

M.D. University, Rohtak – 124001  
Syllabi for M. Phil / Pre-Ph.D Programme in Geography  
(SEMESTER -1)

PAPER – I  
RESEARCH METHODOLOGY

Hours: 3  
Max. Marks: 100  
End term Exam: 80  
Internal Assessment: 20

UNIT-I

Research: Nature, meaning and types; The Research Process: operational steps and research methodology (Formulating a research problem, conceptualizing a research design, constructing an instrument for data collection, selecting a sample, writing a research proposal, collecting data, processing data, writing a research report) Research in Social and Physical/Natural Sciences; Geography and Social Science Research.

UNIT-II

Key components of philosophical approach: Ontology, Epistemology, Ideology and Methodology; Modes of scientific explanation: inductive and deductive reasoning History and Philosophical Systems of the Discipline of Geography: Physical Sciences tradition; Social Sciences tradition, Humanistic tradition.

UNIT-III

Philosophy and Methodology in Human Geography: A general introduction to Empiricism, Positivism and Humanistic approach.

UNIT-IV

Mechanics of Writing Research: research report; technical report; assignment, research paper; Style in research writing: Notes and Bibliography, Author-Date Citation and Reference list, Referencing the Internet; Common ethical issues in research.

Note:

- (1) There will be eight questions in all, two from each unit. Candidates will be required to attempt four questions selecting one question from each unit. All questions will carry equal marks.
- (2) One of the assignments for presentation will be on 'Literature Survey and Review System' carrying 10 marks to be evaluated by the Departmental Research Committee.

References:

Clifford, Nicholas J. and Gill Valentine (eds.) (2003), *Key Methods in Geography*, London: Sage.

Holloway, Sarah L. et.al. (eds.), (2003), *Key Concepts in Geography*, London: Sage.

Kitchin, Rob and Nicholas J. Tale (2000), *Conducting Research into Human Geography*, Essex: Pearson Education.

Montello, Daniel R. and Paul C. Sutton (2006), *Scientific Research Methods in Geography*, New Delhi: Sage.

Stoddart, D.R. (ed.) (1981), *Geography, Ideology and Social Concern*, Oxford: Basil Blackwell.

Unwin, Tim (1992), *The Place of Geography*, Essex: Prentice Hall.

PAPER-II  
METHODS AND TECHNIQUES IN GEOGRAPHY

Hours: 3  
Max. Marks: 100  
End term Exam: 80  
Internal Assessment: 20

UNIT-I

Quantitative and Qualitative Research-key characteristics; quantitative and qualitative methods. Qualitative research techniques: a general survey

UNIT-II

Methods of Data Collection: Primary data (Census and Sampling Methods-sampling size and sample frames), Secondary Data—an appraisal of some basic secondary sources of socio-economic and demographic data with particular reference to India.

UNIT-III

Data Classification; Standardization of Data: Rank, Z-Score; Composite index, Distinction between Parametric and Non-Parametric tests;

Non-Parametric Tests: Formulation and testing of null hypothesis, one/two tailed tests, and Chi-Square, Spearman's Rank Correlation.

UNIT-IV

Parametric Tests: Pearson's Product Moment correlation coefficient, regression analysis-simple and multiple

Note: There will be eight questions in all, two from each unit. Candidates will be required to attempt four questions selecting one question from each unit. All questions will carry equal marks.

Reference:

Hammond, R. and P.S. Mc Cullagh (1978), *Quantitative Techniques in Geography*, Oxford: Clarendon Press.

Kitchin, Rob and Nicholas J. Tale (2000), *Conducting Research into Human Geography*, Essex: Pearson Education.

Rogers, Peter A. (2009), *Statistical Methods for Geography*, London: Sage.

PAPER-III  
COMPUTER APPLICATIONS IN GEOGRAPHY  
(PRACTICALS)

Time: 4 Hours  
Max. Marks: 100

UNIT-I

Fundamentals of Computer: Hardware and Software, Computer Assisted Cartography: Preparation of Graphs and Diagrams—Line Graph, Bar-Diagram and Scatter Diagram.

UNIT-II

Statistical Analysis with SPSS: Correlation; regression and mapping of residuals, Principal Component and Factor Analysis—calculation and mapping of factor scores.  
(Mapping to be done using GIS software)

UNIT-III

GIS in Geography, Brief Introduction to GIS software and hardware. Data Representation: Raster and Vector Data.

UNIT-IV

Data Output Through GIS: Map Digitization—Digitizing operation, Thematic mapping and overlaying.

Note:

- (1) There will be six questions in all, two from each unit. Candidates will be required to attend three questions selecting at least one question from each unit. All questions will carry equal marks. Distribution of marks is as under:

Lab Test:	60 marks
Lab Record:	30 marks
Viva-voce on lab record:	10 marks

- (2) The practical shall be conducted a board of internal examiners comprising the course-incharge and one other teacher of the department on rotation basis as decided by PGBOS on rotation basis.

References:

Burrough, Peter A. and Rachael A. McDonnell ((1998), *Principles of Geographical Information Systems*, Oxford: Oxford University Press.

Clarke, Keitch C. (1995), *Analytical and Computer Cartography*, New Jersey: Prentice-Hall.

Heywood, Ian et.al. (2002), *An Introduction to Geographical Information Systems*, Delhi: Pearson.

Keates, J.S. (1996), *Understanding Maps*, Essex: Longman.

Schuurman, Nadine (2003), *GIS: A Short Introduction*, Oxford: Blackwell.

## DEPARTMENT OF GEOGRAPHY

### SYLLABUS FOR ENTRANCVE EXAM FOR ADMISSION TO M.PHIL, PRE-PH.D COURSE/AWARD OF URS.

1. **Geomorphology** : Fundamental concepts; Diastrophism forces; tectonics; concept of geomorphic cycle; Landforms associated with fluvial, glacial, arid, coastal and karst cycles.
2. **Climatology**: Composition and structure of the atmosphere; Heat budget of the earth; Distribution of temperature; Atmosphere pressure and general circulation of winds; Monsoon and jet stream; Tropical and temperate cyclones; Classification of world climates; Koppen's and Thornthwaite's schemes.
3. **Oceanography**: Ocean deposits; Coral reefs; Temperature and salinity of the oceans; Tides and ocean currents.  
**Bio-Geography**: World distribution of plants and animals; Forms and function of ecosystem; conservation and management of ecosystems; Problems of pollution.
4. **Geographical Thought** : General character of Geographic knowledge during the ancient and medieval period; foundations of Modern Geography; Determinism and possibilism; Areal differentiation and spatial organization
5. **Population 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 settlement hierarchy; Christaller's Central place theory; August Losche's theory of market centres.
6. **Economic Geography**: Sectors of Economy: primary Secondary, Tertiary and quaternary, Natural resource; renewable and non-renewable. Measurement of agricultural productivity and efficiency; Crop combination and diversification; Von Thunen's Model.
7. **Industrial Geography**: Weber's and Losch's approaches; Resource based and footloose industries.
8. **Transport Geography**: Models of transportation and transport cost: Accessibility and connectivity.
9. **Political Geography**: Heartland and Rimland theories; Boundaries and frontiers; nature of Administrative areas and Geography of Public policy and finance.
10. **Social Geography**: Ethnicity; dialect; language, caste and religion; Concept of social being.
11. **Cultural Geography**: Culture- area and cultural regions; Human races; Habitat; Economy and Society of Tribal Groups.

12. **Regional Planning :** Regional Concept; in Geography; Concept of Planning region; Types of regions; Method 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 fundamental of town and country planning.
13. **Geography of India:** Physiographic divisions; Climate: and Microclimate Vegetations types and vegetation regions; Major soil types; Patterns; Mineral and power resources; major industries and industrial regions; Water shed map of India
14. **Cartography:** Types of maps: Techniques for the study of spatial patterns of distributing; Choropleth; Isopleth and Chorochromatic map and pie diagrams; Mapping of location- specific data; Accessibility and flow maps.
15. **Remote Sensing :** Computer application in mapping; Digital mapping; Geographic information Systems (GIS).
16. **Statistical Methods:** Data source 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 attributes; simple and Multiple correlation; Regression. Nearest-neighbour analysis: Scaling techniques: Rank score; weighted score; Sampling techniques for Geographical analysis.

**Note: There will be 100 questions of multiple choice type of one mark each covering the whole syllabus. The examination duration will be of 2 hours. The question paper will contain at least 5 questions from each part of syllabus.**

