

The University of Burdwan
B.A. /B.Sc. (Honours) in Geography
Semester-I
Hiralal Bhakat College

CC1: Geotectonics and Geomorphology**Unit-1: Geotectonics**

Topic	Teachers' Name
1. Earth's tectonic and structural evolution with reference to geological time scale	CG
2. Earth's interior with special reference to seismology	CG
3. Concept of Isostasy: Theories of Airy and Pratt	BM
4. Plate Tectonics: Processes at constructive, conservative, destructive boundaries and hotspots: resulting landforms	BM

Unit- 2: Geomorphology

Topic	Teachers' Name
1. Degradational processes: Weathering, mass wasting and resultant landforms.	BS
2. Models of landscape evolution: Views of Davis, Penck, and Hack.	BS
3. Slope Development: Concept of Wood	CG
4. Development of river network and landforms on uniclinal and folded structures.	CG
5. Types of rocks, mineralogical composition of igneous rocks; Landforms on igneous rocks with special reference to Granite and Basalt.	BM
6. Karst landforms: Surface and sub-surface.	BM
7. Glacial and fluvio-glacial processes and landforms.	SG
8. Aeolian and fluvio-aeolian processes and landforms.	SG

CC2: Theory (Cartographic Techniques and Geological map study)

Topic	Teachers' Name
1. Maps: Classification and Types.	IM
2. Concept of Scales: Plain, Comparative, Diagonal and Vernier.	IM
3. Coordinate Systems: Polar and Rectangular. Concept of Geoid and Spheroid. Map Projections.	BS
4. Concept of Generating Globe, Grids: Angular and Linear Systems of Measurement.	BS
5. Survey of India Topographical Maps: Reference scheme of Old and Open series.	BM
6.1 Delineation of Drainage Basin from Survey of India Topographical Map.	CG
6.2 Concept of Relief, Slope and Stream Order.	CG
7. Types of rocks and minerals. Characteristics of Granite, Basalt, Dolerite, Pegmatite, Gneiss, Shale, Sandstone, Slate, Marble, Quartzite, Quartz, Feldspar, Mica, Limestone, Calcite, Bauxite, Magnetite, Hematite, Galena.	SG
8. Concept of Bedding Plane, Unconformity and Non-conformity, thickness of Bed, Dip, Throw, Hade, heave.	SG

CC 2: Practical (Cartographic Techniques and Geological Map Study)

Topic	Teachers' Name
1. Construction of Scales: Plain, Comparative, Diagonal and Vernier.	IM
2. Construction of Projections: Polar Zenithal Stereographic, Simple Conic with two Standard Parallels, Bonne's and Mercator's.	BS
3.1 Construction and Interpretation of Relief Profiles (Superimposed, Projected and Composite), Preparation of Relative Relief Map.	BM
3.2 Slope map (Wentworth), and Stream Ordering (Strahler) on a Drainage Basin.	CG
4. Geological Map (Problems related to Horizontal, Uniclinal, Folded and Faulted structure); Drawing of Geological section and Interpretation of the Map	SG

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CC 5: Theory (Climatology)

Unit 1: Elements of the Atmosphere

Topic	Teachers' Name
1. Nature, composition and layering of the atmosphere.	IM
2. Insolation: controlling factors. Heat budget of the atmosphere.	IM
3. Temperature: horizontal and vertical distribution. Inversion of temperature: types, causes and consequences.	SG
4. Greenhouse effect and importance of ozone layer.	BM

Unit 2: Atmospheric Phenomena, Climate Change and Climatic Classification

Topic	Teachers' Name
1. Condensation: Processes and forms. Mechanism of precipitation: Bergeron-Findeisen theory, collision and coalescence. Forms of precipitation.	CG
2. Air mass: Typology, origin, characteristics and modification.	CG
3. Fronts: warm and cold; frontogenesis and frontolysis.	BS
4. Weather: stability and instability; barotropic and baroclinic conditions.	BS
5. Circulation in the atmosphere: Planetary winds, jet stream and monsoons.	BM
6. Tropical and mid-latitude cyclones.	BM
7. Evidences and causes of climate change.	SG
8. Climatic classification after Köppen, Thornthwaite (1948).	SG

CC6: Theory (Statistical Methods in Geography)

Unit: 1

Topic	Teachers' Name
1. Importance and significance of Statistics in Geography. Discrete and continuous data, population and samples, scales of measurement (nominal, ordinal, interval and ratio), sources of data.	IM
2. Collection of data and formation of statistical tables	IM
3. Sampling: Need, types, and significance and methods of random sampling.	IM
4. Distribution: frequency, cumulative frequency.	IM

Unit- 2

Topic	Teachers' Name
1. Central tendency: Mean, median, mode, partition values.	BM
2. Measures of dispersion range, mean deviation, standard deviation, coefficient of variation.	BM
3. Association and correlation: Rank correlation, product moment correlation.	SG
4. Linear Regression and time series analysis.	SG

CC 6: Practical (Statistical Methods in Geography)

Topic	Teachers' Name
1. Construction of data matrix with each row representing an aerial unit (Districts / Blocks / Mouzas / Towns) and corresponding columns of relevant attributes.	BM
2. Based on the above, a frequency table, measures of central tendency and dispersion would be computed and interpreted.	BM
3. Histograms and frequency curve would be prepared on the dataset.	SG
4. Based on of the sample set and using two relevant attributes, a scatter diagram and regression line would be plotted and residual from regression would be mapped with a short interpretation.	SG

CC 7 – Geography of India**Unit 1: Geography of India**

Topic	Teachers' Name
1. Geology and physiographic divisions	BS
2. Climate, soil and vegetation: Characteristics and classification	BM
3. Population: Distribution, growth, structure and policy	BM
4. Distribution of population by race, caste, religion, language, tribes	IM
5. Agricultural regions, Green revolution and its consequences	IM
6. Mineral and power resources distribution and utilisation of iron ore, coal, petroleum	SG
7. Industrial development since independence.	SG
8. Regionalisation of India: Views of Spate and Bhatt.	CG

Unit 2: Geography of West Bengal

Topic	Teachers' Name
1. Physical perspectives: Physiographic divisions, forest and water resources	BS
2. Population: Growth, distribution and human development	BM
3. Resources: Mining, agriculture and industries	SG
4. Regional Development: Darjeeling Hills and Sundarban	CG

SEC 1 – Computer Basics and Computer Applications

Topic	Teachers' Name
1. Numbering Systems; Binary Arithmetic	BS
2. Data Computation, Storing and Formatting in Spreadsheets: Computation of Rank, Mean, Median, Mode, Standard Deviation, Moving Averages, Derivation of Correlation, Covariance and regression; Selection of technique and interpretation.	BS
3. Preparation of Annotated Diagrams and its interpretation: Scatter diagram and Histogram	BS
4. Internet Surfing: Generation and extraction of information	BS

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CC-11: Research Methodology & Field Work

Unit 1: Research Methodology

Topic	Teachers' Name
1. Research in Geography: Meaning, types and significance	IM
2. Significance of Literature review in research	IM
3. Defining research problem, objectives and hypothesis. Research materials and methods	IM
4. Techniques of writing scientific reports: Preparing notes, references, bibliography (APA Style), abstract and keywords	IM

Unit 2: Field Work

Topic	Teachers' Name
1. Fieldwork in Geographical studies – Role and significance. Selection of study area and objectives. Pre-field preparations. Ethics of fieldwork	IM
2. Field techniques and tools: Questionnaires (open, closed, structured, non-structured). Interview with special reference to focused group discussions.	IM
3. Field techniques and tools: Landscape survey using transects and quadrants, constructing a sketch, photo and video recording.	CG
4. Collection of samples. Preparation of inventory from field data. Post-field tasks.	CG

CC-11 (Practical): Research Methodology and Field Work

Topic	Teachers' Name
Preparation of field Report	IM,CG, BS, BM, SG

CC 12: Remote Sensing and GIS

Unit 1: Remote Sensing

Topic	Teachers' Name
1. Definition, Concepts and Principles of Remote Sensing (RS): Types of Air Photo, RS satellites, sensors and platforms.	SG
2. EMR Interaction with Atmosphere and Earth Surface, Sensor resolutions and their applications with reference to IRS	SG
3. Principles of False Colour Composites (FCC) from IRS LISS-III and Landsat Images (ETM+) data: Image Processing, Pre-processing; Enhancement; Classification.	BS
4. Principles of image interpretation for Forest, Water and Soil	BS

Unit 2: GIS and GNSS

Topic	Teachers' Name
1. Definition and Components of Geographical Information System (GIS) and raster and vector data structures	SG
2. Principles of preparing attribute tables and overlay analysis	CG
3. Principles of GNSS positioning - Uses and Waypoint Collection Methods	CG
4. Applications of Geographical Information System in Flood Management and Urban Sprawl	CG

CC 12 (Practical): Remote Sensing and GIS

Topic	Teachers' Name
1. Georeferencing of Scanned Maps	BS
2. Preparation of FCC using IRS LISS-III and/or Landsat (ETM+) data	BS
3. Preparation of LULC Map by Supervised Image Classification (Maximum Likelihood) using IRS LISS-III or Landsat (ETM+) data	BS
4. Digitisation of Point, Line and Polygon Features and Preparation of Thematic Map (using bar, pie and choropleth method)	BS

DSE-1 (Theoretical): Cultural and Settlement Geography**Unit 1: Cultural Geography**

Topic	Teachers' Name
1. Definition, Scope and Content of Cultural Geography	SG
2. Development of Cultural Geography	SG
3. Concept of Cultural Hearth, Realm; Cultural Landscape	IM
4. Cultural Innovation and Diffusion; Diffusion of Major World Religions	IM
5. Cultural Segregation, Cultural Diversity, and Acculturation	IM
6. Major Races of the World: Distribution and Characteristics	IM

Unit 2: Settlement Geography

Topic	Teachers' Name
1. Scope and Content of Settlement Geography	BM
2. Definition and Characteristics of Rural Settlement	BM
3. Rural Settlements: Site and Situation	BM
4. Urban Settlements: Census Definition, Urban Outgrowth, Urban Agglomeration	BM
5. Urban Morphology: Classical Models of Burgess, Hoyt, Harris and Ullman	BM
6. Functional Classification of Cities: Harris and Nelson	BM

DSE-2 (Theoretical): Population Geography**Unit 1**

Topic	Teachers' Name
1. Development of Population Geography; Relation between Population Geography and Demography	IM
2. Determinants of Population Dynamics; Concept of Optimum Population	IM
3. Theories of population growth: Malthusian Theory and Marxian Approach, Demographic Transition Model	IM

4. Distribution, Density and Growth of Population in India since 1951	IM
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Unit 2

Topic	Teachers' Name
1. Population Composition and Characteristics: Age-Sex; Female-Male Ratio	CG
2. Measures of Fertility and Mortality	CG
3. Population Composition of India: Rural and Urban, Occupational Structure as per Census of India	SG
4. Migration: Theories, Causes and Types	SG
5. Concept of Human Development Index	SG
6. Population and development: population-resource regions,	BM
7. Population policies in Selected Countries: Sweden and China	BM
8. Contemporary Issues in Population: Health and Unemployment	CG

NOTE:

1. IM- Indranil Mondal
2. BM- Biswajit Mondal
3. CG- Chandan Ghosh
4. BS – Biplob Sen
5. SG – Sajal Ghosh


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