

UNIVERSITY OF KALYANI

REVISED SYLLABUS

FOR THREE YEARS B.A./ B.Sc. DEGREE COURSE

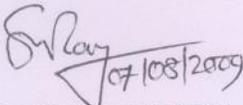
(HONOURS AND GENERAL)

IN

GEOGRAPHY

**According to the New Examination Pattern
Part – I, Part- II & Part- III**

**WITH EFFECT FROM THE SESSION
2009 – 2010**


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University of Kalyani
Kalyani, Nadia

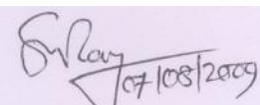
UNIVERSITY OF KALYANI
KALYANI NADIA
COUNCIL FOR UNDER GRADUATE STUDIES
PROCEEDINGS OF THE 21ST MEETING OF THE (PREVIOUS) COUNCIL FOR UG STUDIES HELD ON
13/09/2005

Revised Structure and Distribution of Marks for Practical Based Subjects at UG Level
w.e.f. Academic Session 2005-2006

BACHELOR OF SCIENCE (GENERAL)	PART-I	PART-II	PART-III
Compulsory English : One half paper : 50 Marks Modern Indian Language : One half paper : 50 Marks	50 Marks 50 Marks	- - -	- - -
Environmental Studies : One full paper* : 100 Marks*	100 Marks*		
Elective Subjects : Three : Four full papers : 3x4x100 each =1200 Marks	3x1x100 =300 Marks	3x2x100 =600 Marks <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> { Th: 3x1x100 = 300 Marks Pr: 3x1x100 = 300 Marks </div>	3x1x100 =300 Marks <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> { Th : 3x1x 60 = 180 Marks Pr : 3x1x40 = 120 Marks </div>
AGGREGATE MARKS : 1400	500 Marks	600 Marks	300 Marks

BACHELOR OF SCIENCE (HONOURS)	PART-I	PART-II	PART-III
Compulsory English : One half paper : 50 Marks Modern Indian Language : One half paper : 50 Marks	50 Marks 50 Marks	- -	- -
Environmental Studies : One full paper* : 100 Marks*	100 Marks*	-	-
Elective subjects : Two : Three full papers : 2x3x100 each = 600 Marks	2x1x100 Marks =200 Marks	2x2x100 =400 Marks <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> { Th: 2x1x100 =200 Marks Pr: 2x1x100 =200 Marks </div>	- -
One Honours Subject = 800 Marks			
Theory: Seven Papers = 540 Marks Practical: Four Papers = 260 Marks	200 Marks (Th: 2 x 75 Marks) (Pr : 1 x 50 Marks)	200 Marks (Th: 2 x 75 Marks) (Pr : 1 x 50 Marks)	400 Marks (Th: 3 x 80 Marks) (Pr : 2 x 80 Marks)
<u>For Computer Science Honours</u>			
Theory : Seven Papers = 440 Marks Practical : Four Papers = 280 Marks Project : One Paper = 80 Marks	200 Marks (Th: 2 x 50 Marks) (Pr: 1 x 100 Marks)	<u>For Computer Science Honours</u> 200 Marks (Th: 2 x 50 Marks) (Pr: 1 x 100 Marks)	Marks (Th: 3 x 80 Marks) (Pr : 1 x 80 Marks) (Project : 1 x 80 Marks)
AGGREGATE MARKS : 1600	600 Marks	600 Marks	400 Marks

* With effect from the session 2009-2010.


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Revised Syllabus of Geography

(w.e.f. the session 2009-2010)

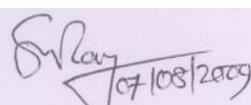
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**Revised Syllabus for B.A./B.Sc.(Honours) Course in
Geography**

(w.e.f. the session 2009-2010)

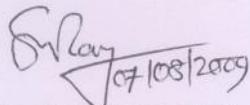
**According to the New Examination Pattern
Part – I, Part – II & Part – III**

Part I

Paper I : Geotectonics & Geomorphology

Paper II : Soil & Bio-Geography

Paper III : Practical


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(Figures in the bracket represent number of Lectures)

PART- I

200 Marks

Paper – I : Physical Geography (No. of Lectures – 76)**75 Marks****Group – A : Geotectonic (No. of lectures – 28)****35 Marks**

1. Origin of the Earth (04)
2. Geological Time Scale (04)
3. Concepts of Isostasy: Airy, Pratt, Daily, Hayford and Ve ning Meinesz (05)
4. Continental Drift Theory; Theory of Plate Tectonics (08)
5. Epeirogenic and Orogenic Movements – Folds and Faults (07)

Group – B : Geomorphology (No. of lectures – 48)**40 Marks**

1. Scope, content and development of Geomorphology.(06)
2. Influence of lithology and structure on landforms (Uniclinal, Folded and Faulted). (08)
3. Types of weathering and its resultant landforms. (10)
4. Concepts of Davis, Penck and King on the evolution of landforms . (12)
5. Evolution of landforms under Fluvial, Glacial, Aeolian ,Marine and Karst processes. (12)

Paper – II : Soil & Bio-Geography (No. of Lectures –76)**75 Marks****Group – A : Soil Geography (No. of lectures – 36)****35 Marks**

1. Soil: Definition, composition, processes and factors of formation. (04)
2. Concept of zonal, azonal and intrazonal soils; concept of Soil Taxonomy (06)
3. Profile development: Podzols. Chernozems and Laterites. (06)
4. Physical and chemical properties of soil: Texture, Structure, Moisture, Colour, Soil Reaction and Organic matter. (10)
5. Soil erosion: types and factors; measures of soil conservation. (10)

Group – B : Bio-geography (No. of lectures- 40)**40 Marks**

1. Definition and nature of biosphere. (04)
2. Concept of Ecosystems. Biomes and Ecotone; Life forms, Population and Community (08)
3. Trophic structure, food chain and food web. (04)
4. Energy flow in ecosystems. (06)
5. Bio-geochemical cycles: Carbon and Nitrogen. (06)
6. Study of Biomes; Equatorial and Tropical Rainforest, Tropical Grassland, Tropical Desert, Borial and Temperate Grasslands (12)

Paper – III : Practical

50 Marks

Group – A : Scale & Area measurement

20 Marks

1. a) Scales: Linear, Vernier and Diagonal scales.
b) Enlargement and reduction of scale.
2. Area measurement by graphical method and planimeter.

12 Marks

8 Marks

Group – B: Geological Maps

20 Marks

1. Interpretation of geological maps and drawing of sections:
Uniclinal, Unconformity, Faults and Folds.

Group – C : Laboratory Note Book and viva voce

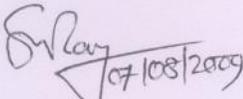
(5+5) = 10 Marks

Part II

Paper IV : Climatology & Hydrology

Paper V : Oceanography & R.S./G.I.S.

Paper VI : (Practical) Statistical Methods


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(Figures in the bracket represent number of Lectures)

PART – IIPaper – IV : Climatology & Hydrology (No. of Lectures- 76)75 MarksGroup – A :Climatology (No. of lectures –58)**50 Marks**

1. Nature, composition and layering of the atmosphere (04)
2. Factors affecting insolation. Heat budget of atmosphere (05)
3. Horizontal and vertical distribution of temperature. Inversion of temperature (07)
4. Pressure belts and air masses (08)
5. General wind circulation. Jet streams. Origin of Indian Monsoon. (10)
6. Process and forms of condensation. Forms and mechanisms of precipitation; Ice Crystal Theory and Collision Coalescence Theory (08)
7. Tropical and mid latitude cyclones (08)
8. Basis of Climatic classification. Climatic classification after Koppen and Thornthwaite (08)

Group – B : Hydrology (No. of lectures –18)**25 Marks**

1. Scope and content of Hydrology and its relevance (02)
2. Mode of occurrence of water. (03)
3. Hydrological Cycle (05)
4. Factors influencing runoff and infiltration. (04)
5. Ground water movement and storage (04)

Paper – V : Oceanography & R.S./G.I.S. (No. of Lectures-76)75 MarksGroup-A: Oceanography (No. of lectures-26)**25 Marks**

1. Nature and scope of Oceanography. (03)
2. Temperature, Salinity and Density of sea water. (03)
3. Ocean Currents: Pacific, Atlantic and Indian Ocean. (06)
4. Bottom Topography: Pacific, Atlantic and Indian Ocean. (09)
5. Formation Characteristics and Theories of origin of coral reefs. (05)

Group – B : R.S./G.I.S. (No. of lectures –50)**50 Marks**

1. Definition and stages of Remote Sensing. EMR and its spectral ranges.Types of Resolution in RS,Concept of FCC. Remote Sensing Platforms and Sensors – LANDSAT, SPOT and IRS. (14)
2. Concept of aerial photography and photogrammetry. Type of aerial photographs. Photo-interpretation keys: Shape, Size, Tone, Colour, Texture, Pattern, Shadow, Site and Association (12)
3. Fundamental concepts of GIS . Use of RS data in GIS. Raster and Vector data format. Data Analysis : Visual and Digital Techniques of Image Interpretation. Global Positioning System. Role of RS and GIS in modern Cartography (12)
4. Application areas of RS and GIS in managing Agriculture, Forestry, Fishing and Water Resources. Monitoring Urban Growth and Environmental Degradation (12)

Paper VI : (Practical) Statistical Methods

50 Marks

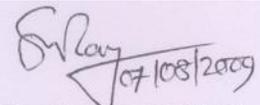
Group – A : Application of Statistical methods

40 Marks

1. Nature of Statistical Data and scales of their measurement. Tabulation and Classification of data
2. Concepts of Sampling Techniques (Random, Systematic and Stratified) and Test of Significance: Students' t-test .
3. Frequency Distribution: Frequency curve and polygon. Histogram and Ogives
4. Measures of central tendency and dispersion : Mean, Median and Mode. Mean Deviation and Standard Deviation. Co-efficient of variation and their applications
5. Simple bi-variate correlation and regression
6. Time Series Analysis : Trend line (Moving Average and Semi Average method)

Group-B : Laboratory Note Book & Viva voce

(5+5) = 10 Marks


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Part III

Paper VII : Social, Cultural & Political Geography

Paper VIII : Economic Geography

Paper IX : Regional Geography

Paper X : Practical

Paper XI : Practical

(Figures in the bracket represent number of Lectures)

PART – IIIPaper –VII : Social, Cultural & Political Geography (No. of Lectures- 80) 80 Marks

1. Scope and content of Social and Cultural geography. (10)
2. Social geography of rural India: Caste, Class and Tribe (Toda, Jarwa, Khasi and Santhal). (20)
3. Concepts: Culture, community, society, cultural hearth and cultural realms. (10)
4. Settlements as social entities: Site and situation of rural settlements; Rural and Urban Classification: Genetic and Functional, Theories of Urban Morphology (Concentric zone theory, Sector theory, Multiple nuclei theory). (20)
5. Scope and content of Political Geography, Heartland and Rimland theories. Boundaries and Frontiers, Nature of administrative areas with reference to India. (20)

Paper –VIII : Economic Geography (No. of Lectures- 80) 80 Marks

1. Scope and content of Economic Geography. (06)
2. Sectors of Economy: Primary, Secondary, Tertiary and Quaternary. (04)
3. Primary Economic Activities: (i) Agriculture, Classification after Whittlesey and its characteristics, Von Thunen's Model (ii) Fishing: Distribution of world fishing zones. (iii) Forestry: Types and management (35)
4. Industry :
 - a. Theories of industrial location: (Weber and Losch) (35)
 - b. a) Iron and Steel Industry of Japan.
 - b) Paper Industry of Canada.
 - c) Cotton Textile Industry of U.S.A.
 - d) Petrochemical Industry of India.

Paper-IX : Regional Geography (No. of Lectures- 80) 80 Marks

1. Concept of regions- nature and types. Methods of Regional delineation. Indicators of Regional imbalances. (12)
2. Study of Regions: i) Vale of Kashmir, ii) Marusthali, iii) Chotanagpur Plateau, iv) Assam Valley Region. (24)
3. Concept of Regional Planning- Macro level and Micro level. Evolution of Regional Planning in India (through Plan Period). (08)
4. Study of Planning Regions of India : National Capital Region, KMDA and DVC (16)
5. Regional Geography of West Bengal : Geology, Relief, Drainage, Climate, Soil, Vegetation, Agriculture, Mining and Industry, Population, Transport and Communication system. (20)

Paper-X : (Practical)**80 Marks**

1. Computer applications in Geography: **20 Marks**
 - (a) Fundamental concepts on Computer hardware and software.
 - (b) Preparation of bar, pie and line graph.
 - (c) Scatter diagram and trend line.
2. Survey: Traversing by Prismatic Compass and Dumpy level with one change point (profile drawing). **20 Marks**
3. Preparation of thematic maps using (a) point symbol: dot map (b) Line Symbol: Traffic flow map, (c) Area Symbol: Choropleth map, (d) Volume Symbol: Spheres. **15 Marks**
4. Weather map: Pre-monsoon, Monsoon, Post-monsoon. **15 Marks**
5. Laboratory Note Book & viva voce. **(5+5)=10 Marks.**

Paper-XI : (Practical)**80 Marks**

1. Projection: Cylindrical Equal Area, Mercator's, Polar Zenithal Stereographic, Simple Conical Projection with one standard parallel and Bonne's. **20 Marks**
2. Topographical map interpretation (1:50,000) with reference to relationship between physical and cultural features using Transect chart and Scatter diagram. **5 Marks**
3. Morphometric Analysis of Drainage Basin from Topographical Map (1:50,000) **15 Marks**
 - (i) Relative Relief
 - (ii) Drainage Frequency
 - (iii) Stream Ordering: Horton and Strahler
 - (iv) Slope analysis by Wentworth's method.
4. Megascopic identification of Rocks & minerals **10 Marks**

Rocks: Granite, Basalt, Dolerite, Shale, Sandstone, Limestone, Conglomerate, Laterites, Slate, Phyllite, Schist, Marble, Quartzine, Gneiss

Minerals: Talc, Gypsum, Calcite, Mica, Feldspar, Quartz, Chalcopyrite, Hematite, Magnetite, Bauxite, Galena.

5. Field Work and Field Report (10+10)=20 Marks

Select an area (rural/urban with cadastral /municipal map) and identify major landuse features and related problems. The report should be :

- (i) hand written- within 2500 words.
- (ii) Maps and diagrams not exceeding 20 pages; photographs not exceeding 5 pages.
- (iii) No dry letter to be permitted.

The location of field must be within 100 km from institution concerned.

6. Laboratory Note Book & viva voce. (5+5)=10 Marks

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(Figures in the bracket represent number of Lectures)

PART – I

Paper – I : Physical Geography (No. of lecturers-100)

100 Marks

Group – A : Geomorphology (No. of lectures-36)

40 Marks

1. Structure of the interior of the earth. (3)
2. Influence of rocks on topography (5)
3. Broad outline of Plate Tectonics and major crustal formations: Fold mountains, trenches, island-arcs. (12)
4. Evolution of landforms under Fluvial, Marine and Aeolian processes (10)
5. Cycle of erosion (after Davis) (6)

Group- B: Climatology (No. of lectures – 29)

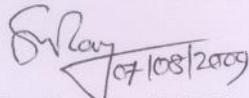
30 Marks

1. Insolation and Heat Budget (3)
2. Horizontal and Vertical distribution of temperature and pressure (5)
3. Greenhouse effect (5)
4. Tropical disturbances: Thunderstorm and Cyclone (6)
5. Monsoon mechanism (6)
6. Climatic classification after Koppen (4)

Group – C : Bio-geography (No. of lectures – 35)

30 Marks

1. Origin of soils. (02)
2. Processes of Profile development (06)
3. Properties of soil : Physical and Chemical (06)
4. Concept of Zonal, Azonal and Intrazonal soils (06)
5. Concepts of Ecosystems and Biomes (04)
6. Plant types and distribution (Halophyte, Xerophyte, Hydrophyte, Mesophyte, Tropophyte) (2)
7. Plant and animal communities of the following biomes:
 - i) Tropical rainforest
 - ii) Savannah
 - iii) Hot desert (09)


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(Figures in the bracket represent number of Lectures)

PART – II

Paper – II : Human Geography and Regional Geography of India
(No. of lecturers –100) 100 Marks

Group –A : Social Geography (No. of lectures- 23) **20 Marks**

1. Growth and distribution of world population (7)
2. Migration : Types, causes and consequences of migration (8)
3. Contemporary Social issues : Adult Literacy, poverty, gender issues (8)

Group –B : Economic Geography (No. of lectures –28) **30 Marks**

1. Sectors of the economy: primary, secondary, tertiary and quaternary: Changing emphasis through time (5)
2. Forms of economy: (9)
 - i) Tribal Economies: hunting, gathering, shifting cultivation of India
 - ii) Traditional economies: Intensive Subsistence Farming: Rice in India
 - iii) Modern Economies: Commercial grain farming and mixed farming
3. Cottage, small scale and large -scale industries-general characteristics and examples. (5)
4. Location, problems and prospects of Indian industries (9)
 - a) Agro-based : Cotton textile industry
 - b) Forest-based : Paper industry
 - c) Mineral-based : Iron and steel industry

Group – C : Regional Geography of India (No. of lectures-49) **50 Marks**

1. Concept of regions : formal and functional : scale - macro,meso,micro (6)
2. Broad physiographic regions of India (4)
3. Vagaries of Indian monsoon and its impact : problem of flood and drought (8)
4. Forest resources of India: issues concerning deforestation (8)
5. Problems of soil erosion and conservation in India (4)
6. Regions of India : (10)
 - a) Agricultural Regions of India: special reference to Punjab -Haryana wheat belt
 - b) Industrial Regions of India : special reference to Hooghly industrial belt
 - c) Planning Regions of India: special reference to D VC Region
 - d) Biotic Regions of India: special reference to Sundarban of West Bengal.
7. Racial and ethnic diversity in India : associated problems with special reference to tribal population (9)

Paper – III : (Practical)100 Marks

1. Concept of Scale: drawing of Linear Scale **8 Marks (Final Exam-5 Marks)**
2. Projection by Graphical method: concept and major classifications: **12 Marks (Final Exam-10 Marks)**
Simple Conic with One Standard Parallel, Cylindrical Equal Area, Polar Zenithal Stereographic
3. Cartograms: Pie graph, Bar graph (simple and compound) **15 Marks (Final Exam-10 marks)**
4. Statistics: **20Marks (Final Exam-15 Marks)**
 - a) Nature and classification of data.
 - b) Process of tabulation and graphical representation: histogram, Frequency polygon, cumulative frequency curve.
 - c) Measures of central tendency: mean, median and mode
 - d) Measures of dispersion: range, mean deviation, quartile decile and percentile and deviation.
5. Interpretation of Indian Daily Weather map under the following heads **15 Marks (Final Exam -10 Marks)**
 - i) Atmospheric pressure
 - ii) Wind direction & speed
 - iii) Sky condition
 - iv) Precipitation

Weather maps of:

 - a) Pre-monsoon
 - b) Monsoon
 - c) Post-Monsoon
6. Field Work and Viva voce **20 Marks (Final Exam-10 Marks)**
Field Work in village within the district near the institution covering the following aspects :
 - a) Land-use Survey and its Presentation on a Mouza map(Cadastral)
 - b) Collection of door to door data through Questionnaire Survey, representation of the data by Statistical methods and Cartograms
 - c) Preparation of a report covering Physiography, Drainage, Climate, Vegetation, Soil, Population, Mining, Fishing, Forestry, Irrigation, Agriculture, Animal Rearing, Industry, Transport, Settlement, Land use, Folk Culture -whichever is applicable. Maps and diagrams should not be more than 15 pages of A4 size. The report should not be more than 1500 words. Report should be hand written (dry letters are not permitted).
7. Laboratory Note Book and Viva-Voce - **10 Marks (Final Exam-10 marks)**

(Figures in the bracket represent number of Lectures)

PART – III**Paper – IV : Applied Geography****60 Marks****Group –A : Land use and Settlement Geography (No. of lectures-24)****30 Marks**

1. Concept and attributes of land (3)
2. Objective and principles of landuse (5)
3. Rural Settlements : evolution, nature and characteristics, effect of physical environment (8)
4. Urban settlements : definition, morphology and function (8)

Group –B : Remote Sensing and Thematic mapping (No. of lectures –26)**30 Marks**

1. Definition of Remote Sensing, different methods of remote sensing ; air photo and satellite imagery (6)
2. Aerial Photo : Characteristics, interpretation (5)
3. Satellite Imagery : types of satellite imageries, characteristics of IRS imageries (6)
4. Definition, objective and principles of thematic mapping (e.g. climatic map, economic and population) (9)

Paper –IV (Practical)**40 Marks**

(a) Toposheet Interpretation:

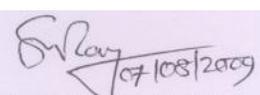
20 Marks

1. Basis of numbering and scale of topographical sheets
2. Interpretation of 1:50,000 toposheets : plateau region and extraction of geographical information from maps, interpretation and explanation with suitable sketches, profiles and transect charts under the following heads :
Relief, drainage, natural vegetation, transport and settlement

*3.Preparation of land use map from Aerial photographs (Drawing and interpretation) **(8+4)**4.Lab. Note Book and Viva-Voce **(4+4) Marks**

*

Item No: 3 is for Internal Marking (12 Marks=30 % of the paper).


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