

Syllabus of Ph.D. Entrance Examination

05. GEOGRAPHY

1. **Advanced Geomorphology:** Fundamental concepts of geomorphology; Endogenetic and exogenetic forces; Denudation: Weathering and erosion; Geosynclines, Continental drift, Plate tectonics, Concept of geomorphic cycle, Landforms associated with fluvial, arid, glacial coastal and karst cycles.
2. **Atmosphere and Climatology :** Composition and structure of atmosphere; Heat budget of the earth; Distribution of Temperature; Atmospheric pressure and general circulation of winds; Monsoon and jet stream; Tropical and temperate cyclones; Classification of world climates; Koppen's and Thornthwaite's schemes.
3. **Oceanography:** Ocean deposits; Coral reefs; Temperature and salinity of the oceans; Density of sea water; Tides and ocean currents
4. **Evolution of Geographical Thoughts:** General character of Geographical knowledge during ancient and medieval periods; Foundation of modern geography; Determinism and possibilism; Aerial differentiation and spatial organization.
5. **Population and Settlement Geography:** Population: Patterns of world distribution, growth, density, migration and demographic transition; Settlements: site, situation, type, size, spacing and internal morphology of rural and urban settlements; City region, primate city, rank size rule,

settlement hierarchy, Christaller's Central Place Theory, August Losch's theory of market centres.

6. **Resource and Economic Geography:** Natural resources: renewable and non-renewable; Ecology and Ecosystem; Sectors of economy; primary, secondary, tertiary and quaternary; Measurement of agricultural productivity and efficiency; crop combination and diversification; Von Thunen's Model; Classification of industries: Weber's and Losch's approaches; Resource based industries; Models of transportation and transport cost: Accessibility and connectivity.
7. **Political, Social and Cultural Geography:** Heartland and Rimland theories; Boundaries and frontiers; Nature of administrative areas and Geography of public policy and finance; Ethnicity; tribe; dialect; language; caste and religion; Concept of social well-being; Culture: Areas and cultural regions; Human races; Habitat; economy and society of tribal groups.
8. **Regional Planning:** Concept of region in geography; Concept of planning regions; Types of regions; Methods of regional delineation; Regional planning in India; Indicators of development; Regional imbalances: Evolution, nature and scope of town planning with special reference to India, and Fundamentals of Town and Country Planning.
9. **Advanced Geography of India:** Physiographic divisions; Climate: Its regional variations; Vegetation types and vegetation regions; Major soil types; Irrigation and agriculture; Population distribution and growth; Settlement

patterns; Mineral and power resources; Major industries and industrial regions.

- 10. Cartography and Statistical Techniques:** Types of maps; Techniques of spatial patterns of distribution; Mapping of location-specific data; Accessibility and flow maps; Remote sensing and computer application in mapping; Digital mapping; Geographic Information System (GIS); Sources and types of data; Frequency distribution and cumulative frequency; measures of central tendency; measures of dispersion and concentration; Lorenz curve; Coefficient of correlation; Multiple correlation; Regression analysis; Nearest Neighbour analysis; Scaling techniques; Rank score; Weighted score etc.