

**GOVERNMENT OF ARUNACHAL PRADESH  
DEPARTMENT OF PLANNING  
ITANAGAR.**

**SYLLABUS FOR DIRECT RECUITMENT OF RESEARCH  
OFFICER  
GEOGRAPHY – PAPER –I (Pg. No. 2-4) & II (Pg. No. 5-9)**

## PAPER - I

### GEOMORPHOLOGY

**UNIT I:** Nature, scope, trends and development of Geomorphology.

**UNIT II:** Landscape evolution/development theories: (W.M. Davis, W. Penck, L.C. King, Hack)

**UNIT III:** Geomorphic processes and landform: Fluvial, Aeolian, Glacial.

**UNIT IV:** Drainage pattern: type, evolution, development: relation between topography and structure.

**UNIT V:** Interruption and movement of base level: isostatic, eustatic and climatic changes.

### CLIMATOLOGY

**UNIT I:** Climatology – Nature and scope and its relationship with other sciences.

**UNIT II:** Air masses, fronts and associated atmospheric disturbances (cyclogenesis and cyclolysis).

**UNIT III:** Regional Climatology: Polar and highland climates, Monsoon and Mediterranean.

**UNIT IV:** Applied climatology: Human responses to climate; climate and agriculture, climate and housing.

### ECONOMIC GEOGRAPHY

**UNIT I:** Economic Geography: Nature, scope and approaches; Definition, concepts and classification of resources.

**UNIT II:** Agricultural regions and typology; Von-Thunen's Theory of Agricultural Location and its subsequent modifications.

**UNIT III:** Mineral and power resources: Iron – ore, coal, petroleum, manganese & bauxite and hydro power.

**UNIT IV:** Bases of industrialization and factors of localization: Industrial location theories of Weber, Losch and Smith; industrial regions of the world.

**UNIT V:** Transport and international trade: Factors, bases and trends

## BIOGEOGRAPHY

- UNIT I:** Scope and development of Biogeography; Environment, Habitat and Plant-animal association.
- UNIT II:** Elements of plant geography, distribution of forests. Plant successions in newly formed landforms. Examples from floodplains and glacial fore fields.
- UNIT III:** Zoogeography and its environmental relationship.
- UNIT IV:** Paleo botanical and Paleo climatologically records of environment change.
- UNIT V:** National Forest Policy of India; Conservation of biotic resources.

## HISTORY OF GEOGRAPHIC THOUGHT

- UNIT I:** Geographical ideas in ancient and medieval period: Contributions of Indian, Greek and Roman scholars.
- UNIT II:** Emergence of Geography as a scientific discipline: Impact of Explorations and discoveries. Contributions of founders of Modern Geography.
- UNIT III:** Contributions of German (Richthofen, Ratzel), French (Vidal de La Blache) and Anglo – American Geographers (Mekinder, Davis, Hartshorne).
- UNIT IV:** Nature of Dichotomies in Geography: Systematic and Regional, Determinism and Possibilism.
- UNIT V:** Modern Techniques and Concepts in Geographic Analysis: Remote Sensing, and Geographic Information system.

## ENVIRONMENTAL GEOGRAPHY

- UNIT I:** Environmental Geography: Nature, Scope and Approaches.
- UNIT II:** Environmental perception: Meaning and factors of environmental perception, environmental perception at different levels (local, national and global).
- UNIT III:** Environmental Hazards: Earthquake, Volcanoes, Flood, Drought, Cyclone, Landslide and Soil Erosion.
- UNIT IV:** Human-induced Environmental Hazards: Deforestation, Agricultural practices, Technological Hazards, Hazards associated with Dam and Reservoirs, Desertification.

**UNIT V:** Environmental Conservation, Monitoring and Management: Environmental Education, Concept of Sustainable Development.

## REGIONAL GEOGRAPHY OF INDIA

**UNIT I:** India in the context of Asia and the world: Unity in diversity.

**UNIT II:** The concepts of region and regionalization, types of region: physical, agricultural, industrial and resources regions of India.

**UNIT III:** Changing nature of Indian economy. The factors governing development of regions at various levels.

**UNIT IV:** A critical evaluation of methods and techniques for regionalization in the Indian context. Review of the leading schemes of classification of region: Spate & Learmouth and R.L. Singh.

**UNIT V:** Physical, resource endowment, demographic and economic study of following regions of India:

(a) Himalayas : Arunachal Himalaya

(b) Indo – Gangetic Plain : Middle Ganga Plain

## SOCIAL GEOGRAPHY

**UNIT I:** Nature, Scope, significance and development of social geography.

**UNIT II:** Geographical Factors in India's Social Evolution; Areas of Attraction; areas of isolation and areas of relative isolation.

**UNIT III:** Towards a social geography of India; bases of social region formation; role of race, caste, religion and languages.

**UNIT IV:** Components of social diversity; tribes and their distribution, race and language. Tribal regions of India.

**UNIT V:** Indian unity and diversity. Impact of globalization and social transformation in India

**PAPER -II**

**CULTURAL GEOGRAPHY**

- UNIT I:** Nature, scope and significance of cultural geography.
- UNIT II:** Theories of evolution of races, Physical characteristics, early patterns of migration and distribution.
- UNIT III:** Evolution of cultural groups: Development of early cultural practices and diversity in India.
- UNIT IV:** Bases and elements of cultural regions in India: race, caste, language, dialect, religion –cultural religions of India.
- UNIT V:** The Indian tribal groups; Race, language, distribution and cultural adaptations and response to impulses of social change.

**POPULATION GEOGRAPHY**

- UNIT I:** Nature & scope of population Geography and its relationship with demography.
- UNIT II:** Measures and methods of estimating fertility and mortality (Crude Birth Rate, Age Specific Birth Rate, Child Women Ratio, Crude Death Rate, Infant Mortality Rate and Age Specific Death Rate)
- UNIT III:** Population Growth and Distribution: World patterns and Indian growth trends. Determinants of population distribution.
- UNIT IV:** Human Migration: Types of migration, causes and consequences of migration.
- UNIT V:** Population composition: age, sex, literacy, caste and tribe. Population theories: Malthusian & Marxist.

**REGIONAL DEVELOPMENT AND PLANNING: CONCEPTS, PRINCIPLES AND TECHNIQUES**

- UNIT I:** Geography and its role in regional development and planning: Concepts of region and regionalism, growth and development: Regional and economic, disparity and diversity.
- UNIT II:** Regional development theories (I):

- (i) Economic growth doctrines and their impact on regional growth theories: F. Perroux, W. Isard, A. Losch.
- (ii) Western concerns: Paradigm shift from regional resource development to spatial planning of economic development for the third world; G. Myrdal, A.O. Hirschman.

**UNIT III:** Regional development theories (II):

- (i) Rethinking development: Club of Rome, Debate on territorial vs. functional development, development from above vs. development from below.
- (ii) Period of disciplinary integration: Development of multidisciplinary paradigm of regional theory.

**UNIT IV:** Regional Planning strategies:

- (i) Urban industrial growth strategies and diffusion of modernization.
- (ii) Regional planning in Five Year Plans. Spatial aspects of sectoral development: agriculture, industry and infrastructure.

**UNIT V:** Schemes of regionalization for planning: V. Nath, L.S. Bhat, P. Sengupta and Galina Sdyasuk; territorial production and complexes. Regional development planning; the state and regional development in India.

## **REMOTE SENSING AND GEOGRAPHICAL INFORMATION SYSTEM**

**UNIT I:** Bases of Remote Sensing: Definition, interaction of Electro-Magnetic Radiation (EMR) with atmosphere and earth surface. Sensors and remote sensing data products.

**UNIT II:** Aerial photographs and photogrammetry: types of aerial photos, fundamentals of air photographs interpretation. Geometry of aerial photographs: tilt and relief displacement.

**UNIT III:** Digital Image Processing: restoration, enhancement and classification: supervised and unsupervised.

**UNIT IV:** Application of Remote Sensing in terrain evaluation, land use and forest resource inventory.

**UNIT V:** Geographical Information System: Concepts, data capture and automation, integration of Digital Image Processing (DIP) and Global Positioning Systems (GPS) in Geographic Information System (GIS) for geographic analysis and output.

## GEOGRAPHY OF NORTH EAST INDIA

**UNIT I:** Geo- environment background: Physiography, climate drainage, Soils, flora and fauna.

**UNIT II:** Population of North East India: Origin and migration of different ethnic and linguistic groups; distribution, density and growth rate of population.

**UNIT III:** Agriculture and Plantation: Jhum and settled cultivation, tea plantation.

**UNIT IV:** Mineral resources and industries: coal, petroleum, limestone; petrochemical industry, cement.

**UNIT V:** Socio- economic and geopolitical issues:

- (a) Structural transformation of NE, Resource endowment -Hydro-power potential
- (b) Immigration, Ethnic Movement.
- (c) Deforestation, Flood Hazard.

## SETTLEMENT GEOGRAPHY

**UNIT I:** Nature, scope and significance of settlement Geography.

**UNIT II:** Evolution and development of rural settlements. Site and situation, patterns and types of settlement with special reference to India: histogenesis, morphogenesis and pattern formation.

**UNIT III:** Urban growth factors and process of urbanization. Urbanization in the third world and its consequences.

**UNIT IV:** Functional classifications of towns (Census and Ashok Mitra's Singh method): urban system and analysis of towns with special reference to India.

**UNIT V:** Central Place theory: its application in India; Intra & inter urban interaction models.

## AGRICULTURAL GEOGRAPHY

**UNIT I:** Nature, scope and Approaches in agricultural geography: (commodity, systematic, regional and deterministic).

**UNIT II:** Factors influencing agriculture: physical, economic and cultural.

**UNIT III:** Agricultural location theory: Von Thunen's theory of agricultural location, critical evaluation and applicability to India.

**UNIT IV:** Major agricultural regions of the world and India: Geographical factors affecting distribution.

**UNIT V:** Modernization of Agriculture: Technological development impact of green revolution on Indian agriculture.

## **GEOGRAPHY OF RURAL DEVELOPMENT AND PLANNING**

**UNIT I:** Rural Development: A Geographical perspective; settlements structure and spatial organization: concepts of integrated rural Landuse and settlement Planning.

**UNIT II:** Dimensions of Rural Sociology: Rural-Urban relationships; Dichotomy and integration of rural and urban components in health, education, religion, marriage and migration.

**UNIT III:** Dimensions of Rural Economy: Physical and human resources; rural landuse pattern; sectoral structure of the rural economy and employment; agriculture, household industries and infrastructural aspects.

**UNIT IV:** Rural poverty and under development: Concept and measure of rural poverty. Critical review of rural development strategies of India-Case studies of Governmental and other agencies. Implications of "balanced development" of rural and urban economies.

**UNIT V:** Tribal Development Planning: Study of tribal villages; Planning for the development of tribal village in NE region of India with special reference to Arunachal Pradesh.

## **ADVANCE GEOMORPHOLOGY**

**UNIT I:** Development of Geomorphology: Contribution of USA, European and India scholars.

**UNIT II:** Geomorphic concepts: uniformitarianism closed and open system, climatogenetic geomorphology.

**UNIT III:** Landscape evolution: Radiocarbon dating, tree-ring dating (Dendrochronology), Lichnometry.

**UNIT IV:** Evolution of landforms and drainage in (a) Doamal (b) faulted and (c) folded structures.

**UNIT V:** Applied Geomorphology: Application of Geomorphology in Agriculture, Resource mapping & Civil Engineering.



## POLITICAL GEOGRAPHY

- UNIT I:** Nature, scope, significance and recent development in political geography; various approaches and significance.
- UNIT II:** Geographic Elements and the State: Physical Elements; Human elements; Economic elements; Political geography and environment interface.
- UNIT III:** Themes in Political Geography: State, Nation, Nation-State and Nation-building, Frontiers and boundaries.
- UNIT IV:** Geopolitical significance of Indian Ocean: Political Geography of South-East & West Asia.
- UNIT V:** Political geography of contemporary India with special reference to North-East Interstate issues (like water disputes & riparian claims) and conflict resolutions insurgency in border states; Emergence of New States; Federal India: Unity in Diversity.