Entrance test Syllabus for Geography
1-year PG Programme for Students completed 4-year graduation, (Eight Semesters)

Unit-I

1. Fundamental Concepts in Geography: Spatial Process and Pattern, Areal Differentiation, Spatial Organization
2. Approaches in Geography- Positivism, Pragmatism, Humanistic, Behaviouralism,
3. Dualism in Geography- Physical vs. Human, General vs. Regional, Ideographic vs.Nomothetic
4. Dichotomies in Geography- Environmental Determinism, Possibilism, Neodeterminism,
5. Environmentalism
6. Impact of Darwin's Theory on Development of Geography
7. Contribution of Phoenicians, Greeks, Romans and Arabs in Geography
8. Major Schools of Geographical Thought-German (Ratzel & Alfred Hettner); French (Vidal de la Blache & Jean Brunches); British (Meckinder& Stamp); American (W.M Davis & E. Churchill Semple) and Soviet Union (V.V. Dokuchaiev& Voeikov)

Unit-II

1. Nature and Scope of Geomorphology
2. Development of Geomorphology: European and American Schools
3. Principles of Geomorphology: Uniformitarianism and Neo-catastrophism
4. Geological Time Scale
5. Vulcanicity and Earthquake
6. Evolution of Landforms
7. Cycle of Erosion: W.M. Davis and W. Penck
8. Geomorphic Agents and Landforms: Fluvial, Aeolian, Glacial, Karst and Coastal

Unit-III

1. Structure of Earth's Interior- a. Seismological evidence; b. Zonation of Earth
2. Weathering and Mass Movement:
3. Wegner's theory of Continental Drift
4. Isostasy and seafloor Spreading,
5. Earthquakes: Origin, Scales of Measurement
6. Classification and Characteristics of Rocks
7. Weathering: Factors and Types
8. Endogenetic and Exogenetic Processes

Unit-IV

1. Composition and Structure of Atmosphere
2. Insolation, Heat Budget & Latitudinal Heat Balance
3. Vertical & Horizontal Distribution of Temperature
4. Normal Lapse Rate and Inversion of Temperature
5. Air masses and Fronts: Origin & Types
6. Climatic Classification Schemes:(i) Koppen (ii)Thornthwaite
7. Theories of Indian Monsoon: Classical & Modern Theory
8. Western Disturbances: Origin &Significanc

Unit-V

1. Evolution of Oceanography
2. Surface configuration of the ocean floor- continental shelf, continental slope, abyssal plain, mid- oceanic ridges and oceanic trenches
3. Distribution of temperature and salinity of oceans and seas, Ocean Currents
4. Marine deposits; Oceans as Store-house of resources for the future
5. Introduction to Hydrology, Hydrologic Cycle and Water Balance
6. Runoff: Virgin Flow, Surface Runoff, Overland Flow, Direct Runoff and Base Flow
7. Runoff Processes: Factors Affecting Runoff- Flood Hydrograph, Unit Hydrograph Analysis: Rainfall- Runoff Relationship

Unit-VI

1. Cryosphere and its Significance
2. Global Distribution of Glaciers
3. Classification System of Glaciers on the basis of Temperature and Location
4. Glacier Mass Balance
5. Glacial System Overview
6. Permafrost and Ground Ice
7. Glacier Hazards: GLOFs and Surge
8. Glacial Runoff and its Impact on the Environment

Unit-VII

1. Races of the world- their physical and socio-economic characteristics.
2. Major religious groups of the world
3. Human adaptation to environment: Eskimos, Bushman, Gujjars, Gonds.
4. Concept and Measures of Development
5. Sustainable Development: Concept and Goals
6. Concept of Human Development Index (HDI)
7. Global Population: Growth and Distribution - Patterns and Factors
8. Concepts of Over, under and Optimum Population

Unit-VIII

1. Economic Geography: Fundamental Concepts and Scope
2. Recent Themes: Agglomeration Economies, Commodity Chain, Knowledge Economy, Green Economy
3. Special Economic Zones and Technological Parks
4. Industrial Location Theories of Weber and Losch
5. Major Industrial Regions of the World
6. Industrial Policies of India: 1956 & 1991
7. Liberalization, Privatization and Globalization
8. Market Linkages: Market Centers, Retailing & Whole Selling and E-Commerce

Unit-IX

1. Recent Approaches in Urban Geography
2. Theories of city growth: Concentric zone, Sector and Multi-nuclei theory

3. Central Place Theory of Christaller
4. Urban Sprawl and Rural-Urban Fringe
5. Urban Heat Island and Green Belt
6. Urbanization in India: Trends and Pattern
7. Urban Poverty and Slums in India
8. National Urbanization Policy and Programmes
9. Occurrence of Groundwater: Aquifer, Aquiclude, Aquifuge and Aquitard

Unit-X

1. Regional Geography and types of regions
2. Approaches to Delineation of Region
3. History of Regional Planning in India
4. Hilly, Tribal and Drought Regions planning
5. Sustainable Development; Environmental, Social and Economic dimensions, MDGs & SDGs
6. Agenda 21, 2030 Agenda for Sustainable Development
7. Carrying Capacity: Concept & Measurements
8. Ecological Foot-Print Analysis

Unit-XI

1. Remote Sensing: Concept and Development
2. Types of Remote Sensing (Active and Passive)
3. Stages in Remote Sensing, Data Acquisition
4. Types and Characteristics of Platforms and Sensors
5. EMR & its interaction with atmosphere and Earth surface features.
6. Resolution and Types
7. Aerial Photographs and their Types,
8. Image Interpretation and its Elements

Unit-XII

1. GIS: Concept, Development & Components
2. Raster & Vector data
3. Geospatial Database: Development and Organization
4. Geographic Data: Types & Characteristics
5. Data quality and sources of errors
6. Global Positioning System (GPS)
7. Development of GPS System: NAVSTAR and GLONASS
8. Introduction to Global Navigation Satellite System (GNSS)

Unit –XIII

1. Environmental Geography: Concept and Scope
2. Human-Environment Relationships – Historical Progression, Adaptation in different Biomes.
3. Ecology: Concept and Scope
4. Ecosystem: Concept, Structure and Functions, Terrestrial Ecosystems: Forest and Grassland
5. Geography of Resources: Nature and Significance
6. Classification of Resources, Concept of Resource Exploitation, Accumulation and Degradation
7. Zimmermann's Primitive & Advance Model
8. Kirk's Decision Model

Unit-XIV

1. Land Use Planning: Concept and Scope
2. Drivers of Land Use Changes
3. Factors Governing Land Utilization
4. Land Capability Classification
5. Hazards: Definition and Concept
6. Classification of Hazards
7. Global and Regional Overview of Hazards
8. Flood, Drought: Causes, Impact and Distribution in India

Unit-XV

1. India - Geologic Structure, Physical Features
2. India - Drainage System (Indus, Ganga and Brahamputra)
3. India - Climate (Monsoon, Tropical Cyclones and Western Disturbance)
4. India - Natural Vegetation, Soils, Natural Regions
5. Agriculture, Crops (Food, Plantation and Commercial)
6. Industries: Metallurgical, Textile, Engineering, Chemical, Food, Leather, Forest and Agro-Industries
7. Population (Density, Distribution and Urbanization)
8. Multipurpose Projects

Unit –XVI

1. Major Industrial Regions of North America
2. Energy Resources of North America: Coal, Petroleum and Natural Gas
3. Drainage of Europe: Danube & Volga
4. Industrial Setup in Europe
5. Physiography of Asia
6. Drainage of Asia: Indus, Ganga & Mekong
7. Natural Resources in Asia: Iron Ore, Coal, Petroleum and Natural Gas
8. Demographic Profile of Asia

Sd/-
Prof. G. M. Rather
Head of the Department