SECTION – A

(Common for all candidates)

Total Marks: 50

Ph.D. Entrance Examination Syllabus (Research Methodology)

Unit	Content
1	**Basics of Research:** Research: Meaning, Objective, Characteristics, Steps of research, Methods of research, Types of research – Descriptive vs. Analytical, Applied vs. Fundamental, Quantitative vs. Qualitative, Conceptual vs. Empirical.
2	**Research Problem and Research Design:** Introduction to Research Problem, Necessity of Defining the Problem, Selecting the Problem, Techniques Involved in Defining a Problem, Meaning and Types of Research Design, Important Concepts Relating to Research Design
3	**Sampling Design:** Census and sample survey, Implications of a Sample Design, Steps in sampling Design, Criteria of Selecting a Sampling Procedure, Characteristics of a Good Sample Design, Different Types of sample Designs, How to Select a Random Sample?, Random Sample from an Infinite Universe, Complex Random Sampling Designs
4	**Data Collection and Analysis:** Methods of Data Collection- Observation, Interview, Questionnaires, Schedules, Survey and Experimental. Selection of Appropriate Method for Data Collection, Different Techniques of Sampling such as Probability and Non-Probability, Basic Statistical Methods of Data Analysis such as Frequency distribution, Measures of central tendency, Measures of Dispersion, Coefficient of variation, correlation and regression.
5	**Research Ethics and Morals:** Environmental impacts and Ethical issues, Commercialisation, Copy right, Royalty, Intellectual property rights and Patent law, Plagiarism, Citation, Referencing style and acknowledgement.

SECTION – B

Total Marks: 50

Ph.D. Entrance Examination Syllabus (Geography)

Geomorphology
Fundamental concepts; Endogenetic and Exogenetic forces; Denudation and weathering; Geosynclines, continental drift and plate tectonics; Concept of geomorphic cycle; Landforms associated with fluvial, glacial, arid, coastal and karst cycles.

Climatology
Composition and structure of the atmosphere; Heat budget of the earth; Distribution of temperature; Atmospheric pressure and general circulation of winds; Monsoon and jet stream; Tropical and temperate cyclones; Classification of world climates; Koppen's and Thoramwaite's schemes.

Oceanography
Ocean deposits; Coral reefs; Temperature and salinity of the oceans; Density of sea water; Tides and ocean currents.

Bio–Geography
World distribution of plants and animals; Forms and functions of ecosystem; Conservation and management of ecosystems; Problems of pollution.

Geographic Thought
General character of Geographic knowledge during the ancient and medieval period; Foundations of Modern Geography; Determinism and possibilism; Areal differentiation and spatial organisation.

Population Geography and Settlement Geography
Patterns of world distribution;. Growth and density of population; Patterns and processes of migration; Demographic transition.Settlement Geography : Site, situation, types, size, spacing and internal morphology of rural and urban settlements; City – region; Primate city; Rank – size rule; Settlement hierarchy; Christaller's Central Place theory; August Losch's theory of market Centres.

Economic Geography
Sectors of Economy: primary, secondary, tertiary and quaternary; Natural resources: renewable and non-renewable. Measurement of agricultural productivity and efficiency; Crop combination and diversification; Von Thunen's Model. Classification of Industries: Weber's and Losch's approaches; Resource based and footloose industries.

Political Geography
Heartland and Rimland theories; Boundaries and frontiers; Nature of administrative areas and Geography of public policy and finance.

Social Geography
Ethnicity; tribe; dialect; language, caste and religion; Concept of social well-being.

Regional Planning
Regional concept in Geography; Concept of planning regions; Types of regions; Methods of regional delineation; Regional planning in India; Indicators of development; Regional imbalances; Evolution, nature and scope of town planning with special reference to India, and Fundamentals of Town and Country planning.

Geography of India
Physiographic divisions; Climate: Its regional variations; Vegetation types and vegetation regions; Major soil types; Irrigation and agriculture; Population distribution and growth; Settlement patterns; Mineral and power resources; major industries and industrial regions.

Cartography
Types of maps: Techniques for the study of spatial patterns of distribution; Choropleth; Isopleth and Chorochromatic maps and pie diagrams; Mapping of location – specific data; Accessibility and flow maps.Remote sensing and Computer application in mapping; Digital mapping; Geographic Information System (GIS).

Statistical Methods
Data sources and types of data; Frequency distribution and cumulative frequency ; Measures of central, tendency; Selection of class intervals for mapping; Measures of dispersion and concentration; Standard deviation; Lorenz Curve; Methods of measuring association among different attributes; Simple and Multiple correlation; Regression.Nearest – neighbour analysis; Scaling techniques; Rank score; weighted score; Sampling techniques for Geographical analysis.

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 systems of the world.

Geography of Transport
Modes of transportation, Models of transportation; Accessibility and connectivity: Inter-regional and Intra-regional.