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Subject: Geography

1. Geomorphology

Basic concepts; Geomorphic theories; Climatic geomorphology; structural geomorphology; Plate tectonics and mountain building; Slope development; weathering and mass movement; Rejuvenation and polycyclic relief's; karst geomorphology, coastal geomorphology; arid geomorphology; periglacial geomorphology; morphometry; Applied geomorphology.

2. Climatology

Heat budget of the earth and atmosphere, tricelleular meridional circulation of atmosphere; coriolis force; Jet streams; Monsoon; El Nino and southern oscillation; Atmospheric stability & instability; Atmospheric humidity and precipitation; Cyclones and tornadoes; Air masses; Classification of world Climates; Climate Change.

3. Oceanography

Historical development of oceanography; Origin and evolution of ocean basins; Morphology of ocean basin's; Marine deposits; Coral Reefs and coral bleaching; Ocean currents; ocean tides; marine bio zones.

4. Environment

Biosphere as ecosystem; Ecosystems and Ecology; Circulation of Matter and Energy in the biospheric ecosystem; Ecological productivity and production; Bio-geo-chemical cycles; Environmental degradation and pollution; Natural disaster-types; causes and management; Soil erosion and conservation; Global warming; Environmental Management and Sustainable Development.

5. Biogeography

Meaning and types of bio-geography; Development of biogeography; Approaches; Plant system-evolution, biotic succession and distribution, Animal system-evolution, dispersal and distribution of animals; Biodiversity; Wildlife conservation; major world biomes and biogenic; Forest conservation in India.

6. Geographical Thought

General characteristics of geographical knowledge during the ancient and medieval period; Foundation of modern geography contribution of German, French, British and American Schools; Conceptual and methodological developments during 20th century; Changing paradigms in geography : Man and Environment, determinism and Possibilism, Areal Differentiation, Spatial organization, Quantitative revolution, Positivism, Humanism, Radicalism and Behaviouralism in geography; Recent trends in geography.

7. Population and Settlement Geography

Growth and distributional pattern of population in the world, Theories of population growth, Population Migration, Population-Resource regions.

Settlement Geography- Types and pattern of settlements, Spacing and internal morphology of rural and urban settlements, Trend of urbanization in India and world, Urban Fringe, Umland, Rank-size rule, Settlement hierarchy, Christaller's Central place theory, August Losch's theory of Market centres.

8. Economic Geography

Concept and approaches of economic geography; Sectors of economy-primary, secondary, tertiary, and Quaternary ; Concept and Types of Resources-Renewable and non renewable, Conservation of resources; **Agricultural Geography**- concept and techniques of delimitation of agricultural regions, Measurement of agricultural productivity and efficiency; Crop combinations and diversification, Von Thunen's model, Agricultural regions of the world. **Industrial Geography**- Theories and models of industrial location; Delimitation of industrial regions and major industrial regions of the world; **Geography of Transport and Trade**- Models of transportation and transport Cost, concept of accessibility, Connectivity and locational Utility; Means and mode of transport; Changing pattern of international trade.

9. Political Geography

Definition and Scope of political geography; Heartland and Rim land theories; Concept of Nation, State and Nation-State;

Boundaries and Frontiers: Politics of world resources: Geography and Federalism.

Social Geography: Nature and Scope of social geography; Social structure and social processes; Elements of social geography-ethnicity, Tribe, Dialect, Language, Caste, Religion and communalism, Concept of social well-being.

Cultural Geography: Environment and culture, Concept of Cultural Areas and cultural regions, Theories of Tribal groups: Dwelling places as cultural expression.

10. **Regional Planning**

Regional concept in geography and its application to planning; Concept of Planning region; Regional hierarchy; Types of regions and methods of regional delineation; Conceptual and theoretical framework of regional planning; Regional Planning in India; Concept of development; Indicators of development; Regional imbalance.

11. **Geography of India**

Geological Structure, Physiographic divisions; Drainage System, Soils and Natural vegetation; Climatic regionalization; Coastal and Marine resources; Water resource and river valley projects; Irrigation; Agriculture; Agro climatic regions; Mineral and power resources; Major Industries and Industrial regions; Industrial policy; Population distribution and growth; Population policy, Regional disparities in social and economic development; Historical perspective on Unity in diversity; International boundaries of India and related geo-political issues; India and the geopolitics of Indian Ocean. Regional Consciousness and National Integration; States Reorganization.

12. **Cartography**

Map as a tool in geographical studies; Types of maps; Single purpose and composite maps; Characteristics of different types of map projections; Choropleth, Isopleths and Chorochromatic maps and Pie Diagrams; Study and interpretation of topographical sheets. Remote sensing and computer application in mapping; Geographical information System (G.I.S).

Statistical Methods

Data sources and types of data; Statistical diagrams; Measures of Central tendency; Measures of dispersion and concentration; Lorenz curve; Simple and Multiple Correlation; Regression; Sampling techniques for geographical studies.