
(5) Climatology : Trewartha
(6) Introduction to Metreology : Petterson

Gg 330 : (a) General Study of North America or Asia

Sr. No.	Topic	Sub-Topic	Periods
		SECTION I	
1.	Location and Extent	Absolute Neighbouring continents, neighbouring oceans, Latitudinal Extent, Longitudinal Extent, Significance of the continent.	6
2.	Structure, Relief, Drainage	Geological, Lithological. Mountain systems, plains, Plateaus, River systems.	12
3.	Climate, Vegetation and Soil	General description of climate, Temperature, Rainfall, Geographical factors affecting climate winter and summer conditions present systems, Climatic types.	14
	Vegatation	Natural vegetation and their types, Geographical factors affecting climate, Major forests zones and their economic importance.	
	Soils	Geographical factors affecting on soil formation process. Soil types and their characteristics.	
4.	Land use	General land use pattern, Types of farming, Distribution and production of Rice. Sugarcane, Tea, Rubber, Jute, Coconut and Wheat.	8
			40
		SECTION II	
5.	Minerals	Iron ore, Manganese, Tin. Distribution and production of each minerals.	8
6.	Power Resources	Coal, Petroleum, Hydro electricity.	8
7.	Industries	Cotton-textile, Iron and Stell, Ship building, Seri-culture, Finishing. Factors of localization, production.	10
8.	Population	Composition, Distribution.	6
9.	Transport and Trade	Means of transport. Railways, Road Waterways, Inland waterways, Air transport, Export-Import, Training centres-Development.	8
			40

Books

(1) North America : Carlson
(2) North America : Mead and Brown
(3) Anglo America : Griffin and others
(4) North America : White and Renner
(5) North America : Stamp

Regional Geography of Asia

Gg 330 : (b) North America or (Asia)

Unit	Sub-Units	Learning points	Periods
		SECTION I	
1. Location and Extent	—	Geographical Location and Extent	4
2. Structure, relief and drainage	—	Structure, Mountain, Plateau, plains, river patterns, lakes.	8
3. Climate	Summer and Winter seasons	Factors controlling the climatic conditions in summer and winter.	8
4. Vegetation and soil	—	Major Types of vegetation and Types of soils	8
5. Agriculture	—	Major types of Farming, study of distribution and production of major crops. wheat, cotton and corn.	2
			40
		SECTION II	
6. Minerals	Major, minerals and their distribution	Iron ore, Copper, Bauxite.	6
7. Power resources	Major power resources and their distribution	Coal, Petroleum, Hydro-electricity and atomic power.	10
8. Industries	Major Industries	Textile, Engineering, Iron and steel.	10
9. Population	—	Influcing population distribution.	6
10. Transport	—	Roads, railways and airways.	4
11. Trade	—	Export and Import	4
			40

List of Books

(1) Lands and People of Asia : G. B. Gressey
(2) Patterns of Asia : Ginsburg
(3) Asia : D. Stamp
(4) Asia : Cornish, W. B.

S.Y.B.Sc.

Gg 340 : (a) Human Geography

SECTION I

	Periods
1. *Introduction* Principles and functions of human Geography, man and his natural environment, possibilism and determinism. Various branches of Human Geography.	6
2. Early man : The homeland, Early movements of man. Division mankind. (1) Physical and social basis of Racial groups. (2) Cultural differences. (3) Ethinic groups. (4) Ethinic groups in India and their distributions.	12 10
3. *Human culture* (*a*) Culture and Geography. (*b*) The language of mankind–World's Principal languages, their distributions, language and landforms. International languages. National Integrations and language. *The religion of mankind*–Main religions and their distribution. Influence of religion upon social and economic life, influence of geographical factors on religion. Nationality and National integration.	
4. Early Economics–Hunting, gathering and fishing. Study of mode of life of Bushman, Pigmees, Gond, Bhils and Nagas.	12
	40

SECTION II

5. Forms of adoptations to the environment Human life in Cold and Hot region. Human life in mountainous regions of Hot and Temperate land.	8
6. *The People*–Movement of mankind, Forced and Voluntory movements, migration in modern times special reference to Migrations of International movements from Europe–effects of migration.	10
7. *The growth and distribution of population.* Factors influencing distribution of population, Geographic-Biotic, Economic, Historical. Geographic–Continentality–Insularity, Relief, Climate and Soil. Biotic-Birth, death, Hunger. Economic–Menercals, Industry Social, Cultural. Political and Historical	12
8 *Problems of over population*–Population regions, dynamic, perspective and depression region of India Population problems in India	10
	40

Brief outline of population Theories: Malthus and Karl Marx.

List of Books

(1) Human Geography : H. R. Robinson
(2) Human Geography : A. V. Perrpi ou
(3) Human Geography : D. C. Mang
(4) Human Geography : Emry Jones
(5) मानवी भूगोल—प्रा. क्षीरसागर, प्रा. भागवत, प्रा. देशपांडे, प्रा. सप्तर्षी.

Gg 340 : (b) Political Geography

Topic	Sub-Units	Learning points	Periods
		SECTION I	
1. Introduction to Political Geography	Meaning, Defination, Nature and scope	(i) History and Development of Political Geography (ii) Ratzel contribution to Political Geography (iii) Defination (iv) Dynamic nature of political geography (v) Scope of political grography (explained by Ponds)	8
2. Geopolitics	Meaning, Defination and Nature	(i) Origin of geopolitics (ii) German geopolitics (iii) Heartland theory of Mackinder (iv) Geostrategy after IInd world war	8
3. Evolution of state	Origin of state State and Nation. Elements of state	(i) Concept of state (ii) Origin of state–Raison detre, centrifugal and centripetal forces. (iii) Difference between state and nation. (iv) Elements of state–Location, Shape, Relief climate, Economic and Cultural.	12
4. Frontiers and Boundries	Defination, classification of boundries Boundries of India	(i) Defination of Boundry (ii) Defination of Frontiers (iii) Functional Classification of boundries (iv) Morphological classification of boundries (v) Boundries of India	12
			40
		SECTION II	
5. Political geography of rivers	Role of rivers in section 2 state system with examples	(i) Role of rivers in the growth of state (ii) Economic significance of rivers (iii) Conflicts related to rivers Danube, Mekong, Nile (iv) Navigation of international rivers	10
6. Territorial waters	Meaning zones. Problems	(i) Concept of territorial waters and its developments (ii) Claim to territorial waters (iii) 5 zones of territorial waters (iv) Nature and problems of landlocked states	10
7. Population	Size of population. Prol lems of over population Migrations. Local Problems related to population	(i) General Distribution of population in the different–states according to size Optimum over and under (ii) Problems related to over population (iii) In and out migrations of population restructuring the population distribution (iv) National minorities ex. India, Shrilanka	10

8. Current political problems and political groups	Nature of political problems. Political organizations Organizing political groups	(i) Cold wars (ii) Political problems in Afganistan. Shrilanka (iii) Different systems of political organization (iv) Orgarization of political groups– UNO S.A.A., RC.	10
			40

List of Books

(1) Political Geography : N. J. Pounds
(2) Systematic Political Geography : A. J. Blitz
(3) Political Geography : De-Blij
(4) Geography and Politics of world divided : S. B. Cohon
(5) राजकीय भूगोल—प्रा. भागवत, ल. वि.

Gg 350 : Elements of Cartography and Remote Sensing

Sr.No.	Topic	Sub-Topic	Periods
		SECTION I	
1.	Defination, Nature, Scope of Cartography. Branches of Cartography	(i) Defination of cartography (ii) Nature and scope of Cartography (iii) Branches of Cartography	4
2.	Development of Cartography	(i) Ancient Period (ii) Mediaval Period (iii) Modern Period (iv) Development of Cartography in India	8
3.	Maps	(i) Defination and classification of maps (ii) Scale, Directions, Grid and Grid references (iii) Index No. of S.O.I. toposheets	8
4.	Map Projection	(i) Defination and classification of Map Projection (ii) Merits and Demerits of Zenithal Projection (iii) Merits and Demerits of Conical Projection (iv) Merits and Demerits of cyllindrical Projection	10
5.	Surveying	(i) Geodetic and Plane Table Surveying (ii) Procedure of Plane Table Surveying (iii) Prismatic Compass Surveying (iv) Theodolites Surveying	10
			40

Gg 350 : Remote Sensing Detailed Syllabus

Sr.No.	Topic	Sub-Topic	Periods
		SECTION 1	
1.	Defination, Nature and Scope of Remote Sensing and Use	(i) Defination of Remote Sensing (ii) Nature and Scope of Remote Sensing (iii) Geographical Use of Remote Sensing	6
2.	Electromagnetic Spectrum	(i) Electromagnetic Spectrum	4
3.	Cameras, Scanners and Platforms	(i) Scannors, Multispectrul Scannors (ii) Areal cameras (Four) (a) Single lens frame camera (b) Multilense frame camera (c) Strip Camera (d) Panoramic Camera (iii) Platforms, Aircraft, Skylab, Sattelite	6
4.	Land-Sat-imegeries	(i) Defination and Types (ii) Band 4, 5, 6 7, and their characteristics (iii) Marginal information and Resolution definition	6
5.	Areal Photos	(i) Types and sidelap overlap (ii) Scale of aerial photographs (iii) Ground Coverage of areal Photographs	8
6.	Elements of Photo interpretation	(i) Shape Size, Tone, Shadow, Pattern Texture, Site, Resolution, Sterioscopic appearance	6
7.	Immage, and digital Data Processing	(i) Brief and broad information of immage data Processing (ii) Digital data interpretation	6
			40

Recommended Books

(1) Fundamental of Cartography by R. P. Mishra, Prassarange, University of Mysore.

(2) Remote Sensing and immage Interpretation by Thomas I.R.W. Kiefer, II Edition John Wille and Sons.

(3) Physical Geography by A. N. Strahler, 4th Edition, Wiley International Edition

T.Y.B.Sc. Paper VI

Gg 360 : Geography of Soils

Topic	Unit	Sub-Units	Periods
		SECTION I	
1. Introduction	Nature, Scope, development, importance	(i) Defination, Soil as a concept (ii) Significance in the study of Geography (iii) Impact of the Geographical aspects as a whole in soil science and Vice versa (iv) Historical perspective : Russian, European and American (v) Importance of soil sienence in the present age	6
2. Soil Components	(i) Mineral matter (ii) Organic matter (iii) Micro-organisms (iv) Water	(i) Gravel, sand, silt and clay, Passing reference of minerals and salts (ii) Sources, composition and decomposition of organic matter in general humus Carbon-Nitrogen ratio, Carbon-Nitrogen cycles (iii) Microbial population, influence of environmental factors (iv) Soil water-in general (v) Soil air-in general	6
3. Factos of Soil formation	(i) Inorganic (ii) Organic (iii) Climatic (iv) Geomorphic (v) Time	(i) Inorganic (ii) Organic (iii) Climatic (iv) Geomorphic (v) Time	8
4. Weathering and soil formation	(i) Mechanical (ii) Chemical (iii) Biological	(i) Effects of temp., water, air, plants and animals on weathering	4
5. Other processes of soil formation	(i) Accumulation (Illuviation) and Elluviation) (ii) Transformation (iii) Oxidation (iv) Hydrolation (v) Hydrolysis (vi) Carbonation (vii) Ionexchange (viii) Chelation (ix) Lateratisation (x) Podzolization (xi) Calcification	10 processes given in unit	6

Topic	Units	Sub-Units	13 Periods
6. Soil development	(i) Pedogenic processes (ii) Classification	(i) Factors of soil development (ii) effect of rain fall (iii) effect of temperature (iv) effect of vegetation (v) effect of organisms (vi) Soil profile (vii) Zonal, Azonal and Intrazonal	8 40
	SECTION II		
7. Morphology of soil	(i) Colour (ii) Texture (iii) Structure (iv) Constitution (v) Water holding capacity (vi) Soil swelling and shrinkage	As given in units	8
8. Soil water	(i) Importance (ii) Retentation of water by soil	(i) Hygroscopic water (ii) Capillary water (iii) Gravitational water (iv) Soil moisture constant (v) Energy relations or water in soil (vi) Loss of water (vii) Wetting and drying	8
9. Soil air	(i) Soil aeration (ii) Composition (iii) Importance	—	8
10. Soil temperature	(i) Importance (ii) Sources of soil heat (iii) Factors controlling soil heat (iv) Movement of heat and temperature changes (v) Control of soil temperature	—	8
11. Soil as a resource	(i) Soil as a resource (ii) Importance of soil conservation (iii) Problem of Soil erosion and methods of controlling soil erosion (iv) Remedies to check soil erosion	—	8 40

(1) A Text Book of Soil Science : J. A. Daji
(2) A Geography of Soil : B. T. Beating
(3) Climate, Soils and Vegetation : D. C. Money
(4) Soil Geography : J. C. Cruicksham
(5) Soil Science : Rode A. A.
(6) Soils of India : Rai Chaudhari
(7) Principles of Soil Geography : Forth and Turk

Gg 301 : Practicals in Cartography and Statistical Techniques

SECTION I

Topic	Learning Points	Periods
1. Introduction and defination of cartography Directions, Maps	(i) Defination and nature of cartography (ii) Co-ordinate systems—Geographical co-ordinates (iii) Grid system and grid reference (iv) True, magnetic and grid north (v) Introduction to concept of a bearing of a line Magnetic and True (vi) Defination, Classification and uses of maps	6
2. Scales and Scale transformation	(i) Meaning defination and uses of scale (ii) Methods of representing the scale (iii) Transformation of scale (iv) Drawing of comparative and diagonal scale with their advantages (v) Determining the scale of a map	6
3. Cartographic Symbolism and processing of data	(i) Representation of quantitative information with the help of signs and symbols (ii) Representation of quantitative data-proportionate symbols (iii) Types of representation—point, line and area symbols (iv) Merits and demerits of different symbols	8
4. Drawing of maps	(i) Quantitative maps–nature (ii) Drawing of population map with dot method (iii) Climatic map–line and Bar graph (iv) Economic maps using proportionate, symbols–cubes, spheres and divided circles (v) Choropleth map (vi) Traffic flow diagram	16
5. Map Enlargement and reduction	(i) Reduction and Enalrgement of scale (ii) Reduction and enlargement of map–Graphical and pantograph method	4
		40

SECTION II

6. Frequency distribution and polygon, histogram and ogive curves	(i) Nature of statistical data (ii) Frequency distribution (iii) Graphical representation of frequency distribution histogram and ogive curve (iv) Interpretation of graphs	4
7. Population and Sample	(i) Definite and Indefinite population (ii) Meaning, characteristics of sampling (iii) Types of sampling-point, line and area (iv) Sampling methods—Randam, and systematic (v) Stratified sampling	4
8. Evaluation of mean, mode and median	(i) Central tendency (ii) Meaning and difference between mean, mode and median (iii) Calculation of mean, mode, madian, for grouped and ungrouped data	6
9. Measures of dispersion and standard deviation	(i) Variance and standard deviation (ii) Calculation of standard deviation, for grouped and ungrouped data (iii) Utility of measures of dispersion	6
10. Standard error–t and F tests, Chi–square test	(i) Standard error of mean and confidence limits (ii) Testing of hypothesis null hypothesis (iii) Parametric and non-parametric tests (iv) 't', 'F' and Chi–square test	
11. Simple regression and Co-relation	(i) Simple bivariate regression (ii) Base-constant Regreesion Co-efficient, Scatter. diagram and Regression line (iii) Co-relation co-efficient-Pearsons Product-moment, Co-efficiatation correlation (iv) Spearman's Rank order corelation	

List of Books

(1) Map Work and Practical Geography : Singh and Kanauja
(2) Skin of the Earth : A. Miller
(3) Maps and Diagrams : Wilkinson and Monkhouse
(4) Statisrical Methods and Geographer : Gregory
(5) Quantiative Geography : King
(6) सांख्यिकी भूगोल—डॉ. जोग, प्रा. सप्तर्षी

Gg 302 : Practicals in Geomorphology and Soil Analysis

Topic	Unit	Sub-units	Periods required
		A—Practicals in Geomorphology	
1. Relief analysis	Profiles	(i) Projected, Super imposed, Composits	2
		(ii) Longitudinal Profiles	2
		(iii) Relative relief map Smith's method	4
		(iv) Slope map–Wentworths methods	4
2. Linear aspects of drainage basin	Order, number and length	(i) Stream order number and length relations	4
		(ii) Calculation of length ratio and bifurcation ratio	4
		(iii) Stream order and number relation	4
		(iv) Stream order and length relation	4
3. Areal aspects of drainage basin	Demarcation, calculation and measurement of basin area	(i) Demarcation and calculation of catchment area	4
		(ii) Calculation of drainage frequency	4
		(iii) Calculation of drainage density	4
			40
		B—Soil Analysis	
1. Soil Sampling	Concept	(i) Study of Augers	2
		(ii) Concept of Sampling	2
		(iii) Expenditure of Collection of sample in the field	
2. Physical properties of soil	(*a*) Texture	(i) Determination of soil texture Boaker method and sieve method	6
	(*b*) Density	(ii) Determination of bulk density	4
	(*c*) Specific Gavity & porosity	(iii) Determination of specific gravity and porosity	2
	(*d*) Soil PH and soluble salts	(iv) Determination of Soil PH	2
		(v) Identification of soluble salts	2
3. Chemical properties of soil	Chemical analysis	(i) Determination of $CaCo_3$	4
		(ii) Determination of $Fe2O_3$	4
		(iii) Determination of Al_2O_3	4
		(iv) Determination of SiO_2	4
		(v) Determination of organic matter	4
			40

T.Y.B.Sc.

Gg 303 : (Practical) Study of Toposheets, Project Work and Excursion

(A) Study of Toposheets

Unit	Sub-unit	Content Areas	Periods
1. Introduction	(i) Survey of India map series	Index, Grid reference	3
	(ii) British system and Metric system	Marginal information	3
		1 : 1000,000	
		1 : 0250,000	
		1 : 50,000 sheets and the corresponding British system toposheets	3
2. Fluvial Landscape	(i) Source region	Drainage density erosional features,	6
	(ii) Middle region	characteristic landfeatures of source,	
	(iii) Mouth region	middle and mouth region	4
	(Three toposheets)		
3. Arid Landscape	Two toposheets	Drainage characteristics playa lake Slope characteristics, pediment slope etc.	6
4. Coast and shoreline landscape	Two toposheets	Depositional features : spits, beaches,	6
	(i) Delta region	mudflats Erosional features, cliffs,	
	(ii) Creek region	abrasion platforms	
5. Settlement Study	Two toposheets	Pattern, form and function	6
	(i) Rural site		
	(ii) Urban site		
			40

(B) Project Work and Field Excursion

Project work on any *one* of the following : 30

1. Preparing a set of ten maps of either a tahasil or district showing :
   (i) Geomorphological
   (ii) Climatological
   (iii) landuse or any other aspect.
   or
2. Landuse survey of a village
   or
3. Morphology of a town or city
   or
4. Study of tribe/market centre/fair/industry etc.
   and
5. Excursion (study tour) to place of geographical interest 10

40

List of Books

(1) Singh and Kanuja : Map work and practical
(2) Tamaskar & Deshmukh : Geographical Interpretation of Indian topographical maps
(3) K. Rammurthy : Map Interpretation
(4) Dury : Map Interpretation
(5) Miller Austin : Skin of the earth.

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