

P G Department of Geography and Regional Development

M. Phill / Ph.D Entrance Test Syllabus of Geography w.e.f. 2010

Note:- The question paper shall comprise of two parts :

Part (I) Subjective part containing Six questions of which Four questions must be attempted (40 Marks);

Part (II) Multiple choice objective part containing 30 questions and all are to be attempted (30 Marks).

Unit-I

Geomorphology

1. Fundamental Concepts; a. Uniformitarianism, b. Geological Structures,
2. Multicyclic and Polygenic landforms
3. Geosynclines, Mountain building, Sea floor spreading, Plate Tectonics and Isostasy
4. Earth Movements; Orogenic and epirogenic
5. Denudation processes- weathering and erosion
6. Slope Elements and Slope Evolution
7. Theories of Landform Evolution: a. Gilbert, b. W. M. Davis, c. W. Penck, d. J.J. Hack,
8. Landforms associated with Fluvial, Glacial, Arid, Coastal and Krast cycles.
9. Application of Geomorphic Knowledge in: Hydrology, Mineral Exploration, Petroleum exploration, Urbanisation and Civil Engineering.
10. Morphometry of drainage basins- Stream ordering, bifurcation ratio, dissection index, hypsometric analysis and clinographic analysis.

Unit-II

Climatology

1. Composition and Structure of atmosphere, Insolation and Heat Budget,
2. Temperature Inversion, thermal anomaly
3. Distribution of temperature, atmospheric pressure
4. Global Circulation system ; a. Bay Ballet's law b. Coriolis Force, c. Ferrell's Law
5. Jet Streams & Rossby Waves, stability and instability of atmosphere
6. Air masses, Fronts & Frontogenesis
7. Cyclones: Tropical & Temperate
8. Types and distribution of precipitation
9. Tri-cellular Meridional pattern of atmosphere
10. Climatic classification; a. Koppen, b. Thornthwaite, c. Miller
11. Major Climates of the World ;
12. Oceanic Atmospheric Interaction- El- Nino Southern Oscillation, La – Nina;
13. Global warming: Greenhouse Effect, Ozone depletion & Sea Level change

14. Hydrological cycle.
15. Climatic Changes; a. Evidences & Indicators b. Possible causes

Unit-III

Oceanography

1. Importance & Significance of Ocean Studies
2. Evolution of Continent and Ocean Basins
3. Major Features of Ocean Basin: Continental Margin , Deep Ocean Basins & Mid-Oceanic ridges
4. Bottom relief of Pacific, Atlantic and Indian oceans
5. Marine deposits: Types & Origin
6. Surface Currents and Waves
7. Currents of Indian, Atlantic and Pacific oceans.
8. Tides and related theories: Equilibrium & Dynamic
9. Temperature and Salinity of oceans, Sea level changes
10. Biozones, Bio- Geochemical Cycle in the Oceans
11. Food and energy resources of the sea
12. Coral Reef: Theories of Formation
13. Impact of Humans on Marine Environment
14. Law of the Sea & Exclusive Economic Zone
15. Impact of Climate Change on Marine Biology

Unit-IV

Environmental Geography

1. Physical factors influencing world distribution of plants and animals
2. Ecosystem form and functions,
3. Trophical levels, ecological pyramid, ecological niche,
4. Energy flow models (U shaped energy flow model and Y shaped energy flow model),
5. Food chain and food web, ecological adaptations,
6. Major terrestrial ecosystems of the World- Forest, grassland, savanna, marine and mountain,
7. Biodiversity and its conservation.
8. Man induced environmental and ecological changes (Air pollution, Water pollution and contamination, Acidic rain and ozone depletion, Land degradation); Noise pollution.
9. Environmental management, Environmental impact assessment,
10. International Conventions. Environmental protection Act, Earth summit, Kyoto and Montreal protocol.
11. Wild life act, Forest act and Water act with reference to India.
12. Processes of Soil formation and development, Components of soil,
13. Physical and Chemical properties of soil: Factors affecting soil formation
14. Soil classifications, Soil conservation and its significance
15. Principals of soil conservation –Biological and mechanical.
16. Land capability classification

Unit-V

Geographical Thought

Beginning of Classical Geographical Thought - Contribution of Greeks and Romans, Geography during medieval period – Contribution of Arab and Indian Geographers, Foundation of Scientific Geography – Contribution of German, French, British and American schools. Conceptual and methodological developments during 20 the century. Geographical concepts - Geography as human ecology, Determinism, possibilism, Areal differentiation, Spatial organization, Neo-determinism. Paradigm shift in Geography – Positivism, Pragmatism, Idealism, Realism, Radicalism, Behaviouralism and Humanistic approach, Welfare approach. Scientific explanations; Inductive and Deductive, Quantitative revolution in Geography Darwin's impact on Geography.

Unit-VI

Population and Settlement Geography

Nature, Scope, subject matter and recent trends in population geography. World distribution and density of population Population Dynamics ; Measurement and Determinants; Fertility, Mortality, Migration Population Theories; Malthus, Demographic Transition, Ricardo Major Population Projection Techniques Population Resource Regions of the World; Population problems of developed and developing countries Human Development; Concept of Human Development Index and its Components. Evolution, Size and Growth and internal morphology of rural and urban Settlements. Site and Situation factors in the Development of Settlements; Distribution Pattern; Geographical and Socio-Economic factors affecting Spatial Distribution Pattern of Settlement and Various Types; origin of Towns; Functional Classification of Towns Theories of the Internal Morphological Structure of cities; Concentric Zone Theory, Sector Theory, Multi-Nuclei theory, Social Area Analysis Model; Exploitative Model; Settlement Hierarchy- Theories of Christaller and Losch.

Unit-VII

Economic, Agricultural and Industrial Geography

Location of Economic Activities and Spatial Organization of Economics, Classifications of economies: sectors of economies: primary, secondary, tertiary and quaternary. Impact of Globalization on Indian Economy and its Socio-Cultural Environment. Factors affecting Location of Economic Activities: Physical, Social, Economic and Cultural; Concept and Techniques of Delimitation of Agricultural Regions. Agro-Climatic Region, Impact of Green Revolution on Indian Economy. Measurement of agricultural productivity and efficiency, crop combination and diversification. Von-Thunen model; Typology and world Agricultural regions, World food and nutritional problems.

Classification of industries; Accessibility and Connectivity: Role of Market in The Development of Trade & Commerce; Classification of Industries, Resource Based and foot loose Industries; Theories of Industrial Location- Weber and Losch.

Unit-VIII

Political ,Social and Cultural Geography

Nature, Scope and recent Development in Political geography;
Geopolitics: global Strategic views of Heartland and Rimland Theories.
Concepts in political Geography; State, Nation, Nation-State and Nation-building; Frontiers and Boundaries; Colonialism, federalism
World Powers and alliances: politics of world resources
Geopolitical Significance of Indian Ocean;
Political Geography of SAARC Region;
International Boundary of India and Related Issues;
Disputes of Sharing of Water Resources.
Nature and scope of Social Geography,
Concepts of Space , Process and Pattern and their Social significance, Social Structure
Geographical basis of Social formation, Problems and Process of Social transformation.
Social change and theories of social change – (Theories of progress and evolution by Merton, Bock, Comte and Spencer); Concept of social well-being. Quality of Life , Social responses to Socio – economic , environmental and health problems in developed and developing Countries , deprivation with respect to main Social issues (education , health care , shelter and basic amenities), Women empowerment.
Evolution of Culture , Evolution of Socio – Cultural region , Major Cultural Realms of the World
Economy, Society and diffusion of Racial groups in the world.
Basics of Cultural Diversity (Race , Religion ,Language) , Role of Cultural Diversity in Cultural Regionalization , Impact of industrialization and modernization on culture.
Concept of Social Wellbeing ,

Unit-IX

Regional Planning

Regional Concepts in Geography, Conceptual and Theoretical framework.
Concept of Planning Regions ; Regional hierarchy. Types of regions: Formal and Functional
b. Uniform and Nodal c. Single Purpose and Composite.
Approaches to Delineation of Region & their utility in Planning.
Relevance of Regional Planning in Regional Development.
Planning Processes; a. Sectoral and Spatial, b. Short term and Long term
Concept of Multi-Level Planning & Decentralized Planning
People's Participation in the Planning Processes; Panchayati Raj System,
Models of Regional Development ; a. Growth Pole Theory b. Regional Income Inequality
c. Core Periphery, d. Rostow's Stage Theory
Developmental Strategies for Problem Regions; a. Hilly regions b. Tribal regions c. Regions of drought d. Regions of Flood
Measurement of Levels of Regional Development and Disparities;

Selection of Indicators and their Significance, Construction of Composite Index,
Levels of Regional Development and Disparities in India with special Reference to J&K.

Unit-X

Geography of India

Physiographic divisions; Drainage systems;
Structure and evolution of Himalayas,
Climate and its regional variations.
Climate of India & Its controls – Western disturbances
Theories of Indian monsoon with special reference to MONEX model.
Vegetation types and vegetation regions.
Major soil types and their distribution
Agriculture: Institutional and infrastructural aspects, Agro-climatic regions of India;
Regional patterns of productivity and proficiency in India ;
Dry zone agriculture and its significance,
Green revolution –its impact and consequences; white revolution and its importance.
Resources: marine, water, land, mineral, forest and power resources.
Land use policy, water policy, mineral policy, forest policy.
India: Population distribution and Growth Profile. Population Composition of India;
India's Population Policies.
Population Growth Dynamics in Jammu& Kashmir
Settlement pattern in the light of geo-physical and socio-economic factors.
Modes of transport and their significance: road, rail, water and air.

Unit-XI

Cartography and Statistical methods

Map as a tool in geographical studies; Types of maps: single purpose and composite maps,
Choropleth, isopleths, chorochromatic and choroschematic maps,
Techniques for the spatial patterns of distribution,
Pie diagrams, accessibility and flow maps,
Remote Sensing and computer applications in mapping,
Digital mapping; Stages of Remote sensing data acquisition
Aerial Photography and Visual Image Interpretation
Concept of Resolution- spatial, spectral, temporal and radiometric;
Fundamentals of Image Interpretation; Elements of Image Interpretation:
Definition and development of GIS: Functional requirements of GIS: Hardware configuration
and software modules: Geographic data: Spatial and Non-spatial;
Data sources and types of data; Statistical diagrams, frequency distribution and cumulative
frequency;
Measurement of central tendency, dispersion, standard deviation and Lorenz curve,
Simple and multiple co-relation, regression; Nearest neighbor analysis, scaling techniques;
Sampling and its types.
