

S.R.T.Marathwada University, Nanded

Syllabus for Ph.D.Entrance Test

SUBJECT : GEOGRAPHY

Section-B

Unit-I Geomorphology

- I) Definition, Nature and scope of physical geography
- II) Interior of the earth
- III) Wegner's theory of continental Drift
- IV) Rocks : Types, origin and composition
- V) Geomorphic Processes
- VI) Weathering
- VII) Endogenetic processes
 - a) Slow processes – Epeirogenic and Organic
 - b) Sudden processes-Earthquake and Volcano
- VIII) Agents of geomorphic processes and resulting landforms :
 - i) River ii) Glaciet iii) Wind iv) Underground water and v) Sea waves
- IX) Geomorphic hazards and their management :
 - a) Earthquake b) Volcano c) Tsunami and d) Land slide

Unit-II Climatology :

- I) Definition, nature and scope of Climatology
- II) Composition and structure of the atmosphere
- III) Atmospheric temperature-Insolation, vertical and horizontal distribution of temperature.
- IV) Atmospheric pressure-Vertical and horizontal distribution of pressure.
- V) Types of winds – Planetary, periodic and local winds.
- VI) Humidity, evaporation and condensation.
- VII) Forms of condensation and types of precipitation.
- VIII) Air masses classification and properties.
- IX) Major climates of the world
 - 1) Tropical 2) Temperate and 3) desert

Unit-III Oceanography

- i) Oceanography and its field
- ii) Oceanography as a branch of physical Geography
- iii) Definition, nature and scope of Oceanography
- iv) Nature of Ocean floor-Continental Shelf, Continental Slope, Abyssal Plain, Trenches, Expansion of Ocean Floor.
- v) Bottom topography of Atlantic, Pacific and Indian Ocean.
- vi) Physical and Chemical properties of sea water, Heat Budget of Ocean.
- vii) Distribution of temperature and salinity of oceans and Seas.
- viii) Circulation of oceanic waters-waves, tides and currents.
- ix) Currents of Atlantic, Pacific and Indian Oceans.
- x) Marine Deposits and resources :
 - a) Classification of Marine deposits, coral reefs, Coral bleaching.
 - b) Marine resources-Biological, mineral and energy resources.
- xi) Marine Environment – Estuaries, deltas, continental shelf and continental slope and impact of human on marine environment.

Unit-IV Biogeography

- i) Definition, nature, scope and significance of Biogeography.
- ii) The nature of biosphere, elements of biosphere and cycles of biosphere-energy, water and chemical cycles.
- iii) Concept, function and types of Ecosystem.
- iv) Influence of Physical environment on plants and Animals.
- v) Classification and distribution of plants and animals.
- vi) Animal dispersal and migration theories.
- vii) Biodiversity – Concept, importance, depletion, conservation

Unit-V Human Geography :

- I) Definition, nature and scope of Human Geography. Branches of Human Geography.
- II) Concepts of man and environment relationship
 - a) Environmentalism / Determinism
 - b) Possibilism
 - c) Stop and go determinism
- III) Economic Activities :
 - a) Primary activities
 - b) Secondary activities
 - c) Tertiary activities
 - d) Quaternary activities
- IV) Human adaptation to environment
 - a) Cold region-Eskimo
 - b) Hot region – Bushman
 - c) Plateau region – Gonds
 - d) Hilly and Mountainous region-Naga, Toda and Bhil
- V) Population -
 - a) Physical, economic and social factors influencing spatial distribution of population.
 - b) Distribution of population in the world and India.
- VI) Human settlements :
 - a) Definitions of rural and urban settlements
 - b) Functions of rural and urban settlements
 - c) Types and patterns of rural settlements

Unit-VI Geography of India :

- I) India in the context of southeast & South Asia. India a land of diversities; unity with diversity. Physical regions of India.
- II) Drainage systems of India.
- III) Climate of India – The monsoon, western disturbance, norwesters. Climatic regions of India.
- IV) Soil types of India-Their distribution and characteristics.
- V) Forests types and distribution.
- VI) Minerals and power resources – The status of their use and need of conservation.
- VII) Population – a) Factors affecting on the distribution of population b) Distribution of population c) socio-economic implication of population explosion.
- VIII) Agricultural growth during the plan period and green revolution in India.
- IX) Industrial development and industrial regions of India.
- X) Contemporary issues : regional disparity in social and economic development, poverty, population explosion, globalization, social & ethnic tension, gender discrimination and empowerment of women.

Unit VII Resource and Environment :

- I) Resources :-
 - a) Meaning, nature and components
 - b) Classifications of resources
 - i) Renewable and non renewable
 - ii) Biotic and a biotic
- II) Environment :
 - a) Meaning, nature and components
 - b) Ecosystem-meaning, types and functions.
 - c) Cycle of environment compound-Carbon, Nitrogen and Oxygen.

- III) Distribution and utilization of following resources with their economic and environmental significance and conservation.
 - a) Water resources
 - b) Mineral resources-Iron ore and Bauxite.
 - c) Energy resources- Coal Mineral oil and Atomic
 - d) Forest resources
 - e) Soil resources
- IV) Man-environment interrelations with respect to population size, types of economy and technology.
- V) Environmental hazards : a) Natural hazards-Earthquake, Volcano, Landslide, Flood, Drought & Famine b) Manmade hazards
- VI) Population – a) Air, water & sound pollution-their causes, effects and remedies.
- VII) Emerging environmental issues- food security, deforestation, global warming, conservation of bio-diversity, sustainable development

Unit-VIII Development of Geographical Thought :

- I) Brief history of geographical thought – Greek, Roman, Arab, Indian.
- II) Contribution of modern Geographers.
 - a) British – Halford John Mackinder, Sir Dudley Stamp
 - b) German – Alexander von Humbolt, Carl Ritter
 - c) French – Vidal-de-la-Blache, Jean Brunches
 - d) American-W.M. Davis, Richard Hartshorne
- III) Major concepts in Geography :
 - a) Concept of region.
 - b) Concept of spatial organization
- IV) Approaches in Geography :
 - a) Systematic approach
 - b) Regional approach
 - c) System approach
 - d) Quantitative approach
 - e) Behavioural approach
 - f) Radical approach
- V) Models in Geography : Significance, need, features and general classification of models.

Unit-I GEOMORPHOLOGY

- I) Definition, nature and scope geomorphology.
- II) Fundamental concepts in geomorphology.
- III) Interior of the earth
- IV) Indogenic processes
- V) Wegner's continental drift theory
- VI) Plate tectonics
- VII) Exogenic process.
- VIII) Application of geomorphology in human activities

Unit-II CLIMATOLOGY

- I) Nature and scope of climatology.
- II) Composition and structure of the atmosphere.
- III) Insulation
- IV) Temperature – vertical and horizontal distribution
- V) Atmospheric pressure-Vertical and horizontal distribution and pressure belts.
- VI) Winds – Planetary, periodic and local winds
- VII) Atmospheric moisture : Humidity, evaporation, condensation and precipitation.
- VIII) Air mass, classification, fronts and front genesis
- IX) Cyclones – Temperature and tropical
- X) Application of climatology in human activities

Unit-III ECONOMIC GEOGRAPHY

- I) Definition, nature and scope of economic geography.
- II) Sectors of economy-primary. Secondary and tertiary.
- III) Location of economic activities : Physical, social, economic and cultural factors affecting on location of economic activities.
- IV) Von Thunen's model and its modification
- V) Rostove's stages of economic development.
- VI) Classification of industries : Resource based and footloose industries.
- VII) Theories of industrial location- Weber, Losch case studies of selected industries in India i) Iron and steel ii) Cotton and iii) Chemical
- VIII) Transportation – Modes of transportation
- IX) Globalization and Indian economy and its impact on environment.

Unit-IV URBAN GEOGRAPHY

- I) Definition, nature and scope of Urban Geography
- II) Process of urbanization – form early periods to modern and 20th century trends of urbanization.
- III) Concepts of urbanization city region, rural-urban fringe, urban sprawl, ribbon corridor, megalopolis, conurbation, prismatic city and CBD.
- IV) Rank size rule
- V) Concept of Hinterland and Umland
- VI) Theories in Urban Geography
 - i) Central place theory of Christaller
 - ii) Theory of peroux
 - iii) Concentric zone model by E.W. Burgess
 - iv) Sector model by Homer Hoyte
 - v) Multiple nuclei model by Harris and Ullman.
- VII) Morphological characteristics of Indian cities.
- VIII) Contemporary urban issues of Indian urban centers-slums, urban renewal, urban crime, urban infrastructure, urban poverty, housing and environmental pollution.

Unit-V Political Geography

- i) Definition, nature and scope of political Geography
- ii) Recent development of Political Geography.
- iii) Geographic Elements and the state.
- iv) Frontiers and boundaries, core area
- v) Capital – classification and functions.
- vi) Geopolitical significance of the Indian Ocean.
- vii) Global strategic views – Mackinder, Spykman, de seversky, A.T. Mahan
- viii) Centripetal and centrifugal forces.

Unit-VI Geography of Regional Planning

- i) Concept of region and regionalism, types of region in the context of planning.
- ii) Meaning, aim and objectives of regional planning.
- iii) Types of planning
- iv) Concept of growth and development.
- v) Regional Imbalances in India.
- vi) Rastow’s model and myrdul’s concept of economic growth.
- vii) Theoretical framework for regional planning – central place theory, growth pole, growth foci approach.
- viii) Regional planning in India – Metropolitan, Ruhel development, Tribal and development planning.

Unit-VII Agricultural Geography

- i) Definition, nature and scope of Agricultural Geography.
- ii) Origin and evolution of Agricultural Geography.
- iii) Determinants of agricultural landuse – Physical, Economic, social and technological.
- iv) Meaning, need, objectives and approaches of landuse study, land capability and suitability.
- v) Concept and methods of agricultural regionalization.
- vi) Von-Thunen’s Theory and Whittlesey’s classification of agricultural region.

- vii) Major issues in Indian Agriculture- Green revolution, white revolution, drought and food security.

Unit-VIII Research Methodology in Geography

- i) Nature and types of Geographical Research.
- ii) Approaches of Geographical research and research problem.
- iii) Types of data and data collection.
- iv) Processing and analysis of data.
- v) Role of computers in Geographical research.

Unit-IX History of Geographical Thought

- i) Geography as a social science and natural science.
- ii) Concept in the philosophy of Geography- distributions relationships.
- iii) Dualism in Geography.
- iv) Types of explanation – Inductive / Deductive
- v) Characterizing of theory, model and Law.
- vi) Geography in the 20th Century.

Unit-X Practical

- i) Importance of statistics in Geography
- ii) Geographical Information system.
- iii) Indian Toposheet – History, type, importance.
- iv) Meaning and application of Remote sensing.
- v) Importance of cartography
- vi) Methods of survey and their types.
- vii) Importance of weather instruments with structure and features.