

**DEPARTMENT OF GEOGRAPHY**  
**BINOD BIHARI MAHTO KOYALANCHAL UNIVERSITY,**  
**DHANBAD**

**Syllabus for Ph.D. Entrance Test**

The questions will be set from the topics contained in the core (compulsory) papers of master's degree level course of this university.

**Module I (Geographical Thought and Research Methodology)**

Developmental History of Geography: Contribution of different scholars during Ancient, Medieval, and Modern period; Dualism in Geography: Systematic vs. Regional Geography, Physical vs. Human Geography, and Determinism vs. Possibilism; Quantitative Revolution in Geography; Behaviouralism; Regional Geography; Radical Geography; Feminist Geography; Methods of Geographical Studies; Research methods Vs Research Methodology; Hypothesis; Theories; Laws and Models; Research Design: Data Collection and Analysis, Determining Sample Design, Research Approaches.

**Module II (Geomorphology)**

Earth Movements: Epeirogenic and Orogenic, Isostasy, Plate Tectonics, Seismicity, Vulcanicity; Landform Occurrence and Causes of Geomorphic Hazards (Earthquakes, Volcanoes, Landslides, and Avalanches); Denudation and Weathering; Dynamics of Fluvial, Glacial, Aeolian, Marine, and Karst Processes and Resulting Landforms.

**Module III (Climatology and Oceanography)**

Composition and Structure of the Atmosphere; Insolation; Heat Balance of the Earth; Greenhouse Effect; Local Winds; Jet Streams; General Circulation in the Atmosphere; El Nino; Southern Oscillation (ENSO) and La Nina; Monsoon Winds; Norwesters; Global Warming; Environmental Impacts and Society's Response; Climatic Classification of Koppen and Thornthwaite; Coral Reefs; Impacts of Human on the marine Environment; Ocean Currents; Wave and Tides; Origin of Ocean Basins; Major Features of Ocean Basin.

**Module IV (Population and Settlement Geography)**

Sources of Population Data; Census Process of Major Countries; Migration: National and International Patterns; Population Distribution and the Growth Pattern of the World and India; Occupational Structure in India; Rural and Urban Structure of Population in India; Concepts

of Under Population, Over Population and Optimum Population; India's Population Policies; Population and Environment.

Rural Settlements (Types, Patterns and Distributions); Theoretical Models (Nearest Neighbour and Gravitational Model); Processes and Patterns of Urbanization; Origin and Evolution of Urban Settlements; Geographical Approaches to the Study of Urbanization; Functional Classification of Towns; National Urban Policy; Components of Urban Planning; Spatiality and Models: Size and Spacing of Cities, Rank Size Rule, Law of Primate city, Nearest Neighbour Analysis; City region; Rural Urban Fringe; Central Place Theory of Christaller and Losch; Theories of Internal Structure of Cities (Burgess, Hoyt and Harris and Ullman).

### **Module V (Geography of India and Jharkhand)**

INDIA: Physical Framework and Geological Formations; Climatic and Vegetation Regions; Agro-Climatic Regions and Industrial Regions; Mineral and Power Resources, Geopolitical Significance of Indian Ocean, Stability & Instability; Interstate issues (like Water Disputes & Riparian Claims) and Conflict Resolutions, Insurgency in Border States; Emergence of New States; Federal India: Module in Diversity, Reorganization of State, Urbanization, Tourism, Problems of Planning and Development.

JHARKHAND: Physical Basis of Regionalization and Human Resources, Economic and Inter-Linkages- Mineral Resources, Agriculture Landscape and Industrial Region.

### **Module VI (Regional Planning and Development: India)**

Regional Concept in Geography; Merits and Limitations for Application to Regional Planning and Development Approaches to Delineation of Different Types of Regions and their Utility in Planning; Measuring Levels of Regional Development and Disparities – A Case Study of Jharkhand; Regional Development in India – Problem and Prospects. Regions Hierarchy; Multilevel Planning in National Context; De-centralised Planning; People Participation in Planning.

Types of Region: Formal and Functional, Uniform and Model, Single Purpose and Composite Regions in the Context of Planning; Physical Regions; Resource Regions; Special Purpose Regions- River Valley Regions, Metropolitan Regions.

### **Module VII (Geography of Environment, Ecosystem and Resource Management, and Biogeography)**

Ecosystem: Structure and Function, Ecological Concepts, Food Chain and Food Webs; Energy Flow; Major Terrestrial Ecosystem of the World (Forests, Grassland and Desert); Biotic Succession and Regions; Biodiversity and its Conservation; Environmental Hazards and Disasters (Global Warming, Urban Heat Island, Atmospheric Pollution, Water Pollutions, Land Degradation); National Environment Programmes and Policies; International Environment Programmes and Policies; International Treaties (Brundtland Commission, Kyoto Protocol, Agenda 21, Sustainable Development Goals, Paris Agreement).

Problems of Resources Utilization; Pollution; Resources Appraisal and Policy Making; Man-Environment Relationship.

Environment, Habitat, and Plant-Animal Association, Biome Types; Elements of Plant Geography; Distribution of Forests and Major Communities; National Forest Policy of India; Conservation of Biotic Resources.

### **Module VIII (Geography of Tourism and Transport)**

Role of Foreign Capital and Impact of Globalization on Tourism; Growth and Problems of Urban Transportation; Transport and Environment Degradation; Vehicular Pollution and Congestion; Factors Influencing Tourism: Historical, Natural, Social, Cultural and Economical; Tourism Types: Eco-Ethno, Coastal and Adventure Tourism, National and International Tourism; Globalization and Tourism; Tourism Circuits; Environmental Laws and Tourism; Significance and Development of Transport Geography; Factors Associated with the Development of Transport System: Physical, Economic, Social, Cultural and Institutional; Technological and Regional Development and Transport Development.

### **Module IX (Social and Political Geography)**

Social Structure and Processes; Social Wellbeing and Quality of Life; Social Exclusion; Spatial Distribution of Social Groups in India (Tribe, Caste, Religion, and Language); Environment and Human Health; Diseases Ecology; Nutritional Status (Etiological Conditions, Classification and Spatial and Seasonal Distributional Patterns with Special Reference to India); Healthcare Planning and Policies in India.

Boundaries and Frontiers (With Special Reference to India); Heartland and Rimland Theories; Trends and Developments in Political Geography; Geography of Federalism; Geopolitics of World Resources; Geopolitics of Indian Ocean; Regional Organisations of Cooperation (SAARC, ASEAN, OPEC, EU).

### **Module X (Geographical Techniques)**

Types of Map; Scale; Methods of Representation of Relief Features; Interpretation of Topological Sheets; Types of Projection; Methods of Representing and Mapping of Population Data; Use of Remote Sensing Data and GIS, GPS; Statistical Analysis- Central Tendency, Standard Deviation.