| SEMESTER I | CORE I | Hours 6 | Credit 5 |
|---|---|---|---|

# Advanced Atmospheric Science

**Objectives**: At the end of the course students able to

1. Explain the basic concepts of Climatology
2. Apply the climatic concepts on micro &macro level

UNIT – I

Nature and scope of applied climatology relation with meteorology – composition and structure of atmosphere – Temperature: Horizontal and vertical distribution – Heat Balance.

UNIT – II

Atmospheric pressure: Distribution, Major pressure belts, General circulation of the atmosphere – Planetary winds – Secondary or seasonal winds, local Winds Jet Streams – Atmospheric humidity – Evaporation – Condensation and precipitation.

UNIT – III

Atmospheric disturbances: Cyclone and anti cyclone – Tropical and temperate cyclones – Ocean and atmospheric interaction: E1 Nino, Southern oscillation (ENSO) and La Nina impacts.

UNIT – IV

Indian Monsoon Mechanism, Significance and Impact – recent phenomena – Methods of climatic classification – Koppen and Thornthwaite.

UNIT – V

Applied climatic concepts: Urban climate – micro climate – Human Comfort Zone – Importance of weather stations and Indian Meteorological department – Satellite weather reports.

References:

1. Trewartha. GT. (1968) – Introduction to Climate McGraw Hill New York.
2. Critch field H.J. (1975) – General Climatology, Prentice Hall New Delhi
3. Lal D.S. (1986) – Climatology, Chaitanya Publishing House, Allahabad.
4. Smith – Applied Climatology.

P.G Question Paper Pattern (SEM.: 75 marks + CIA: 25 marks = Total: 100 marks)

| | | |
|---|---|---|
| Section – A | Ten questions (two questions for each unit) | 10 x 2 = 20 marks |
| Section – B | Five questions (two questions for each unit – either or type) | 5 x 5 = 25 marks |
| Section – C | Three questions (out of five one question from each unit) | 3 x 10 = 30 marks |

| SEMESTER I | CORE II | Hours 6 | Credit 5 |
|---|---|---|---|

# Regional Geography of India

**Objectives**: At the end of the course students able to

1. Explain the distribution of various resources of India
2. Explain the problems and prospects of resource based activities in India.

UNIT – I

Concept of Resources, Classification of resources and Geographical distribution of resources in India. Major Physiographic regions of India.

UNIT – II

Land resources – Distribution of land, Land use pattern. Water resources – rainfall distribution, major river systems, Canal and Lakes, Multipurpose project, irrigation types and distribution. Soil resources – Soil types and distribution, fertility. Forest resources – distribution of forest, wild life sanctuaries and national parks. Land use changes in Agriculture and Natural vegetation.

UNIT – III

Agriculture resources – agriculture land use, intensity of cropping. Wet and dry farming, cropping pattern, Distribution of major crops: – food crops, plantation crops, horticulture crops, fiber crops, Green revolution. Animal resources – Distribution of cattle & sheep rearing, white revolution Fisheries: – fresh and marine water fishing, blue revolution.

UNIT – IV

Mineral resources – Distribution of minerals, fuel minerals. Petroleum – distribution of oil fields, production of petroleum, petroleum refineries, natural gas. Metallic minerals and non metallic mineral distribution. Power resources – Hydroelectric, Thermal, and nuclear power generation. Non conventional source of energy – biogas, solar, wind and tidal – Industrial resources – distribution of major industries, knowledge based Industries, industrial clustering. Industrial policy and its impact – Transport – Roadways, Railways, Airways. Communication network.

UNIT – V

Human resources – Growth, distribution and density. Indicators of human development: – Health Indicator, Social Indicator, and Economic Indicator – Population problems, foreign trade and brain drain.

References:

1. Gopal Singh – Geography of India, Atma ram & sons, New Delhi.
2. Sharma T C and Countiho O – Economic and commercial geography of India, Vikas publishing home, New Delhi.
3. Thirtha R – Geography of India.
4. Rudder Datt & K P M Sundaram – Indian economy, S. Chand & Company, New Delhi.

P.G Question Paper Pattern (SEM.: 75 marks + CIA: 25 marks = Total: 100 marks)

| | | |
|---|---|---|
| Section – A | Ten questions (two questions for each unit) | 10 x 2 = 20 marks |
| Section – B | Five questions (two questions for each unit – either or type) | 5 x 5 = 25 marks |
| Section – C | Three questions (out of five one question from each unit) | 3 x 10 = 30 marks |

| SEMESTER I | CORE III | Hours 6 | Credit 4 |
|---|---|---|---|

# Geography of Population

**Objectives**: At the end of the course students able to

1. Explain the concepts and attributes of population
2. Explain various theories of population and concept of socio -economic development

UNIT – I

Population Geography: Definition, Nature and Scope, Population Data – Sources – Reliability and problems of population data, Census in India.

UNIT – II

Population distribution and Density, Population Growth, Pattern of World population. Population distribution and Density, Population Growth and Pattern of Indian Population. Factors affecting distribution, Growth and density of population.

UNIT – III

Population Composition – (Age, Sex, Race, literacy, religion and rural urban population), Components of population growth – Fertility, Mortality and Migration – Types of migration, Determinants and Consequences of Migration, Population Projection methods and population Pyramid.

UNIT – IV

Theories of Population – Malthusian Theory, Theory of Optimum, Over and Under Population by Dalton and Robbins, Demographic Transition Theory by W.S Thompson.

UNIT – V

Population and development: Population resource regions and levels of population and social economic development: Human Development Index (HDI) and its components: India's population policies: Population and Environment; Implication for the Future.

References:

1. Ghosh. B.N. (1987) – Fundamentals of Population Geography, Sterling Publishers Ltd., New Delhi.
2. Clarke John. I. (1981) – Introduction to Demography, Surjeet Publication, New Delhi.
3. Hornby William (1986) – An Introduction to Population, Cambridge University Press, London.
4. Glenn. T. Trewartha – Geography of Population-World pattern, John Willey and Sons Publications.

P.G Question Paper Pattern (SEM.: 75 marks + CIA: 25 marks = Total: 100 marks)

| | | |
|---|---|---|
| Section – A | Ten questions (two questions for each unit) | 10 x 2 = 20 marks |
| Section – B | Five questions (two questions for each unit – either or type) | 5 x 5 = 25 marks |
| Section – C | Three questions (out of five one question from each unit) | 3 x 10 = 30 marks |

| SEMESTER I | CORE IV | Hours 6 | Credit 4 |
|---|---|---|---|

# Oceanography

**Objectives**: At the end of the course students able to

1. State the importance of ocean.
2. Describe the physical and chemical properties of the Ocean.
3. Explain the movements and circulation of the ocean water.
4. Explain the need of conservation of ocean resources.

UNIT – I

Nature and Scope of Oceanography, Distribution of Land and Water – Distribution of major Oceans and Seas – Distribution of Major Oceanic Islands.

UNIT – II

Surface configuration of the Ocean floor: Continental shelf, Continental Slope, Abyssal plain, Oceanic ridge and trench – Relief of Atlantic, Pacific and Indian Ocean.

UNIT – III

Distribution of Temperature and Salinity in Ocean and Sea. Movements of Oceanic Water: Waves – types – Tides – type and theories.

UNIT – IV

Ocean currents of the Atlantic, Pacific and Indian Ocean – Marine Deposits – types and distribution. Coral reefs – types, distribution and theories of origin, resource – fish, Minerals (manganese, oil natural gas)

UNIT – V

Applications: Water pollution; causes, consequences and mitigation: Recent issues of water pollution, Marine Pollution: Changes of Ocean temperature and life due to Global Warming.

References:

1. Davis. Richard J.A. – Oceanography-An Introduction to the Marine Environment. Wm. C. Brown lowa. 1986.
2. Garrison, T. – Oceanography-An Introduction to Marine Science, Books/Cole, Pacific Grove, USA, 2001.
3. King, C.A.M. – Oceanography for Geographers, 1962.
4. Sharma, R.C. – The Oceans, Rajesh, New Delhi. 1985.
5. D.S. Lal, – Oceanography, 2010.
6. Vattal and Sharma, – Oceanography, 2009.

P.G Question Paper Pattern (SEM.: 75 marks + CIA: 25 marks = Total: 100 marks)

| | | |
|---|---|---|
| Section – A | Ten questions (two questions for each unit) | 10 x 2 = 20 marks |
| Section – B | Five questions (two questions for each unit – either or type) | 5 x 5 = 25 marks |
| Section – C | Three questions (out of five one question from each unit) | 3 x 10 = 30 marks |

| SEMESTER I | CORE PRACTICAL V | Hours 6 | Credit 4 |
|---|---|---|---|

# Terrain Mapping and Climatic data Analysis

**Objectives**: At the end of the course students able to

1. Draw various types of profile to given contour maps.
2. Draw climatic, morphomtric and slope analysis.

UNIT – I

Drawing Profiles: Serial, Superimposed, Projected and Composite Profiles.

UNIT – II

Climatic Data Analysis: Foster's Climograph, climatograph, Rainfall Dispersion diagram – Octagonal Wind Rose – Track of Cyclone.

UNIT – III

Morphometric Analysis: Identification of stream Orders – Bifurcation Ratio – Drainage Density

UNIT – IV

Shape measurement: Miller's Circularity Ratio, Boyce Clarke method and length Breath Ratio Method.

UNIT – V

Slope Analysis: Wentworth, Smith and Robinson Methods.

References:

1. Gopal Singh – Map Work and practical Geography, Vikas publishing House Pvt. Ltd.,
2. Misra, R.P. and Ramesh, A (1989) – Fundamentals of Cartography, Concept Publishing Co., New Delhi.
3. Rampal, K.K. – Mapping and Compilation-Methods and Techniques, concept publishing.
4. Singh R.L. – Elements of Practical Geography, Kalyani Publishers, New Delhi.

For P G Practicals, Five questions without choice is the common pattern.

(Record: 15 Marks + Question: 5 x 12= 60 Marks = Total: 75 Marks)

| SEMESTER II | CORE VI | Hours 6 | Credit 5 |
|---|---|---|---|

# Advanced Geomorphology

**Objectives**: At the end of the course students able to

1. Explain the basic concepts and contents of Geomorphology
2. Explain geomorphic and gradation process and it associated land forms.

UNIT – I

Nature, Scope and development – Basic concepts in Geomorphology – Endogenic processes – Fold, fault, Earthquake, Volcanoes, – Continental drift – Plate Tectonics.

UNIT – II

Exogenic processes – Weathering – Mass movement – Soils – Concept of land form evolution – Davis and Penk concepts

UNIT – III

Arid Cycle – Slopes – Basic Characteristics – Ideas of Wood – Concept of slope decline, slope replacement and parallel retreat of slopes.

UNIT – IV

Fluvial land forms – Aeolian land forms – Karst landforms – Glacial land forms – Coastal landforms – Classification of coasts

UNIT – V

Ice Ages – Climate Geomorphology – Morphogenetic regions – Applied Geomorphology with reference to Engineering, minerals exploration and hydrological studies.

References:

1. Thorn bury W.D. (1969) – Principles of Geomorphology, John Wiley and sons New York.
2. Strahler, A.N. & Strahler A.H. (1984) – Elements of physical Geography, John &Wiley.
3. Small. R.J. (1975) – The Study of landforms, Cambridge University Press Cambridge, Sparks (1984) Geomorphology, Longmans.
4. Savindra Singh (2002) – Geomorphology, Kalyan Publications, New Delhi.

P.G Question Paper Pattern (SEM.: 75 marks + CIA: 25 marks = Total: 100 marks)

| | | |
|---|---|---|
| Section – A | Ten questions (two questions for each unit) | 10 x 2 = 20 marks |
| Section – B | Five questions (two questions for each unit – either or type) | 5 x 5 = 25 marks |
| Section – C | Three questions (out of five one question from each unit) | 3 x 10 = 30 marks |

| SEMESTER II | CORE VII | Hours 6 | Credit 5 |
|---|---|---|---|

# Agricultural Geography

**Objectives**: At the end of the course students able to

1 Explain the features of agriculture and their concentration.
2 Explain problem and prospectus of agriculture geography

UNIT – I

Nature – Scope and significance of Agricultural Geography – Approaches to the study of Agricultural Geography – Origin of Agriculture – Genecenters.

UNIT – II

Determinants of Agriculture – Physical, Socioeconomic, Institutional and technological. Agricultural data source and statistics – Geographical statistics, Agricultural statistics and Land Utilization statistics – recent development of Agriculture – Remote sensing.

UNIT – III

Models in Agricultural Geography; Von Thunan model of Agricultural location and modification O.L. Jonsasson's model – Green revolution in India.

UNIT – IV

Agricultural Rationalization – Cropping Pattern, Crop concentration and measurement of Agricultural productivity, Crop diversification regions – Bhatia .Crop combination regions: Weavers, Doi's, Raffiuallah and Coppock's.

UNIT – V

Agricultural systems of the World – A review of Whittlesey's Agricultural classification, Agricultural regions of India and the characteristics.

References:

1. Jabir Saingh K. Dhillon S, S. 1984 – Agricultural Geography, Tata McGraw Hill, New Delhi.
2. Hussian. M 1979 – Systematic Agricultural Geography Rawat Publication Jaipur, New Delhi.
3. Mohamed N 1981 – Perspective Agricultural Geography, vol. l, Concepts publishing.
4. Morgan W.B. Monton R.J.C. 1971 – Agricultural, London.

P.G Question Paper Pattern (SEM.: 75 marks + CIA: 25 marks = Total: 100 marks)

| | | |
|---|---|---|
| Section – A | Ten questions (two questions for each unit) | 10 x 2 = 20 marks |
| Section – B | Five questions (two questions for each unit – either or type) | 5 x 5 = 25 marks |
| Section – C | Three questions (out of five one question from each unit) | 3 x 10 = 30 marks |

| SEMESTER II | CORE VIII | Hours 6 | Credit 5 |
|---|---|---|---|

# Geographical Thought

**Objectives**: At the end of the course students able to

1. Explain the geographical thought during the period of pre history, history, and various major schools.
2. Explain the traditions, dualisms, & recent trends in geographical studies.

UNIT – I

Pre-history of geographical thoughts – Greeks, Roman, Arab and Indian. Impacts of Exploration and Discoveries in Geographical Thought.

UNIT – II

Four traditions in Geography: Man – Land, Area Studies, Spatial and Earth Sciences – Growth of mapping techniques.

UNIT – III

Major Geographical Thoughts – America: Davis, Bowman and Hortshone, British: Machinder, Huntington, Roxby, German: Humbolt, Ritter, Penk, France: Vidal de la blache, Jean Brunhes, Albert Demangeon, Darwinism – impact on Geographical Thought.

UNIT – IV

Dualism in Geography, Dicatamy between determinism and possibilism: Physical human, ideogaphic – nomothetic, qualitative – quantitative, Quantitative revolution and Positivism, Neo – determinism, Probablism, Radicalism, Behaviourlism, Humanism, Paradigms in Geography.

UNIT – V

Systems Approach, Areal Differentiation, Spatial Organisation, Time – Space Geography, Recent trends in Geographical Studies, Space technology, GIS & GPS and Remote Sensing.

References:

1. M.Hussian (2009) – Evolution of Geographical Thought.
2. S.Adikari (2007) – Geographical Thought.
3. Freeman.R (1970) – Hundred years of Geography, Hutchinson, London.
4. M.Hussian (2009) – Human Geography.

P.G Question Paper Pattern (SEM.: 75 marks + CIA: 25 marks = Total: 100 marks)

| | | |
|---|---|---|
| Section – A | Ten questions (two questions for each unit) | 10 x 2 = 20 marks |
| Section – B | Five questions (two questions for each unit – either or type) | 5 x 5 = 25 marks |
| Section – C | Three questions (out of five one question from each unit) | 3 x 10 = 30 marks |

| SEMESTER II | CORE IX | Hours 6 | Credit 4 |
|---|---|---|---|

# Thematic Cartography

**Objectives**: At the end of the course students able to

1. Know the history, development and scope of thematic cartography
2. Explain the basic concepts of thematic cartography.

UNIT – I

Cartography as an Integrated Discipline: Nature and Scope of Cartography – Meaning of Maps – Photographs, and Satellite Images – Types and Uses of Maps – Artistic Learning and Scientific Bases of Cartography – Cartography as a Human Communication – Branches of Cartography.

UNIT – II

History and development of Cartography: Ancient Period – Late Medieval Period – Early Modern Period – Recent Period – Cartography as a Profession – Divisions – Commercial Cartography – Development of Cartography in India.

UNIT – III

Map Making Process: Procedure of Map Data – Compilation – Pull – Ups – Compiling Physical and Cultural Details – Selection of Details – Elements of Generalization: Simplification, Classification – Generalization – Controls – Symbolization – Thematic and Complex Mapping: Types and Problems.

UNIT – IV

Map Design and Layout: Principles – Theory of Visual Perception – Making Symbols Visually Significant Constraint in Map Design – Map Format – Maps for children, Neo – Literates and Blind.

UNIT – V

Toponomy and Map Reproduction: Lettering and Toponomy, Drawing Materials and Equipment – Map Reproduction: Planning Processes Related to Duplicating, Printing and Latest Methods – Automated Cartography.

References:

1. Misra R.P. and Ramesh. (1989) – Fundamentals of Cartography, Concept publishing Co., New Delhi.
2. Neg. P. Ed., (1992) – Cartography and Remote Sensing, Concept Publishing Company, New Delhi.
3. Robinson, A.H. Sale Morrision J.L. and Muehrake (1985) – Elements of Cartography, John Wiley Sons, New York.

P.G Question Paper Pattern (SEM.: 75 marks + CIA: 25 marks = Total: 100 marks)

| | | |
|---|---|---|
| Section – A | Ten questions (two questions for each unit) | 10 x 2 = 20 marks |
| Section – B | Five questions (two questions for each unit – either or type) | 5 x 5 = 25 marks |
| Section – C | Three questions (out of five one question from each unit) | 3 x 10 = 30 marks |

| SEMESTER II | CORE PRACTICAL X | Hours 6 | Credit 4 |
|---|---|---|---|

# Practical – Mapping of Population and Economic Data

**Objectives**: At the end of the course students able to

1. Draw the various types proper graphs based on available data
2. Draw the various population and economic data and interpreted.

UNIT – I

Graphs: Simple graphs, semi – Logarithmic, Log – Log (Double Log) Graphs, Triangular graphs and Lorenz curve.

UNIT – II

Population distribution maps: Isopleths, Choropleth and The zipf Rank – Size Rule of City Populations – Population potential map.

UNIT – III

Mapping of Agricultural data: Cropped Area, Crop Ranking, Cropping intensity, Concentration, Diversification.

UNIT – IV

Crop Composition: Weaver, Doi's Raffiullah and Coppock's Methods.

UNIT – V

Mapping of flow data – Traffic flow diagram, Ray diagram and complex mapping.

References:

1. Hammond. R. Macullagh. P.S. – Quantitative techniques in Geography.
2. Peter Toyne and Newboy P.T. – Techniques in Human Geography.
3. Monkhouse, F.J. and Wilkinson H.R. – Maps and Diagrams, London, Methuen & Co., Ltd UK.
4. King L.J. – Statistical analysis in Geography
5. Ebton, – Statistics for Geography.
6. Misra R.P and Ramesh A (1989) – Fundamentals of Cartography, Concept Publishing Co., New Delhi.
7. Singh. J and Dhillon – Agricultural Geography.

For P G Practicals, Five questions without choice is the common pattern.

(Record: 15 Marks + Question: 5 x 12= 60 Marks = Total: 75 Marks)

| SEMESTER III | CORE XI | Hours 6 | Credit 5 |
|---|---|---|---|

# Remote Sensing Applications in Geography

**Objectives**: At the end of the course students able to

1. Explain the concepts of remote sensing.
2. Explain the application of remote sensing in geography.

UNIT – I

Remote sensing – Definition, Historical development – Energy source, EMR (Electromagnetic Ration) – Remote sensing systems; Platforms, Sensors and radiation records.

UNIT – II

Satellite Remote Sensing – Platforms – LANDSAT, SPOT, IRS AND IKONOS. SENSORS – Scanning; Scanning and orbiting mechanism – resolution; spectral characteristics and bands of various satellites.

UNIT – III

Aerial Remote Sensing; Types of aerial Photography – Scales and Ground coverage. Resolution, Films, Filters, cameras. Air photo interpretation; Shape, Size, Pattern, Tone, Texture, Shadows and Site.

UNIT – IV

Fundamentals of Image Interpretation – Visual Image Interpretation, Image Rectification, Image enhancement – Classification – Supervised and Unsupervised – Ground truth verification.

UNIT – V

Applications: Air photo comparison and adjustments of information with toposheets. Land use and land cover – Urban land use, land form and its processes – water resources, Environment Disaster Management – Public Health and Control programmes. Indian Remote Sensing centres and Activities of Remote sensing satellites.

References:

1. Thomas, M.Lillesand (1986) – Fundamentals of Remote Sensing, Willy Sons, New York.
2. John R.Jensen (2003) – Remote Sensing of the Environment, Person Education, New Delhi.
3. Curran (1985) – Principles of Remote Sensing, Longman, London.
4. Lo.C.P. (1986) – Applied of Remote Sensing, Longman, London.
5. Chouhan U.R. (1998) – Remote Sensing and Photogrammetry Principles and applications, Vigyan Prakashan, Jodhpur.

P.G Question Paper Pattern (SEM.: 75 marks + CIA: 25 marks = Total: 100 marks)

| | | |
|---|---|---|
| Section – A | Ten questions (two questions for each unit) | 10 x 2 = 20 marks |
| Section – B | Five questions (two questions for each unit – either or type) | 5 x 5 = 25 marks |
| Section – C | Three questions (out of five one question from each unit) | 3 x 10 = 30 marks |

| SEMESTER III | CORE XII | Hours 6 | Credit 5 |
|---|---|---|---|

# GIS and GPS Techniques in Geography

**Objectives**: At the end of the course students able to

1. Explain the concepts of GIS and its various components.
2. Explain the function of GPS and its application.

UNIT – I

Geography and information technology – Definition – Basic concepts – components – Functions.

UNIT – II

Data base: Spatial – Non Spatial Data. Sources of Spatial Data: Maps, Air photographs, Satellite Imageries and GPS. Non – Spatial Data: Census, Other Govt. Reports. Graphic representation of Spatial data – Raster Data Representation – Vector data Representation (Point, Line and Area).

UNIT – III

Spatial Data models: Geo-referencing. Raster GIS Data models: Simple Raster Array – Hierarchical raster structures. Vector GIS Models: Spaghetti Model – Topological Models Representation Digitization. Raster and Vector Data Models Advantages and Disadvantages.

UNIT – IV

GIS data Management: Data Base Management Systems (DBMS). Data Input and Editing – Existing Datasets – Creation of Data – Data input Methods: Keyboard Entry – Manual Digitizing – Scanning. Types of Digitizing Errors in GIS – Dangles – Switchbacks, Knots, and Loops – overshoots and undershoots – livers. Techniques: Query (Boolean Operation), Buffering and Overlay Analysis. Modeling Surfaces – DEM and TIN.

UNIT – V

Global Positioning System (GPS) – Introduction – System Elements (Three segments) – Constellation Design.

References:

1. Kang – Sung Chang (2002) – Introduction to Geographic Information System. Tata McGraw Hill Publishing Company lit. New Delhi.
2. Peter A. Burrough and Rachael A. Medonnell (1998) – Principals of Geographic Information System, Oxford University Press, New York.
3. Anji Reddy M. (2014) –Textbook of Remote Sensing and Geographical Information Systems, BS Publications.
4. Anand P.H. (2003) – Principles of Remote Sensing and GIS, Srivenkateswara Publishers, Kumbakonam.

P.G Question Paper Pattern (SEM.: 75 marks + CIA: 25 marks = Total: 100 marks)

| | | |
|---|---|---|
| Section – A | Ten questions (two questions for each unit) | 10 x 2 = 20 marks |
| Section – B | Five questions (two questions for each unit – either or type) | 5 x 5 = 25 marks |
| Section – C | Three questions (out of five one question from each unit) | 3 x 10 = 30 marks |

| SEMESTER III | CORE PRACTICAL XIII | Hours 6 | Credit 5 |
|---|---|---|---|

# Remote Sensing and GIS Techniques

**Objectives**: At the end of the course students able to

1. Explain the concepts and types of aerial photographs.
2. Do stereovision test, visual interpretation and digital image processing.

UNIT – I

Aerial Remote Sensing: – Marginal Information – Determination of Scales and Height – Interpretation of Aerial Photographs – Stereo pairs and Stereograms – Mapping from Aerial Photographs.

UNIT – II

Satellite Imagery: – Marginal Information – Image interpretation – Visual interpretation techniques – Digital Image Processing : – Digital numbers – Colour composites – Image Classification – Supervised and Un Supervised – Preparation of Thematic layers.(General Land use).

UNIT – III

Geo referencing of spatial data – Vector and Raster data – Margins – Scans – Digitization – Editing and creation of attribute tables – Preparation of Thematic Maps.

UNIT – IV

Integration of attribute data – Query – Overlay analysis – Map Algebra Reclassification – Creation of DEM and TIN.

UNIT – V

GPS – GPS survey – Preparation of Maps using GIS software.

References:

1. Lillesand, T.M., and Keifer, R.W., (1994) – Remote Sensing and Image Interpretation, John Wiley & Sons, New York.
2. Rampall, K.K., (1999) – Hand book of Aerial Photography and Interpretation, Concept Publishing Co., New Delhi.
3. Sabins, F.F.Jr., (1987) – Remote Sensing: Principles and Interpretation, W.H. Freeman & Co., New York.
4. Strandberg, C.H, (1967) – Aerial Discovery Manual, John Wiley & Sons, New York.

P G Question Paper Pattern for Practical and EDC

(SEM.: (5 x15 =) 75 marks + CIA: 25 marks = Total: 100 marks)

Five questions out of 8, minimum one question from each unit is compulsory.

| SEMESTER III | CBE I | Hours 6 | Credit 4 |
|---|---|---|---|

# Research Methodology in Geography

**Objectives**: At the end of the course students able to

1. Explain the concepts and process of research methodology in geography.
2. Explain the concepts of analysis of data and method of report writing.

UNIT – I

Research Trends in Geography, Meaning – Need for Scientific Research – Types of Research – Approaches to Geographical Research: Identification of Fields, Area of Interests and Themes.

UNIT – II

Logic in Research: Hypotheses, Concepts and Facts, Principles, Laws and Theory and Their Implications in Geographical Research – Role of Models.

UNIT – III

Data Acquisition and Analysis: Collection of Data – Source of Data: Primary and Secondary, Sampling Techniques, Structuring Database – Data Transformation – Simple Quantitative Techniques in Analysis of Data: Correlation, Chi – Square, Simple Regression.

UNIT – IV

Research Design: Literature Survey, Selection of the Topic – Statement of the problem – Formulation of Hypotheses, Testing of Hypotheses – Time Schedule, Bibliography – Role of Inter Net, Preparation of Proposal and Research Design.

UNIT – V

Thesis Writing: Organization of the Thesis, Thesis Writing Styles, Formats, Literature Review and Appraisal, Reference Materials. Selection of Writing and Reference Citing Styles, Drafting of Thesis, Thesis Editing and Enriching – Writing of Abstracts, Reports, Research Papers and Research Project Proposal.

References:

1. Anderson J, Durston, B.H. and Poole, M. (1970) – Thesis and Assignment Writing. Wiley Eastern Ltd., New Delhi.
2. Demoko et al. – Scientific Reasoning in Geographical Research.
3. Cooray P.G. (1992) – Guide to Scientific and Technical Writing, Hindagala, Sri Lanka.
4. Davis J.C. (1986) – Statistics and Data Analysis in Geology, John wiley and Sons, New York.
5. Davis W.K.D. (1972) – Conceptual Revolution in Geography, University of London Press Ltd., London.
6. Fitzgearld B.P. et al., (1974) – Science in Geography 1, 2, 3, 4, 5 and 6, Oxford University Press, London.
7. Hammond. R and Megullagh, P., (1978) – Quantitative Techniques in Geography: An Introduction, Clarendon Press, Oxford
8. Hanag. L.L., and Lounsbury, J.F. (1971) – Research Methods in Geography, Brown Company Publishers, Lowa.

P.G Question Paper Pattern (SEM.: 75 marks + CIA: 25 marks = Total: 100 marks)

| | | |
|---|---|---|
| Section – A | Ten questions (two questions for each unit) | 10 x 2 = 20 marks |
| Section – B | Five questions (two questions for each unit – either or type) | 5 x 5 = 25 marks |
| Section – C | Three questions (out of five one question from each unit) | 3 x 10 = 30 marks |

| SEMESTER III | CBE II | Hours 6 | Credit 4 |
|---|---|---|---|

# Regional Planning and Development

**Objectives**: At the end of the course students able to

1. Explain the basic concepts and approaches of regional planning.
2. Explain the regional planning of India and Tamil Nadu.

UNIT – I

Geography of Regional planning: Concept of region – regions. Delineation of Formal Regions – Delineation of formal regions – Regional imbalance, India and Disparity – Functional and Formal regions.

UNIT – II

Principles and scope and content of Regional planning – Regional imbalances and inequalities in India. Concept of regional Hierarchy – Sectoral and Spatial planning.

UNIT – III

Theories of Regional Development: Economic base Theory – Location Allocation Models – Linear programming, Growth Pole Theory and Diffusion models – Input – output analysis, Cost benefit analysis.

UNIT – IV

Types of regional planning: Urban planning, Integrated Rural and urban Development planning – Identification of characteristics of backward and drought prone regions and planning for its development – Water shed management. Principles of Regionalisation at macro, meso and micro levels – regional and state level planning programmes Five year planning, Multi level planning and Town planning.

UNIT – V

Delineation and demarcation of planning regions at national and state levels – planning regions of India. Environmental Impact Assessment, Disaster management and Planning – Disaster management Authority of India.

References:

1. Misra R.P. (1971) – Regional Planning: Concepts Techniques, Politics and case Studies, University Mysore, Mysore.
2. Misra R.P., Sundaram K.V. and V.L.S. Prakasa Rao (1974) – Regional Development in India, Vikas Publishing house, New Delhi.
3. Mahesh chand and Puri V.K. (2000) – Regional planning in India, Allied Publishers Ltd., New Delhi.

P.G Question Paper Pattern (SEM.: 75 marks + CIA: 25 marks = Total: 100 marks)

| | | |
|---|---|---|
| Section – A | Ten questions (two questions for each unit) | 10 x 2 = 20 marks |
| Section – B | Five questions (two questions for each unit – either or type) | 5 x 5 = 25 marks |
| Section – C | Three questions (out of five one question from each unit) | 3 x 10 = 30 marks |

| SEMESTER IV | CORE XIV | Hours 6 | Credit 5 |
|---|---|---|---|

# Urban Geography

**Objectives**: At the end of the course students able to

1. Explain the nature and growth of urbanization in India.
2. Explain the concepts of classification of urban and urban problems.

UNIT – I

Nature and Scope of urban Geography – Factors and Causes of Urban and Sub – Urbanization Growth, World Urbanization: Modern Periods – Urbanization in India: Pre and Post

UNIT – II

Urban Demographic Structure – Age and Sex Ratio, Literacy, Population density and Distribution – Occupational Structure – Distance Decay.

UNIT – III

Economic Base: Basic and Non – Basis concepts – Urban Classification: Morphological – Functional Classification of cities: Aurosseau, Harrision and Nelson only – Urban Land Use and Ecology – Urban land use models: Primary of cities, Rank Size Rule, Urban Hierarchy and Christaller's central Place Model, Concentric zone, Sector and Multiple Nuclear Models – Social area analysis – Residential land use – CBD Region Hierarchy.

UNIT – IV

Urban Expansions: Horizontal and Vertical – Urban Sprawl – Fringe – Sub – Urban Concepts of Satellite Towns and New Towns – City Region Hierarchy.

UNIT – V

Urban problems: Slums, Solid Waste, Supply and Transport Pollution, Urban planning Operational, Developmental and Restorative Planning.

References:

1. Jones. E (1970) – Towns and cities, Oxford University Press.
2. Yeates and Corner – The North American City Harper and Row.
3. Carter, H. – The Study of Urban Geography, Edward Arnold, London.
4. Major and Kohn – Readings in Urban Geography, Central book Dept., Allahabad.
5. Northam, U.K. (1975) – Urban Geography, John Wiley and Sons.
6. Johnson J.H. – Urban Geography, Pergaon.

P.G Question Paper Pattern (SEM.: 75 marks + CIA: 25 marks = Total: 100 marks)

| | | |
|---|---|---|
| Section – A | Ten questions (two questions for each unit) | 10 x 2 = 20 marks |
| Section – B | Five questions (two questions for each unit – either or type) | 5 x 5 = 25 marks |
| Section – C | Three questions (out of five one question from each unit) | 3 x 10 = 30 marks |

| SEMESTER IV | CORE PRACTICAL XV | Hours 6 | Credit 5 |
|---|---|---|---|

# Quantitative Techniques in Geography

**Objectives**: At the end of the course students able to

1. Do spatial and transport network analysis.
2. Find measures of central tendencies and related findings
3. Do testing of hypothesis

UNIT – I

Spatial Analysis – Centro graphic analysis: Mean center – weighted mean Median center – Standard Distance – Nearest neighbour analysis.

UNIT – II

Transport network analysis – Topology – Connectivity – alpha – beta – gamma indices

UNIT- III

Accessibility measures – shortest path and binary index and detour index.

UNIT – IV

Measures of central tendency, Dispersion. Correlation – Linear regression.

UNIT – V

Testing of hypothesis T – Test, F – Test, Chi – Square Test.

References:

1. Monhkose & Wilknson (1976) – Maps and diagrams Mathew London.
2. Peter Toyne – Techniques in Human Geography.
3. Hammond R. – An Introduction Quantitative techniques in Geography, McGraw Hill, Company, London.
4. Lillesand T.M. & R.W. Kifer (1986) – Remote Sensing and Image Interpretation, John Wiley Sons, New York.
5. Sabins F.F. Jr. (1986) – Principle of Remote Sensing, English Books Society, Long Man.

P G Question Paper Pattern for Practical and EDC

(SEM.: (5 x15 =) 75 marks + CIA: 25 marks = Total: 100 marks)

Five questions out of 8, minimum one question from each unit is compulsory.

| SEMESTER IV | CBE III | Hours 6 | Credit 5 |
|---|---|---|---|

# Political Geography

**Objectives**: At the end of the course students able to

1. Explain the concept of nation, state, frontier and boundaries.
2. Explain the National and international political issues based on geopolitics.

UNIT – I

Nation and State: Concept of State – criteria of state – types of state; concept of Nation – Nation and State relationship.

UNIT – II

Nation building in India: State reorganization – Geographical factors in federalism – Geographical basis of Indian federalism – Rationalization in India – Causes and consequences of Regionalism – Tackling regionalism in India.

UNIT – III

Territory: Frontiers definition and concept, classification of frontiers; Boundaries definition and concept, classification of boundaries (Generic and functional); difference between frontiers and boundaries; Buffer zone – Nature and character.

UNIT – IV

India's Border issues: Background – Land boundaries (Indo-china, Indo-Pakistan, India-Bangladesh) Maritime boundary demarcation (South Asian case, Bangladesh, Pakistan, Sri Lanka, Thailand, Burma, Maldives).

UNIT – V

Geopolitics: Development of concept – Mackinder's Heartland Thesis (1904, 1919 & 1943), Spykman's Rimland Theory. Contemporary Geopolitics: Geopolitics of peace, post cold war geopolitics, future geopolitics of multipolarity and polycentrism, Geopolitics of Indian Ocean.

References:

1. Nation, State, Territory and Geopolitics – K. Siddhartha
2. Geography for civil services mains examination – Spectrum Publications.

P.G Question Paper Pattern (SEM.: 75 marks + CIA: 25 marks = Total: 100 marks)

| | | |
|---|---|---|
| Section – A | Ten questions (two questions for each unit) | 10 x 2 = 20 marks |
| Section – B | Five questions (two questions for each unit – either or type) | 5 x 5 = 25 marks |
| Section – C | Three questions (out of five one question from each unit) | 3 x 10 = 30 marks |

| SEMESTER IV | CBE IV | Hours 6 | Credit 4 |
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# Social and Cultural Geography

**Objectives**: At the end of the course students able to

1. Study socio-cultural properties of Geography.
2. Healthy, wealthy practices and social justice in Geography.

UNIT – I

Society and culture as essential elements of geographical studies – Definition, Nature, Scope and Significance of Social and Cultural Geography.

UNIT – II

Social differentiation and region formation – Role of ethnicity, caste, food, language, and religion in social diversity and Region formation in India. North-South, socio-cultural diversity of India.

UNIT – III

Concept of culture, culture complex, culture areas and cultural regions, cultural heritage, cultural interactions, cultural hearths and cultural diffusion and cultural ecology, cultural imperialism, World cultural Realms.

UNIT – IV

Health – factors affecting human health – nutritional status, diseases – etiological condition, classification and distribution patterns – Health care planning and policies in India.

UNIT – V

Concept of social justice and fair society – social development and wellbeing indicators for measurement, levels of development and wellbeing in India.

References:

1. Majid Husain – Human Geography – Rawat Publications 1994.
2. Gillian C. Morgan – Human and Economic Geography, Oxford University Publications 1999
3. Aime Vincent Perpillou – Human Geography, Longman Group limited London 1977.
4. Crang, Milke – Cultural Geography, Roultedge Publications, London 1998.
5. Ahmand, Aijiazuddin – Social Geography, Rawat Publications, New Delhi, 1999.

P.G Question Paper Pattern (SEM.: 75 marks + CIA: 25 marks = Total: 100 marks)

| | | |
|---|---|---|
| Section – A | Ten questions (two questions for each unit) | 10 x 2 = 20 marks |
| Section – B | Five questions (two questions for each unit – either or type) | 5 x 5 = 25 marks |
| Section – C | Three questions (out of five one question from each unit) | 3 x 10 = 30 marks |

| SEMESTER IV | PROJECT XIV | Hours 6 | Credit 4 |
|---|---|---|---|

# PROJECT