

GEOGRAPHY DEPARTMENT SYLLABUS

SEMESTER - I

Paper – I : Physical Geography

1. Introduction: Nature and scope of physical geography; Origin of solar system (Bigbang theory and Inter-stellar dust hypothesis)
2. Atmosphere - Composition and structure of the atmosphere; Heat balance; Tropical cyclones; Monsoon; Climatic classifications (Koppen & Thornthwaite)
3. Rocks and minerals – origin and composition; Forces - endogenetic and exogenetic; Interior of the earth; Continental drift; Earthquake and volcano
4. Surface configuration of the ocean floor; Tides and oceanic currents; Distribution of ocean salinity
5. Basic concepts in hydrology – Hydrological cycle; Precipitation (forms and types); Human impact on hydrological cycle

SEMESTER - II

Paper – II : Human Geography

1. Introduction: Defining human geography; Major themes: Man - environment relationship- Determinism, Possibilism and Neo-determinism and their contemporary relevance
2. Space and society: Cultural regions; Global distribution of race; religion and language
3. Population: Growth and distribution; composition; Demographic Transition Theory
4. Settlements: Types of rural settlements; Types of urban settlements; Trends and patterns of world urbanization
5. Human adaptation to the environment with special references to the Eskimos, Bushman, Masai and Gujjars

SEMESTER - III

Paper – III : Geography of India

1. Physical: Physiographic division, soil, vegetation and climate (characteristics and classification)
2. Population: Distribution and growth; Urbanization-pattern and growth
3. Economic: Mineral and power resources - distribution of iron ore, coal, petroleum; Agriculture-production and distribution of rice, wheat and tea; Economic region (Sengupta)
4. Social: Distribution of population by race, caste, religion, language, tribes and their correlates; Pattern of development-interstate comparison
5. Regional geography of Mizoram: Physical - physiography, drainage and climate; Population - distribution and growth; social and economic characteristics

SEMESTER - IV

Paper – IV : Cartographic Technique (Practical)

1. Scales- Types and construction of scales – Plain scales and diagonal scales; Reduction and enlargement of map
2. Contours and profiles: Hills, Plateau, V-shaped valley, River meander
3. Maps – Classification and Types; Map projections – classification, properties and uses;

- Graphical construction of Polar zenithal stereographic, Bonne's and Mercator's projections.
4. Thematic mapping techniques – Dot, Choropleth, Flow diagram, Proportionate circles and Sphere
 5. Conventional signs and symbols; Interpretation of Topographical maps in respect to relief and drainage or transportation and settlement

SEMESTER - V

Paper – V : Geographical Thought

1. Pre-Modern period- Early origins of geographical thinking with reference to classical and medieval philosophies.
2. Modern period - Disciplinary trends in Germany, France, Britain and United States of America.
3. Paradigm in geography; Environmental determinism and Possibilism; Areal differentiation/Regional geography; Systematic vs. Regional geography
4. Quantitative revolution and Spatial science school, Idiographic and Nomothetic; Behavioural geography; Systems theory.
5. Humanistic geography; Radical geography; Feminist geography; Post-modern geography.

Paper – VI : Economic Geography

1. Introduction: Concept and classification of economic activity; Characteristics of developed and developing countries.
2. Primary activities: Subsistence and commercial agriculture, forestry, fishing and mining.
3. Secondary activities: Manufacturing (Cotton Textile, Iron and Steel); Concept of Manufacturing regions, Special Economic Zones (SEZs) and Technology parks
4. Tertiary Activities: Transport, Trade and Services; Economic globalization
5. Factors affecting location of economic Activity with special reference to Agriculture, Industry and Services; Location theories –Weber's and Christaller's

Paper –VII : Surveying & Statistical Techniques (Practical)

A. Surveying

1. Surveying by Plane table (intersection and radial methods, plotting and interpretation of the surveyed map); Dumpy level; Prismatic compass survey (open and closed traverse)
2. Preparation and analysis of slope map (Wentworth's method); Drainage density and drainage frequency

B. Statistics

3. Scales of measurement; Tabulation and descriptive statistics; frequency distribution; measures of central tendency
4. Measures of dispersion (Range, Standard deviation, Variance and Coefficient of variation); Sampling: purposive, random, systematic and stratified
5. Measures of association: Product moment correlation and simple regression Class Record for Statistics:

Each student will submit a practical record containing five exercises:

1. Construct a data matrix of about 10 x 10 with each row representing an areal unit (districts or villages or towns) and about 10 columns of relevant attributes of the areal units.
2. Based on the above table, a frequency table, measures of central tendency and dispersion would be computed and interpreted for any two attributes.

3. Histograms and frequency curve would be prepared on the entire data set and interpreted for one or two variables.
4. From the data matrix a sample set (about 20 %) would be drawn using, random, systematic, and stratified methods of sampling and locate the samples on a map with a short note on methods used.
5. Based on of the sample set and using two relevant attributes, coefficient of correlation would be computed and a scatter and regression line would be plotted with a short interpretation.

OPTIONAL

Paper –VIII (A) : Population Geography

1. Nature and scope of population geography; Sources of population data with special reference to India (Census, Vital Statistics and NSSO)
2. Determinants and patterns of population size, distribution and growth; Theories of population – Malthusian Theory, Marxian and Demographic Transition Theory
3. Population dynamics: Fertility, Mortality and Migration – measures, determinants and implications
4. Population composition and characteristics – Age-sex composition; Rural and urban composition; Literacy
5. Contemporary Issues – Ageing; Sex ratio; HIV/AIDS

Paper –VIII (B) : Agriculture Geography

1. Nature and scope of Agricultural geography; Approaches to the study of agricultural geography: environment, economic, ecological and systematic approaches; Origin and dispersal of agriculture
2. Determinants of agriculture- physical, socio-economic, technological and institutional
3. Agricultural Systems of the World (Whittlesey's classification); Agricultural land use model (Von Thunen - its modification and relevance), Sinclair's Model
4. Agricultural regionalization: Agro-climatic regions of India, Agricultural regions of India, Agricultural productivity and efficiency region wrt India
5. Green Revolution in India-Its socio-economic and ecological implications

SEMESTER - VI

Paper – IX : Geomorphology

1. Nature and scope of Geomorphology; Fundamental concepts related to –uniformitarianism, process, climate and slope (based on Thornbury); Modern trends in Geomorphology
2. Earth movements: Endogenetic movements; Diastrophism, Epeirogenetic movement; Orogenetic movements; Broad warps, Folds and Faults; Plate tectonics
3. Geomorphic process: weathering, mass wasting; Cycle of erosion-Davis and Penck
4. Fluvial, Glacial and Peri-glacial landforms
5. Karst topography; Aeolian and Coastal landforms

Paper – X : Remote Sensing & Geographical Information System

1. Aerial photography: definition, historical development of aerial photography, types and geometry of aerial photographs

2. Satellite remote sensing: principles and components; types of platforms and sensors; EMR interaction with atmosphere and Earth's surface; Satellites (LANDSAT and IRS)
3. Image processing and data analysis: Pre-processing (Radiometric and Geometric Correction), Enhancement (Filtering), Classification (Supervised and Unsupervised); Geo-referencing; Editing and Output; Overlays
4. Geographical Information System: definition, concepts and components; types of data (Spatial and Non-spatial); data models (Raster and Vector).
5. Application of remote sensing and GIS: Interpretation of land-use and land cover; Urban sprawl analysis; forest monitoring.

Paper – XI : Remote Sensing & GIS and Project Work (Practical)

Section-A (30 marks including practical record book (5 marks) and viva-Voce (5 marks)*)

1. Two (2) exercises will be done from Aerial Photos and Satellite Images (scales, orientation and interpretation).
2. Three (3) exercises in GIS including (i) image rectification (ii) Identification of point, linear and aerial features and (iii) supervised and unsupervised classification should be done by using GIS software.

Section – B (15 marks)

3. Research Methodology: meaning, objectives, types, approaches and significance of research.
4. Research process, methods of data collection.
5. Processing and analysis of data; Interpretation and report writing.

Section C- Project writing (30 marks)

The candidates are expected to study a village, an urban ward or a small town for a period not exceeding one week and prepare a report (to be typed at A4 size, containing about 40 pages) on a theme assigned to them connected with their optional papers. The project report is expected to reflect some original interpretation of the theme based on field observations. The concerned department (College) must assign a supervisor and the topic be decided at the end of the fourth semester to enable the student to put in the required time to complete the project report. (For end-Semester examination, the project work will carry thirty (30) marks including twenty (20) marks for project report and ten (10) marks for viva voce.)

* Colleges are expected to procure materials, instruments and softwares required to perform the practical works in GIS & RS.

OPTIONAL

Paper – XII (A) : Urban Geography

1. Urban geography: Introduction, nature and scope; history of urbanization.
2. Patterns of urbanisation in developed and developing countries.
3. Functional classification of cities: Quantitative and Qualitative methods.
4. Laws and Theories: Rank-size rule, Primate city concept, Central place theory, Urban land-use theories.
5. Urban Issues: problems of land-use, housing, slums, and civic amenities (water and transport): Case studies of Delhi, Mumbai, and Aizawl.

Paper – XII (B) : Political Geography

1. Understanding politics, geography and political geography; Development of political geography as a discipline; Concept of nation; Elements of state and emergence of

nation-state

2. Geopolitics; Theories (Heartland and Rimland); Geopolitical concepts of buffer states, landlock, core and periphery; boundaries and frontiers: types of boundaries
3. Electoral geography – geography of voting, geographic influences on voting pattern, geography of representation, gerrymandering
4. Political geography of resource conflicts: interstate water disputes, forest right and minerals
5. Politics of displacement: issues of relief, compensation and rehabilitation with reference to dams and special economic zones (SEZs)