Syllabus: Ph.D. Entrance Test

Geography

1. **Physical Geography**

   Geomorphology: Fundamental Concepts, Theories about origin of Earth, Earth's Interior-Composition and Structure, Continental Drift Theory, Sea Floor Spreading theory, Plate tectonic theory, Major Landforms and forces behind their origin- Mountains, Plateaus and Plains, Geomorphic processes- Weathering, Denudation and erosion, Fluvial, glacial, Aeolian, coastal, karst, Rocks- Origin, Classification and Characteristics, Slope.

   Climatology- Structure and Composition of Atmosphere, Atmospheric Pressure and Temperature- Horizontal, Vertical and seasonal distribution, Insolation and heat Budget, Winds Distribution, Atmospheric Disturbance, Atmospheric Moisture- Condensation and Precipitation types, Classification of world climates; Koppen's and Thoramwaite's schemes.

   Oceanography- Ocean Deposits, Movements of Ocean Water, Factors affecting Ocean salinity and temperature, Tides and ocean currents.

2. **Environment and Environmental Issues**

   Man and Environmental relationships- Determinism, possibilism and ecology, Exploitation of Natural resources and environmental hazards- soil erosion, Pollutions- air, water and land, Biodiversity and conservation of forests; Forms and functions of ecosystem; Conservation and management of ecosystems.

3. **Human geography**

   Economic Geography- World Distribution of resources- renewable and non-renewable,

   Distribution of forests & vegetation, fisheries, agriculture & soils and their economic importance.

   Population Geography- Distribution, Density, Growth, Literacy of Population over world, Trends and patterns of Urbanization.

4. **Geographic Thought**

   General character of Geographic knowledge during the ancient and medieval period; Foundations of Modern Geography; Determinism and possibilism; Areal differentiation and spatial organisation.

5. **Geography of India-**

   Natural environment-Relief, drainage, climate, vegetation and soil distributions,

   Population- Distribution, density, growth, sex ratio, migration, literacy, urbanization.

   Economy- Agriculture (Characteristics, cropping pattern, green revolution and problems of agriculture), Industries (Distribution, Location and Production)

   Transport- Railways, Roads, Airways and Navigation.

6. **Geography of World-**

Location of areas, Natural resources, Demographic and economic resources of continents- Asia, Australia, Europe, North America, South America and Africa; Classification of industries : Weber's and Losch's approaches; Resource based and footloose industries. Transportation, Accessibility and connectivity.

7. **Statistical Methods**

   Data sources and types of data; Frequency distribution and cumulative frequency; Measures of central, tendency; Selection of class intervals for mapping; Measures of dispersion and concentration; Standard deviation; Lorenz Curve; Methods of measuring association among different attributes; Simple and Multiple correlation; Regression, scatter plot. Sampling techniques for Geographical analysis.

8. **Cartography-**

   Maps and Scales- History of cartography and types of maps. Scales- methods of representing scale; methods of construction of graphic scales- plain, comparative time, pace and diagonal scale.

   Directions, bearings and Representation of relief on maps and topographical sheets.

   Weather Maps- Schemes and Symbols, Weather maps of India

   Graphs- Line graph, climograph and hythergraph.

   Map Projections- Construction, Properties, Uses and Limitation of Projection- Cylindrical, Conical, Zenithal and Conventional.

   Remote sensing and computer application in mapping; Digital mapping; Geogf aphic Information System (GIS) : Thematic maps.