



MASTERS OF PHILOSOPHY (M. PHIL.)
GEOGRAPHY
DETAILED SYLLABUS
SESSION 2013-14



PAPER I

RESEARCH METHODOLOGY THEORY AND TECHNIQUES

UNIT - I

Research: Definition, Importance and Meaning of research, Characteristics of research, Types of Research, Steps in research, Identification, Selection and formulation of research problem, Research questions – Research design – Formulation of Hypo Dissertation, Review of Literature.

UNIT – II

Sampling techniques: Sampling theory, types of sampling – Steps in sampling – Sampling and Non-sampling error – Sample size – Advantages and limitations of sampling.

Collection of Data: Primary Data – Meaning – Data Collection methods – Secondary data – Meaning – Relevances, limitations and cautions.

UNIT – III

Statistics in Research – Measure of Central tendency, Dispersion, Skewness and Kurtosis in research, Hypo Dissertation, Fundamentals of Hypo Dissertation testing, Standard Error, Point and Interval estimates, Important Non-Parametric tests: Sign, Run, Kruskal, Wallis tests and Mann, Whitney test.

UNIT – IV

Para metric tests: Testing of significance, mean, Proportion, Variance and Correlation, testing for Significance of difference between means, proportions, variances and correlation co-efficient. Chi-square tests, ANOVA, One-way and Two-way.

UNIT– V

Research Report: Types of reports, contents, styles of reporting, Steps in drafting reports, editing the final draft, evaluating the final draft.

Reference Books:

1. Statistical Methods - S.P. Gupta
2. Research Methodology Methods and Techniques - C.R. Kothari
3. Statistics (Theory and Practice) - B.N. Gupta
4. Research Methodology Methods and Statistical Techniques - Santosh Gupta



PAPER-II
GIS AND REMOTE SENSING

GIS

Unit-I

Concepts and Definitions:

- Geographic Information Systems (GIS): Definition and developments
- Spatial data base: Points, Lines and Polygons
- Computer components: Hardware and software

Functional Elements:

- Data acquisition, input, editing, data manipulation and topology creation
- Data analysis and query
- Symbolisation and product generation

Unit-II

Data Management and Structure:

- Data Base Management System (DBMS): Purpose and structure
- Classification: Raster, Vector, quadtree, hierarchical, network and relational

Artificial Intelligence and Neural Networks:

- Artificial intelligence: history, major issues, approaches and pattern recognition.
- Artificial neural network: Definition, taxonomy and multi-layer perceptions

Remote Sensing

Unit-III



Introduction to remote sensing: Energy and radiation principles, energy-atmosphere interaction, energy-earth surface features interaction, spectral signatures.

Resolution of Remote Sensing data: Spatial, spectral, radiometric and temporal.

Unit-II

Remote sensing types: Natural, technology assisted, active, passive, photographic, nonphotographic, etc.

Type of aerial photographs and satellite imageries: Classification, characteristics and applications.

Sensor Platforms: Ground based, air borne and space borne, earth resources satellite systems:

LANDSAT, SPOT, IRS, ERS, IKONOS, etc.

Unit-IV

Image errors due to tilt, relief, optical distortions, image restoration and rectification.

Photogrammetry: Simple geometry of vertical photograph measurement of scale, height, and slope from the vertical photographs.

Unit-V

Digital image processing: Introduction to image processing system: hardware and software, GPS and its use in the selection of training sets and field verification of interpreted data.

References:

Aronoff, S. : *Geographic Information Systems: A Management Perspective*, WDL Publications Ottawa, Canada, 1992.

ESRI : *Understanding GIS*, Environmental Systems Research Institute, U.S.A., 1993.

Jeffrey S. & John, E. : *Geographic Information Systems - An Introduction*, Prentice Hall, New Jersey, USA, 1990.

Michael F. Goodchild : *Introduction to GIS*, Santa Barbara, California, & **Karan K. Kemp** (eds.) NGGIA, 1990.

American Society : *Manual of Remote Sensing*, Vol. 1 and II, Falls Church, of Photogrammetry Virginia, 1975.



Barret, E.C. & Curtis, E.F. : *Remote Sensing of Environment*, Second Edition, 1982.

Curran, Paul J. : *Principles of Remote Sensing*, Longman, Hongkong, 1988.

Jensen, J.R. : *Introductory Digital Image Processing: A Remote Sensing Perspective*, Prentice Hall, New Jersey, 1986.

PAPER-III ENVIRONMENT GEOGRAPHY

Unit-I Climatic and Biotic Hazards

1. Concept of hazards and disaster. Natural hazards- natural and man-made hazards
2. Seasonal Climatic hazards: Flood, and drought- mechanism, environmental impact and management
3. Occasional climatic hazards: Hailstones and tornadoes- mechanism, environmental impact and management
4. Biotic hazards: Deforestation and loss of bio-diversity-impact and conservation of biotic resources

Unit- II Other Terrestrial Hazards in the Indian Sub-continent

1. Edaphic hazards: Salinization and Desertification- Mechanism, impact and management
2. Geomorphic hazards: Landslide, River bank erosion and Coastal erosion—mechanism, impact and management
3. Tectonic hazards: Earthquake—impact and precautionary measures
4. Water related hazards: Contamination of ground water and fall of piezometric level

Unit- III Human Development in the Third World

1. Concept of development and under development: Basic indicators of economic development



2. Economic disparity as constraint of development: per capita income, purchasing power and standard of living
3. Poverty: Poverty line, Unemployment, Dependency ratio, Work participation and Poverty alleviation
4. Economic impact of globalization

Unit- IV Human Development in the Third World

1. Basic indicators of human and gender development
2. Social inequality as constraint of development: caste and religious fundamentalism; gender bias
3. Demographic constraint; Population growth. Malnutrition. Food security and Hunger. Morbidity and Mortality
4. Sustainable development
5. Figures in the parentheses indicate number classes required

Unit- V

1. Environment-development debate: Environmental movements: Chipko, Silent valley & Narmada Bachao Andolan.
2. Environmental ethics; Concept of Sustainable Development.

PAPER-IV DISSERTATION