

04.GEOGRAPHY

- 1- **Physical Geography I: Geomorphology:-** The Solar system, Origin of the earth and related hypotheses, Interior of the earth; Fundamental concepts of Geomorphology; Factors controlling landform development; Endogenetic and Exogenetic forces; Denudation and weathering; Geosynclines; Mountain building theories, Continental drift and plate tectonics; Concept of geomorphic cycle; Landforms associated with fluvial, glacial, arid, coastal and karst cycles; Slope forms and processes; Applied Geomorphology; Relief and Drainage system of Uttarakhand.
- 2- **Physical Geography II : Climatology and Oceanography:** Composition and structure of the atmosphere; Insolation; Heat budget of the earth; Distribution of temperature; Atmospheric pressure and general circulation of winds, Types of precipitation; Air masses; Monsoon mechanism and Jet Stream; El-Nino and La-Nina; Tropical and temperate cyclones; Classification of world climates - Koppen's and Thornthwate's schemes; Hydrological cycle; Origin of ocean basins; Bottom relief of Pacific, Atlantic and Indian Ocean; Ocean deposits; Coral Reefs Temperature and salinity of Oceans; Tides and Oceanic currents; Sea level change.
- 3- **Geography of Environment:-** Constituents of environment and ecology; Structure and functions of ecosystem; World distribution of plants and animals; Biodiversity; Natural Hazards and depletion of biodiversity; Man-induced causes; Pollution;

Environmental degradation; Global warming and climate change; Disasters and their management in Uttarakhand; Conservation and management of ecosystem.

- 4- **Geographic Thoughts:** Fundamental concepts of Geography, General character of Geographic knowledge during ancient and medieval period; Schools of Modern Geography -German, French, British and American; Man and environment- Determinism, Possibilism, Neo-Determinism and Probabilism, Development of Geography in India; Quantitative Revolution in Geography; Recent trends in Geography.
- 5- **Population and Settlement Geography:** Nature, scope, subject-matter and recent trends of Population Geography; Patterns of world population distribution and growth; Patterns and processes of Migration; Demographic transition; Population -Resource regions; Population policy issues; Population distribution and rural out- migration in Uttarakhand; Location, types, size, spacing and internal morphology of rural and urban settlements; Urban growth, urban fringe, city-region and umland; Primate city, rank-size rule and hierarchy of settlements; Trends of urbanization in India and Uttarakhand.
- 6- **Economic Geography:** Spatial organization and classification of economies; Sectors of economy -Primary, secondary, tertiary and quaternary; Concepts and classification of resources; Conservation of resources; Concepts and techniques of delimitation of agricultural regions; Measurement of agricultural productivity and efficiency; Crop- combination and diversification; Agricultural systems of the world; Problems associated with the development of agriculture in Uttarakhand; Classification and types of industries; Weber's and Losch's approaches; Industrial

regions of the world; Mode and models of transportation; Industrial prospects of Uttarakhand.

- 7- **Cultural and Political Geography**: Nature and scope of Cultural Geography; Environment and culture; Concepts of Cultural Realms and Cultural Regions; Human races; Nature and scope of Social Geography; Concept of Social well-being; Major societies and tribes of the world; Tribal areas and tribal societies of Uttarakhand; Definition and scope of Political Geography; Geo-politics; Global strategic views (Heartland and Rimland theories); Concepts of Nation, State and Nation-State; Boundaries and frontiers.
- 8- **Regional Planning**: Concept of region and regionalism in Geography, Concept of planning regions, Types of regions and regional delineation; Central Place theories (W.Christaller and A.Losch) Regional Planning policies in India; Indicators of development, Human Development Index; Regional imbalances; Hill Development Policies in India.
- 9- **Geography of India**: Physiographic divisions; Climate, Vegetation types and vegetation regions, Drainage and water resource utilization; Major Soil types; Irrigation and agriculture; Mineral and Power resources; Major industries and industrial regions; Population distribution and growth; Urbanization and related problems; Regional disparities in socio-economic development; Geographic personality of Uttarakhand.
- 10- **Cartography and Quantitative Techniques**: Maps and their types; Techniques of spatial pattern of distribution; Thematic mapping; Choropleth, Isopleth, Chorochromatic and choro-schematic maps; Accessibility and flow maps; Remote

Sensing; Computer application in mapping; Digital mapping, GIS (Geographic Information System); Sources and types of data; Measures of Central Tendency and Dispersion; Simple and multiple co-relation; Regression; Nearest Neighbour Analysis; Scaling techniques, rank-scores and weighted ranking; Sampling techniques in geographic studies.