

**M.A./M.Sc. (Previous)**

**Geography**

The Schedule of Papers will be as follows:

- |     |   |           |
|-----|---|-----------|
| (1) | Paper-I Geomorphology.                                    | 100 marks |
| (2) | Paper-II Geography of Resources                           | 100 marks |
| (3) | Paper-III Geographical concepts and Research Methodology. | 100 marks |
| (4) | Paper-IV Any one of the following papers                  | 100 marks |
|     | (a) Climatology and Oceanography                          |           |
|     | (b) Agricultural Geography                                |           |
|     | (c) Geographical information system and Computer mapping  |           |
|     | (d) Geography of Rural Settlements                        |           |
|     | (e) Geography of Tourism                                  |           |
| (5) | Paper-V Practicals  | 100 marks |
- Lab work exercise and excursion.



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**M.A./M.Sc. (Previous)**

**PAPER - I (GEOMORPHOLOGY)**

**M.M.-1**

**Course Contents :**

- Unit -I :** Nature and scope of Geomorphology, Fundamental Concepts- Geological structures and landforms, uniformitarianism, multicyclic and polygenetic evolution of landscapes, concept of threshold, Environmental change - climatic change and geochronological methods-documentary evidence, artifacts major horizons, dendrochronology, pollen, thermoluminescence.
- Unit -II :** Earth movements - epeirogenic, Orogenic and cyratogenic earth movements. Forces of crustal instability, isostasy, plate tectonics, seismicity, vulcanicity, orogenic structures with reference to the evolution of the Himalaya.
- Unit-III :** Exogenic Processes . Concept of gradation, Agents and processes of gradation, causes, types and classification of weathering, massmovement erosional, and depositional processes and resultant landforms and soil formation. Slope evolution, downwearing, parallel retreat and slope replacement models
- Unit-IV :** Geomorphic processes. dynamic of fluvial, glacial, Aeolian, marine and karst processes and resulting landforms complexities in geomorphological processes, Erosion surfaces - techniques of identification and correlation.
- Unit-V :** Applied geomorphology - application of geomorphic mapping terrain evaluation. Digital Elevation Model (DEM) and Triangulated Irregular Network (TIN) unit, land capability and land suitability classification, hydro - geomorphology, urban geomorphology, environmental geomorphology, geomorphic hazards.



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**Suggested Readings :**

1. Chorley, R.J.: Spatial Analysis in Geomorphology, Methuen, London 1972.
2. Cooke, R.U and Doornkamp, J.C.: Geomorphology in Environmental Management 0 A introduction, Clarendon Press, Oxford, 1947.
3. Duly, G.H.: The Face of the Earth, Penguin Harmondsworth, 1959.
4. Fairbridge, R.W. Encyclopedia Geomorphology, Reinholdts, New York, 1968.
5. Goudie, A . The Nature of the Environment, Oxford & Blackwell, London, 1993.

6. Garner, H.F.: The Origin of Landscape - A Synthesis of Geomorphology, Oxford University Press, London, 1974.
7. Mitchell, C.W.: Terrain Evaluation, Longman, London, 1973.
8. Oilier, C.D.. Weathering, Longman, London, 1979.
9. Pitty, A.F. Introduction to Geomorphology, Methuen, London, 1971.
10. Stoddart, D.R. (ed.), : Process and Form in Geomorphology, Routledge, New York, 1996.
11. Skinner, B.J. & Porter, S.C. :, The Dynamic Earth, John Wiley, New York, 1995
12. Sparks, B.W.: Geomorphology, Longman, London, 1960
13. Sharma, H.S (ed.) : Perspectives in Geomorphology, Concept, New Delhi, 1980.
14. Singh, S.: Geomorphology, Prayag Publication, Allahabad, 1998.
15. Thornbury, W.D. Principles of Geomorphology, John Wiley, New York, 1960.

**M.A/M.Sc. (Previous)**

**PAPER - II Geography of Resources**

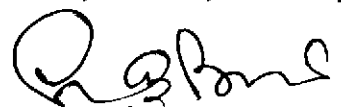
**M.M.-100**

**Course Contents :**

**Unit-I** Introduction : Meaning and Scope of Resource geography, Concept of resource geography, Concept of resources and their relations with nature, man culture, classification of resources, Hierarchy resources in modern world economy, Resource patte

**Unit-II** World resource Soil, water, Biotic- Natural vegetal and wild life, Minerals- Iron ore, manganese, petroleum, Human Resources - Quantitative an Qualitative aspects.

**Unit-III** Resource Utilization : Production & Distribution Wheat, Rice, Cotton, Sugarcane, Milk, wool, fishery classification of Industries, Resource based and footloose industries, theories of Industrial location-Weber, Losch and Isard, case studies selected industries-iron and steel, Aluminum, chemical, oil refining and Petrochemical, Engineering Textile, etc



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**Unit-IV** Resource conservation and resource regions: Concept of resource regions.

Concept of resource conservation Techniques of conservation, conservation of soil, water and Forest Resource, regions of world & India, World Energy Crises.

**Unit-V** Economic development of India, Regional disparities impact of green revolution on Indian economy, Globalization and Indian economy and its impact on environment.

**Books Recommended :**

1. Mamoria and Sharma - Sansadhan Bhoogol.
2. S.D. Kuashik & A Kumar - Sansadhan Bhoogol.
3. Mehdi Reza, Sansadhan Bhoogol.
4. Smith. G.H. (Ed.), Conservation of Natural Resources.
5. Pearson. R.L. - Conserving American Resources.
6. Zimmermann. E.W. - Introduction to world Resources.
7. Renner, G.T. et al. - World Economic Geography: An Introduction to Geoinics.
8. Jones, C.F and Darkenwald, G.C. - Economic Geography.
9. Singh, K.N. and Singh J- Arthik Bhoogol

**M.A/M.SC. (Previous)**

**Paper-III**

**M.M.-100**


**Geographical Concepts And Research Methodology**

**Course Contents :**

**Unit -I** The nature of Geography- from the earliest time to the present day Trends in Geographical thought (i) Concept of Earth Surface (ii) Landscape analysis (iii) Spatial organization (iv) System analysis.

**Unit - II** Concept of region and regionalism -regions of different types and hierarchies, concept of core and marginal areas, concept related to man and environment, relationship-determinism, adaptation, Possiblism, perception of environment, concept relating to city country functional relationship, umland (urban-field.)

**Unit - III** Research Methodology-Meaning and objective of research, types and approaches, research process, problems encountered by researchers in India, Defining research problem, research design, sampling design.

  
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**Unit - IV** Processing and Analysis of data-Methods of measuring concentration and dispersion of human and economic activities, hierarchy of central places and Neighbour analysis, chi-square test, Binomial test, Application of remote sensing techniques.

**Unit V** Hypothesis testing-Needs and types of hypothesis, goodness of fit and significance and confidence levels, parametric and non-parametric procedures, Analysis of variance (ANOVA).

**Suggested Readings :**

1. Singh J , Bhaugolic Chintan ka Mooladhar.
2. Kaushik, S.D., Bhaugolik Vichar Dharain Aur Vidhitantra,
3. Hartshorne, R., Perspectives on the Nature of Geography, Chicago and London, 1959.
4. Tripathi, & Virley, Bhaugolic Chintan ka Vikas Aur Vidhitantra.
5. James, P.E. Jones, C.F., American Geography: Inventory and Prospect, A.A.G. Syracuse University Press, 1964.
6. Woodridge, S W. , The Geographer as a Scientist
7. Crone, J.R., Modern Geography, London, New Edition, 1970.
8. Berry, B.J L. and Marble, D.F., Spatial Analysis- A Reader in Statistical Geography, Englewood Cliffs, N.J., Prentice-Hall, 1968.
9. Freeman, T.W., Geography and Planning, London, 1962
10. Gregory, S., Statistical Methods and the Geographer, London, Longman, 1968
11. David Unwin, Introductory Spatial Analysis, Methuen, London, 1981.
12. Maurice yeats, An Introduction to Quantitative Analysis in Human Geography, McGraw Hill, New York, 1974.
13. Taylor, Peter J., quantitative Method in Geography- An Introduction to Spatial Analysis, H( Jghton, Milffin, Co., Boston, 1977.



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**MS/M.SC. (Previous)**

**Paper-IV (a) Climatology and Oceanography**

**M.M.:100**

**Course Contents**

**PART - (A) CLIMATOLOGY**

**Unit-I** Nature and scope of climatology and its relationship with meteorology.

Composition, mass and structure of the atmosphere

Insolation heat balance of the earth, green house effect; vertical and horizontal distribution of temperature. Atmospheric motion; Forces controlling motion of air vertical motion and vorticity, local winds, jet stream, general circulation in the atmosphere,

Atmospheric moisture, Humidity, evaporation, condensation, precipitation, formation types, acid rain, world pattern of precipitation.

**Unit-II** Tropical, temperate and high latitude weather systems-concept of air masses and atmospheric disturbances, ocean atmospheric interaction - El Nino, Southern oscillation (ENSO) and La Nina, monsoon winds, norwesters, and cyclones Tropical Temperature phenomena, Climate of India and its controls : Western disturbances.


Climatic classification of Koppen and Thornthwaite. Major Climates of the world tropical temperature, desert and mountain climate.

**Unit-III** Climatic changes : Evidences, possible causes ; global warming, environmental impacts 'and society's response.

Applied climatology : Data collection, archiving, accessing, interpretation and generation of climatic information specially for water balance studies, soils, agriculture activities, house types and health.

**PART (B) OCEANOGRAPHY**

**Unit-IV** Definition, History of Science of oceanography. Topography of the ocean bottom. Distribution of Temperature and salinity in the ocean water, Marine Flora, Fauna and deposits, Corals.

  
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**Unit-V** Movement of ocean water : Waves, Currents and tides surface currents of the ocean, intensive study of the Indian ocean. Ocean and future source of minerals and food.

**Suggested Readings**

- 1 Barry, R.G. and Chorley P.J.; Atmosphere, Weather and Climate, Routledge, London and New York, 1998.
2. Critchfield, J H. : General Climatology, Prentice Hall, India, New Delhi, 1993
3. Das, P.K : Monsoons, National Book Trust, New Delhi, 1987.
- 4 Fein, J.S. and Stephens, P.N. : Monsoons, Wiley interscience, 1987.
5. India Met. Deptt.. Climatological Tables of Observations in India. Govt. of India, 1968.
6. Lal, D.S.: Climatology , Chaitanya Publications, Allahabad, 1986.
7. Lydolph, PE : The Climate of the Earth, Rowman, 1985.
- 8 Menon, P.A. . Our Weather, N.B.T., New Delhi, 1989.
9. Peterson, S : Introduction to Meteorology, Mc Graw Hill Book, London, 1969.
10. Robinson, P.J. and Henderson S. : Contemporary Climatology, Henlow, 1999.
- 11 Thompson, R D. and Perry, A (ed). : Applied Climatology, Principles and Practice, Routledge, London, 1997.
12. King, C.A.M , Oceanography.
13. Suredrup, H.V., The Ocean
14. Hukku and Sharma, R.C : Oceanography for Geographers.
15. Lal, D.S.: Climatology and Oceanography.

**M.A./M.SC. (Previous)**

**PAPER - IV (b)**

**M.M.-100**

**Agricultural Geography**

**Course Contents :**

**Unit-I** Nature, scope, significance and development of agricultural geography. Approaches to the study of agricultural geography: Commodity, systematic and regional and systems. Origin and dispersal of agriculture. Sources of agricultural data.

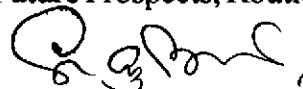


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- Unit-II** Determinants of agricultural land use u Physical, economic, social and technological. Landholding and land tenure systems, Land reforms, land use policy and planning. Selected agricultural concepts and their measurements; cropping pattern, crop concentration, intensity of cropping, degree of commercialisation, diversification and specialization, efficiency and productivity, crop combination regions and agticulariral development. Green Revolution - its impact and consequences ,
- Unit-III** Theories of agricultural location based on several multi-dimensioned factors: Von Thunen’s theory of agricultural location and its recent modifications: Whittlesey’s classification of agricultural regions; land use and land capability.
- Unit-IV** Agricultural, in India- Land use shifting cropping pattern. Regional pattern of productivity in India. - Green Revolution, White Revolution, Food deficit and food surplus regions; nutritional index. Specific problems in Indian agriculture and their management and planning Agricultural Policy in India.
- Unit-V** Contemporary Issues: Food, nutrition and hunger, food security, drought and food security, food aid programmes; environmental degradation, role of irrigation fertilizers, insecticides and pesticides. technological know-how. Employment in the agricultural sector. landless labourers, women, children: ‘occupational health and agricultural activities.

**Suggested Readings :**

1. Bayliss Smith, T.P: The Ecology of Agricultural Systems. Cambridge University Press, London, 1987.
2. Berry, B.J.L. et al : The Geography of Economic Systems. Prentice Hall, New York, 1976.
3. Brown, L.R.: The Changing Food Prospects - The Nineties and Beyond. World Watch Institute, Washington D.C., 1990.
4. Dyson, T.: Population and Food - Global Trends and Future Prospects, Routledge, London, 1996.

  
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5. Gregor, H.P: Geography Of Agriculture. Prentice Hall, New York, 1970.
6. Grigg, D.B. The Agricultural Systems of the World. Cambridge University Delhi, 1988.
7. Hirtshorn, T.N. Alexander, J.W.: Economic Geography Prentice Hall, New Delhi, 1988.
8. Mannion, A.M.: Agriculture and Environment Change. John Wiley, London, 1995.
9. Morgan, W.B. and Norton, R.J.C.; Agricultural Geography. Mthuen, London, 1971
10. Morgan, W.B : Agriculture in the Third World - A Spatial Analysis Westview Press, Boulder, 1978.
11. Sauer, C.O.: Agriculture Origins and Dispersals. M.I.T. Press, Mass, U.S.A., 1969.
12. Singh, J. and Dhillon, S.S · Agricultural Geography, Tata McGraw Hill Pub., New Delhi 1988
13. Tarrant, J.R., Agricultural Geography, Wiley, New York, 1974.

### **M.A/M.SC. (Previous)**

**Paper - IV(c) Geographical Information**

**M.M.-100**

### **System and Computer Mapping**

#### **Course Contents :**

**Unit - I**      Spatial Science: Geography as a spatial science, maps and spatial information, dynamics of spatial information, elements of information technology, geographic objects and their relations-definition and development of GIS, computer environment for GIS.

**Unit - II**      Spatial Data: Elements of spatial data; data sources: Primary and secondary, census and sample-data; quality and error variations-raster and vector data structures data conversion-comparison of raster and vector databases-methods of spatial interpolation-GIS data formats for the computer environment

**Unit - III**      Elements of GIS : Data capture-verification and preprocessing - data storage and maintenance of data bases-Database Management systems:



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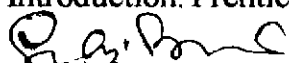
Types and merits and demerits-data manipulation, analysis (integrated analysis of spatial and attribute data , overlay analysis, neighbourhood operations and connectivity functions) and spatial modelling -output format and generation

**Unit-IV** GIS Technology: Coordinate system-basic principles of cartography and computer assisted cartography for GIS-remote sensing data as a data source for GIS and integration of GIS and Remote Sensing-GPS and GIS: technology, data generation and limitations-visualization in GIS-Digital Elevation Models (DEM and TINS).

**Unit -V** GIS application. GIS as a Decision Support System-expert system for GIS-basic flow chart for GIS application-GIS standards, legal system and national GIS policy application of GIS in Land information System, Urban Management, Environmental Management and Emergency Response System.

**Suggested Readings :**

- 16 Aronoff S., Geographic Information Systems: A Management Perspective, DDL Publication, Ottawa, 1989.
17. Burrough P.A.: Principles of Geographic Information Systems for Land Resources Assessment, Oxford University Press, New York, 1986.
18. Fraser Taylor, D.R., Geographic Information Systems: Pergamon Press, Oxford, 1991.
19. Maguire, D.J., M.F., Goodchild and D.W. Rhind (eds.). Geographic Information Systems: Principles and Application. Taylor & Francis, Washington, 1991.
20. Mark S Monmonier, Computer-assisted Cartography, Prentice-Hall, Englewood Cliff, New Jersey, 1982.
21. Peuquet, D.J. and D.F. Marble, Introductory Reading in Geographic Information Systems. Taylor & Francis/Washington, 1990.
- 22 Star J and J. Estes. Geographic Information Systems: An Introduction. Prentice-Hall, Englewood Cliff, New Jersey, 1994.

  
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**M.A./M.Sc. (Previous)**  
**Paper - IV (d)**  
**Geography of Rural Settlements**

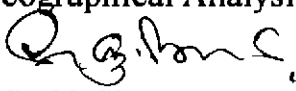
**M.M.-100**

**Course Contents :**

- Unit-I** Nature, scope, significance and development of settlement geography; Approaches to rural settlement geography, human settlement as a system. Rural -urban continuum. Histogenesis of rural settlements: Spatio-temporal dimensions and sequent occupance Definition and characteristics of rural settlements in the fringe areas and sparsely settled areas. Distribution of Rural settlements: Size and spacing of rural settlements.
- Unit-II** Types, forms and Patterns of rural settlements: cause and effect; Functional classification of rural settlements: Central places and rural service centres; their nature, hierarchy and functions; rural-urban fringe-structure, characteristics and functions.
- Unit-III** Social issues in rural settlements: poverty, housing and shelter, deprivation and inequality; empowerment of women, health care; Rural-urban interaction.
- Unit-IV** Environmental issues in rural settlements, access to environmental infrastructure: water supply sanitation, drainage, occupational health hazards.
- Unit-V** Cultural landscape elements in rural settlements in different geographical environments with special reference to India: House types and field patterns. Origin, evolution, size, socio-spatial structure of Indian Villages. Rural development planning in India, Integrated Rural Development.

**Suggested Readings :**

14. Alam, S.M. et. al. Settlement System of India. Oxford and IBH Publication Co, New Delhi, 1982.
15. Brock, J.O.M. and Welb, J.w. Geography of Mankind. McGraw Hill, London, 1978
16. Chisholm, M.: Rural Settlements and Land Use, John Wiley, New York, 1967.
17. Clout, H.D.: Rural Geography, Permagon, Oxford., 1977.
18. Daniel, P. and Hopkinson, M. The Geography of Settlement.. Oliver & Byod, Edinburgh, 1986.
19. Grover, N.: Rural Settlements- A Cultural Geographical Analysis Inter-India Publication, Delhi, 1985.

  
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20. Hudson, F.S.: A Geography of Settlements, MacDonald & Evans., New York, 1976.
21. Mitra, A.: Report on House Types and Village Settlement Patterns in India. Publication Development, Govt. of India, Delhi, 1960.
22. Ramchandran, H.. Village Clusters and Rural Development, Concept Publication, New Delhi, 1985.
23. Rao, E.N.: Strategy for Integrated Rural Development, B.R. Publication Cor., New Delhi, 1986.
24. Rappoport, A.: House Form and Culture, Prentice Hall, New Jersey, 1969.
25. Sen, L.R (ed): Readings in Micro-level Planning and Rural Growth Centres. National Institute of Community Development, Hyderabad, 1972.
26. Srinivas, M.N.. Village India, Asia Publication House, Bombay, 1968.
27. Wanmali, S.: Service Centres in Rural India, B.R. Publication Cor., New Delhi. 1983.

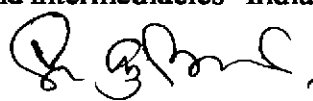
### **M.A./M.Sc. (Previous)**

#### **Paper - IV (c) Geography of Tourism**

**M.M.-100**

#### **Course Contents :**

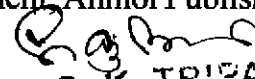
- Unit-I** Basics of tourism: , Definition of tourism, Factors influencing tourism: historical, natural, socio-cultural and economic; motivating factors for pilgrimages: leisure, recreation, elements of tourism, tourism as an industry
- Unit - II** Geography of tourism:-its spatial affinity; areal and locational dimensions comprising physical, cultural, historical and economic; Tourism types: cultural, eco-ethno coastal and adventure tourism, national and international tourism; globalization and tourism,
- Unit - III** Indian Tourism: regional dimensions of tourist attraction; evolution of tourism, promotion of tourism.
- Unit - IV** Infrastructure and support system-accommodation and supplementary accommodation; other facilities and amenities; Tourism circuits-short and longer detraction-Agencies and intermediacies - Indian hotel industry

  
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**Unit - V** Impacts of tourism. physical, economic and social and perceptual positive and negative impacts, Environmental laws and tourism-Current trends, spatial patterns and recent changes, Role of foreign capital & impact of globalization on tourism. Project report on relevant topics such as impact of tourism on Garhwal Himalaya, Dal Lake, Goa and North East impact on a historic city.

**Suggested Readings :**

1. Bhatia A.K.: Tourism Development: Principles and Practices. Sterling Publishers, New Delhi, 1996
2. Bhatiya, A.K.: International Tourism-Fundamentals and Practices, Sterling, New Delhi, (1991).
3. Chandra, R.H : Hill Tourism: Planning and Development, Kanishka Publishers, New Delhi, 1998.
4. Hunter, C and Green, H: Tourism and the Environment: A Sustainable Relationship, Routledge, London, 1995.
5. Inakeep, E.: Tourism Planning: An integrated and Sustainable Development Approach, Van Nostrand and Reinhold, New York, 1991.
6. Kaul R.K., Dynamics of Tourism & Recreation. Inter-India, New Delhi, (1985).
7. Kaur, J.: Himalayan Pilgrimages & New Tourism, Himalayan Book, New Delhi, 1985
8. Lea, J. Tourism and Development in the Third World, Routledge, London, 1988.
9. Milton, D.: Geography of World Tourism, Prentice. Hall, New York, 1993.
10. Pearce, D.G: Tourism To-day: A Geographical Analysis, Harlow, Longman, 1987.
11. Robinson, H.A.: Geography of Tourism, Macdonald and Evans, London, 1996.
12. Sharma J.K. (ed). Tourism Planning and Development- A New Perspective, Kanishka Publishers, New Delhi, 2000.
13. Shaw, G and Williams, A.M.: Critical Issues in Tourism- A Geographical Perspective, Oxford: Blackwell, 1994.
14. Sinha, P.C. (ed): Tourism Impact Assessment, Anmol Publishers, New Delhi, 1998.

  
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15. Theobald, W. (ed.): Global Tourism: The Next Decade, Oxford, Butterworth, Heinemann, Oxford, 1994.
16. Voase R.: Tourism: The Human Perspective, Hodder & Stoughton, London, 1995.
- 23 Williams, A.M. and Shaw, G.(eds.): Tourism and Economic Development- Western European Experiences, Belhaven, London.

**M.A./M.SC. (Previous)**

**PAPER-V : PRACTICALS**


**M.M. 100**

- (A) Lab Work Exercises : 50 Marks**
- (i) **Map projection** : Sinusoidal, Mollweide's, Mercators and Gall's Stereographic projections. International Projection, Interrupted Mollweide and Sinusoidal projections, Gnmonic Equatorial and Oblique zenithal projection
  - (ii) **Geological Maps, slope analysis and Profiles** - Use of these technology in the study of geomorphic landscapes. Remote sensing as a tool for data generation and mapping computer 0 cartography. Elementary knowledge of G.I.S.
  - (iii) **Maps and Diagram** - Drawing of maps using dot, Shade, symbol methods, isopleths and chropleths representing population agricultural industrial and transport data.
  - (iv)(a) **Statistical Methods u Measures of Dispersion** - Quartile range, Variance and co-efficient of Variation, Correlation and Co-efficient of correlation, Regression line, Co-efficient of Skewness, student "T" Test, Chai square test.
  - (b) **Graphical Representation of Statistical Data** - Lorenz curne, thissen Polygon, Scatter Diagram, Location quotient curve.

**Note :** Question will be set on all the four topics mentioned' above and the candidates will be asked to attempt three questions in three hours.

- (B) Excursion and Field Report : 30 Marks**
- A geographical excursion of about 2 weeks or 10 days, duration will be undertaken (in batches of 10/20 student and 1/2 teachers one attendant per party) with a view to study the inter-regional variation of the country. Each student will prepare a report supported by maps, diagrams data and photographs.

**Note :**

  
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- (1) In a very special circumstances a student may be permitted to submit a field study report of a revenue village or a ward of a city in lieu of geographical excursion prior permission from the Head of the department and the Principal will be sought for this alternative arrangement.
- (2) The T.A., D.A. and other expenses on teachers and attendant will be met out by the college.

(C) Record Book and Viva

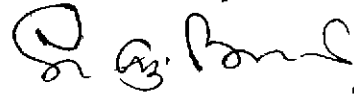
20 Marks

**Books Recommended**

- (1) Singh and Dutta : Elements of Practice Geography.  
(2) Monkhouse, F.J : Maps and Diagrams.  
(3) Robinson, A.H. : Element of Cartography.  
(4) Sharma, J.P : Prayogatmak Bhoogol Rooprekha (Hindi)  
(5) Lal, Hira : Prayogatmak Bhoogol. (Hindi)  
(6) Chauhan, P.R., : Prayogatmak Bhoogol (Hindi)

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**M.A./M.Sc. (Final)**  
**Geography**

The Schedule of Papers will be as follows:

- |     |  |           |
|-----|--|-----------|
| (1) | Paper-I Regional Geography of India        | 100 marks |
| (2) | Paper-II Regional Planning and Development | 100 marks |
| (3) | Paper-III Population Geography             | 100 marks |
| (4) | Paper-IV Any one of the following papers   | 100 marks |
|     | (a) Political Geography                    |           |
|     | (b) Cultrual Geography                     |           |
|     | (c) Remote Sensing Techniques              |           |
|     | (d) Urban Geography                        |           |
|     | (e) Advanced Cartography                   |           |
| (5) | Paper-V Practicals                         | 100 marks |
|     | Survey and Field training report           |           |



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**M.A./M.Sc. (Final)**

**PAPER - I:**

**M.N. 100**

**REGIONAL GEOGRAPHY OF INDIA**

**Course Contents :**

- Unit - I** Basis of regionalization : geo-political, climatic, agro-climatic, physiographic, historical, demographic, socio-economic dimensions' of regionalization, case studies.
- Unit - II** Macro-Regions : Genesis and changing profile; Indian federalism : a synoptic view; natural and human resources and resource utilization , Population development, environment interface. Policies and Programmes.
- Unit - III** Meso-Regions : bases of regionalization, physical and human resources, economic and interlinkages, population development environment interface, Policies Programmes.
- Unit - IV** Micro-Regions : bases of regionalization; physical, human and economic resources; formal and functional linkages; Population-development, environment nexus; policies and programmes.
- Unit - V** Case-studies of Meso/Micro level regions in detail  
Indo-gangetic plain, Jharkhand, Delhi Metropolitan region, Bundelkhand, Regions and regional development, Environmental issues in regional development and planning.

**Suggested Readings :**

1. Centre for Science & Environment (1988) State of India's Environment, New Delhi.
2. Deshpande C.D. India : A Regional Interpretation, ICSSR & Northern Book Centre, 1992.
3. Dreze, Jean & Amartya Sen (ed.), India Economic Development and Social Opporrtunty : Oxford University Press, New Delhi, 1996.



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- 4 Kundu A., Raza Moonis : Indian Economy . the Regional Dimension. Spectrum Publishers, New Delhi, 1982.
5. Robinson, Francis : The Cambridge Encyclopaedia of India, Pakistan, Bangladesh, Sri Lanka, Nepal, Bhutan & Maldives. Cambridge University Press, London, 1989.
- 6 Singh, R.L. (ed ) . India-A Regional Geography, National Geographical Society, India. Varanasi, 1971.
7. Spate, OHK & ATA Learmonth - India Pakistan, Methuen, London, 1967
8. Tirtha, R. & Gopal Krishna, Emerging India, Reprinted by Rawat Publications, Jaipur, 1996.

**M.A./M.Sc. (Final)**

**PAPER-II:**

**M.M. 100**

**REGIONAL PLANNING AND DEVELOPMENT**

**Course Contents :**

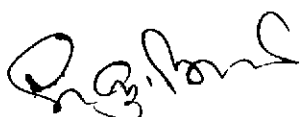
**Unit-I** Regional concept in geography, conceptual and theoretical framework, merits, and limitations for application to regional planning and development; changing concept of the region from an inter-disciplinary view-point, concept of space, area and locational attributes.

**Types of regions :** Formal and functional; uniform and nodal, single purpose and composite region, in the context of planning; regional hierarchy; special purpose regions.

**Unit-II** Physical regions, resource regions, regional divisions according to variations in levels of socio-economic development ; special purpose regions-river valley regions, metropolitan regions, problem regions-hilly regions, tribal regions, regions of drought and floods.

**Unit - III** Approaches to delineation of different types of regions and their utility in planning.

**Planning process -** sectoral, temporal and spatial dimensions ; short-term and long term perspectives of planning. Planning for a region/Es development and multi-regional planning in a national context.

  
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Indicators of development and their data sources, measuring levels of regional development and disparities-case study of India.

**Unit - IV** Regional development strategies-concentration vs. dispersal, case studies for plans of developed and developing countries, Regional plans of India.

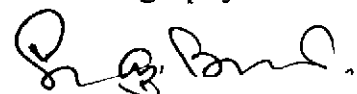
**Unit - V** Concept of Multi-level planning; decentralised planning; peoples participation in the planning process; Panchayati Raj system; role and relationship of Panchayati Raj Institutions (Village Panchayat, Panchayat Samithi and Zila Parishad) and administrative structure (village, Block and District, Regional development in India-problems and prospects.

**Suggested Readings :**

1. Abler, R., et al.: Spatial Organisation. The Geographer's View of the World, Prentice Hall, Englewood Cliffs, N.J 1971.
2. Shut, L.S.: Regional Planning in India, Statistical Publishing Society, Calcutta, 1973.
3. Bhat, L.S., et al. : Micro-Level Planning: A Case Study of Karma Area, Haryana, KB Publications, New Delhi, 1976.
4. Chorley, R.J. and Hagget, P.: Models in Geography, Methuen, London, 1967.
5. Christaller, W.: Central Places in Southern Germany, Translated by C.W. Baskin, Prentice Hall, Englewood Cliffs, New Jersey, 1966.
6. Friedmann, J. and Alonso, W.: Regional Development Policy - A Case Study of Venezuela, M.I.T. Press Cambridge, Mass, 1966.
7. Friedmann, J and Alonso, W.: Regional Development and Planning - A Reader, M.I.T. Press, Cambridge, Mass, 1967
8. Glikson, Arthur . Regional Planning and Development, Netherlands Universities Foundation for International Co-operation, London, 1955.
9. Gosal, G.S. and Krishan, G.: Regional Disparities in Levels of Socio-Economic Development in Punjab, Vishal , . Publications, Kurukshetra, 1984.
10. Government of India, Planning Commission : Third Five Year Plan, Chapter on Regional Imbalances in Development, New Delhi, 1961.
11. Indian Council of Social Science Research: Survey of Research in Geography, Popular Prakashan, Bombay, 1972

  
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12. Johnson, E.A.J.: The Organisation of Space in Developing Countries, Harvard University Press, Cambridge, 1970.
13. Kuklinski, A.R. (ed.) : Growth Poles and Growth Centres in Regional Planning, Mouton, The Hague, 1972.
14. Kundu, A. and Raza, Moonis: Indian Economy- The Regional Dimension, Spectrum Publishers, New Delhi, 1982.
15. Losch, A.: The Economics of Location, University Press, Yale, New Haven, 1954.
16. Misra, R.P.: Regional Planning Concepts, Techniques and Policies, University of Mysore, Mysore, 1969.
17. Misra, R.P. and Others (editors) : Regional Development Planning in India-a Strategy, Institute of Development Studies, Mysore, 1974.
18. Mitra, A.: Levels of Regional Development, Census of India, Von, Part IA (i) and (ii) New Delhi 1965.
19. Myrdal, G: Economic Theory and Under- Development Regions, Gerald Duckworth, London, 1957.
20. Nangia Sudesh, Delhi Metropolitan Region Rajesh Publication, Delhi, 1976.
21. Richardson, H W.. Regional Economics, Weidenfeld and Nicolson, London, 1969.
22. Sundaram, K.V. (ed.) : Geography and Planning, Essays in Honour of V.L.S. Prakasa Rao, Concept Publishing Co., New Delhi, 1985.
23. Tarlok Singh India's Development Experience, Mc Millan, New Delhi, India, 1974.
24. Raza, Moonis (editer) Regional Development, Heritage Publishers, Delhi, 1988
25. Mishra, R.P. et al. Multi-Level Planning, Heritage Publishers, Delhi, 1980.
26. Kharkwal, S.C. : Physico-cultural environment & Development, (in U.P Himalaya) Nutan Pub., Kotdwara (Garhwal), 1998.
27. Kharkwal & Sharma . Land & Habital u A cultural Geography Nutan Pub. Kotdwara (Garhwal)



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**M.A./M.Sc. (Final)**

**PAPERS-III**

**M.M. 100**

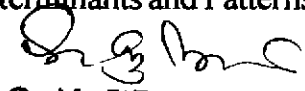
**POPULATION GEOGRAPHY**

**Course Contents :**

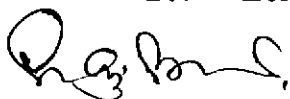
- Unit - I**      **Population Geography :** Meaning, scope and Objectives; development of Population Geography, Population Geography and Demography- sources of population data, their level of reliability, and problems of mapping of population data.
- Unit - II**      **Population distribution :** density and growth-theoretical issues; Classical and modern theories in population distribution and growth; World patterns and their determinants; India-: population distribution density and growth profile, Concepts of under population and over population.
- Unit - III**     **Population composition :** age and Sex; literacy and education, religion, caste and tribes, rural and urban; occupational structure; gender issues; Population composition of India.
- Unit - IV**     **Population dynamics :** Measurements of fertility and mortality. Migration: national and international patterns; India's population dynamics.
- Unit - V**      Population and development · population - resource regions and levels of population and socio-economic development; population policies in developed and less developed countries; Human Development Index and its components; India's population policies, population and environment; implications for the future.

**Suggested Readings :**

1. Bilasborrow, Richard E and Daniel Hogan, Population and Deforestation in the Humid Tropics, International Union for the Scientific study of Population, Belgium, 1999.
2. Bogue, D.J., Principles in Demography, John Wiley, New York 1969.
3. Bose, Ashish, et al. : Population in India's Development (1947-2000). Vikas Publishing House, New Delhi, 1974.
4. Census of India, India : A State Profile, 1991.
5. Chandna, R.C. : Geography of Population; Concept, Determinants and Patterns Kalyani Publishers, New Delhi, 2000

  
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6. Clarke, John. I., Population Geography, Pergamon Press, Oxford 1973.
7. Crook, Nigel, Principles of Population and Development. Pergamon Press, New York, 1997.
8. Daugherty, Helen Gin, Kenneth C.W. Kamineyir, An introduction to Population (Second Edition), The Guilford Press, New York, London, 1998.
9. Gamier, B.J., Geography of Population, Longman, London, 1970.
10. Kochhar, Rajesh, The Vedic People : Their History and Geography, Orient Longman Ltd., New Delhi, 2000.
11. Mamoria, C.B., India's Population Problem, Kitab Mahal, New Delhi, 1981.
12. Mitra, Asok, India's Population : Aspects of Quality and Control. Vol. I & II, Abhinav Publications, New Delhi, 1978.
13. Premi, M.K., India's Population: Heading Towards a Billion, B.R. Publishing Corporation, 1991.
14. Srinivasan, K. and M. Vlassoff. Population Development Nexus in India: Challenges for the New Millennium Tab McGraw a Hill, New Delhi, 2001.
15. Srinivasan, K. Basic Demographic Techniques and Applications Sage Publications, New Delhi, 1998.
16. Sundaram K.V. and Sudesh Nangia, (ed.) Population Geography, Heritage, Publications, Delhi, 1986.
17. UNDP: Human Development Report. Oxford University Press, Oxford, 2000.
18. United Nations, Methods for Projections of Urban and Rural Populations, No. VIII, New York, 1974.
19. Woods, R. Population Analysis in Geography. Longman, London 1979.
20. Zelinsky, Wilbur, A Prologue to Population Geography, Prentice Hall, 1966.



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**M.A./M.Sc. (Final)**

**PAPER-IV (a)**

**M.M. 100**

**POLITICAL GEOGRAPHY**

**Course Contents :**

**Unit - I** Nature, scope, subject matter and recent development in political geography; approaches to study;. Major pett schools thought,

- Unit - II** Geographie-Elements and the State. Physical Elements; Human elements; Economic elements; Political geography and environment interfam.
- Unit - III** Themes in Political Geography: State, Nation, Nation-State and Nation-building, Frontiers and boundaries, Colonialism, decolonization Neocolonialism, Federalism and other forms of governance. The changing patterns of world Powers Perspectives on core-periphery concept, Conflicts and cooperation.
- Unit - IV** Geopolitical significance of Indian Ocean . Political geography of SAARC Region, South-East Asia, West Asia, East Asia
- Unit - V** Political geography of contemporary India India with special reference to : The changing political map of India, Unity u diversity : centripetal and centrifugal forces ; stability & instability ; Interstate issue (like water disputes & riparian claims) and conflict in resolutions insurgency in border states; Emergency of New States Federal India · Unity in Diversity.

**Suggested Readings :**

1. Alexander, L.M., World Political Patterns, Ran McNally. Chicago, 1963.
2. De Blij, H.J. and Glassner, Martin, Systematic Political Geography, John Wiley, New Delhi, 1996.
3. Dikshit, RD., Political Geography : A Contemporary Perspective. Tata McGraw Hill, New Delhi, 1996.
4. Dikshit, RD., Political geography : A Century of Progress. Sage New Delhi, 1999.
5. Sukhwai, B.L., Modern Political Geography of India, Sterling Publishers, New Delhi, 1968.
- 6 Taylor, Peter , Political Geography, Longman, London, 1985
7. Fisher, Charles A.: Essays in Political Geography, Methuen, London, 1968.
- 8 Pounds, N.J.G : Political Geography, McGraw Hill, New York, 1972
9. John R. Short : An introduction to Political Geography Routledge, London, 1982.



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10. Moddie, A.E.: Geography Behind Politics, Hutchinson, London, Latest edition.
11. Prescott, J.R.V.: The Geography of Frontiers and Boundaries, Aldine, Chicago.
12. Deshpande, C.D.: India-A Regional Interpretation, Northern Book Centre, New Delhi, 1992.
13. Panikkar, K.M.: Geographical Factors in Indian History : Vol., 2, Asia Publishing House, Bombay, 1959.

**M.A./M.Sc. (Final)**

**PAPER-IV (b)**

**M.M. 100**


### CULTURAL GEOGRAPHY

**Course Contents :**

- Unit - I**      **Introduction :** Nature and scope of cultural geography; Definition, cultural element and components of culture; convergence and divergence processes; cultural changes: perception behaviouralism and cultural relativism.
- Unit - II**      **Cultural Diversity :** Bases of cultural diversity-race religion and language. Cultural diversity in world, cultural diversity and regionalization in India.
- Unit- III**      **Geography of ethnic groups and tribal groups.** Religion and its diffusion; diffusion of ethnic traits in world as well as in India; ethnic landscape and economy of the area; Diffusion in folk geography; cultural landscape and cultural ecology in folk geography; Religions . origin, diffusion and spatial distribution; religion & economic development.
- Unit - IV**      **Patterns of livelihood:** various economic activities & cultural adaptations; agriculture, industrialization and modernization; technological changes and their geographic implications.
- Unit - V**      **Human settlements :** Relation to ideology, social structure and technology, social structure and technology, pattern of rural & urban society, social processes in the city, the city in the developing countries.

**Suggested Readings :**

1. Brock, J.C. and Webb, J.W.: A Geography of Mankind, McGraw Hill, New York. 1978
2. Crang, Mike Cultural Geography, Routledge Publications, London, 1998.

  
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3. Harrnandorf, Tribes of India : The Struggle for Survival. Oxford University Press, Delhi, 1989.
4. Hazra, (ed.), Dimensions in Human Geography, Rawat Publication, Jaipur, 1997
5. Hutchinson, and Smith, D: Ethnicity; Oxford University Press, Oxford, 1996
6. Jordon, & Lester G. The Human Mosaic, Harpar & Row, New York; 1979.
7. Massey, D & Jess P A, Place in the World: Places, Cultures and Globalization, Oxford University, New York, 1995.
8. Massey, et al. (ed.), Human Geography Today, Polity Press, Cambridge, 1999.
9. Multherjee, A.B. and Aijazuddin, A : India. Culture, Society and Economy, Inter-India Publication, New Delhi, 1985.
10. Singh, A.K. : Approaches of tribal development Swaroop & Sona, New Delhi, 1994
11. Steve, P. & Michael K (ed): Places and the Politics of Identity, Routledge, London, 1993.
12. Schwartzberg, J.E : Historical Atlas of South Asia University of Chicago, 1978.
13. Singh, A.K., Approaches to Tribal Development, Swarup and Sone, New Delhi, 1994.
14. Sopher, D.E. : Exploration of India : Geographical Perspectives on Society & Culture, Longman, London, 1980

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**Paper- IV (c)**

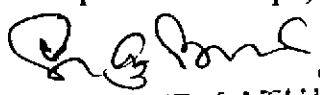
**M.M. 10**

**Remote Sensing Techniques**

**Course Contents :**

**Unit - I** Historical development or remote sensing as a technology-Relevance of remote sensing in Geography-Concepts and basics : Energy source energy and radiation principles, energy interactions in the atmosphere and earth surface features, remote sensing systems : platforms, sensors and radiatio, records.

**Unit - II** Air Photos and Photogrammetry : Elements of photographic system : types, scales and group coverage, resolution, radiometric characteristics films, filters, aerial cameras, film exposures, geometric fundamentals of photogrammetry elements of vertical photographs, relief displacement image parallax, stereoscopic, orthophotos airphoto interpretation : shape, size, pattern, tone, texture shadows, site

  
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- Unit - III** Satellite Remote Sensing : platforms u LANDSAT SPOT, NOAA AVHRR, RADARSAT, IRS, INSAT principles and geometry of scanners and CCD arrays orbital characteristics and data products-MSS, TM, LISS I & II, SPOTPLA & MLA, SLAR.
- Unit - IV** Image Processing: types of imagery, techniques of visual interpretation, ground verification, transfer of interpreted thematic information to base maps-digital processing : rectification and restoration, image enhancement,-contrast manipulation, classification : supervised and unsupervised, post-classification analysis and accuracy assessment, microwave sensing : interpretation of SLAR imageries, elements of passive microwave sensing.
- Unit - V** Applications : Air photo and image interpretations and mapping land use and land cover, land evaluation, urban landuse, landform and its processes, weather studies and studies of water resources integration of Remote Sensing and GIS-remote sensing and hazard management, remote sensing and environmental management.

**Suggested Readings :**

1. American Society of Photogrammetry. Manual of Remote Sensing. ASP, Falls Church, VA, 1983.
2. Barrett E.C. and L.F. Curtis : Fundamentals of Remote Sensing and Air Photo Interpretation, Macmillan, New York, 1992
3. Compbell J. : Introduction to Remote Sensing, Guilford, New York, 1989
4. Curran, Paul J : Principles of Remote Sensing, Longman, London, 1985.
5. Hord, R.M. : Digital Image Processing of Remotely Sensed Data, Academic, New York, 1989.
6. Luder, D.: Aerial Photography Interpretation : Principles and Application, McGraw Hill, New York, 1959.
7. Pratt, W.K., Digital Image Processing. Wiley, New York, 1978.
8. Rao, D.P. (eds.) : Remote Sensing for Earth Resources, Association of Exploration Geophysicist, Hyderabad, 1998.

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9. Thomas, M Lillesand and Ralph W. Refer, : Remote Sensing and Image Interpretation, John Wiley & Sons, New York, 1994.

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**PAPER-IV (d)**

**M.M. 100**

**URBAN GEOGRAPHY**

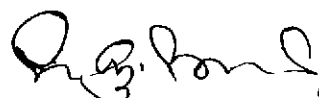
**Course Contents :**

- Unit - I** Nature and scope of urban geography, different approaches and recent trends in urban geography; attributes of urban places during ancient, medieval and modern period; origin and growth of urban settlements: bases and process of urbanization and development, classification of urban settlements on the basis of size and function; urban systems: Urban growth and theories. Central Place Theory of Christaller and Losch; Theories of Peroux and Boudeville; contributions of Indian scholars to the studies of urban settlements.
- Unit - II** Urban economic base; Basic and non-basic functions, input-output models, concept of dualism; colonial and postcolonial structure, metropolitan city and changing urban function; role of informal sector in urban economy.
- Unit - III** Organization of urban space : urban morphology and land use structure: city core, commercial, industrial and residential areas, cores-country variations ; city-region relations, modern urban landscape; morphology of urban settlements and its comparison with western urban settlements; urban expansion, umland and periphery.
- Unit - IV** Contemporary urban issues : urban poverty, urban renewal, urban sprawl, slums, transportation, housing, urban infrastructure; urban finance; environmental pollution: air, water, noise, solid waste, urban crime, issues of environmental health.
- Unit - V** Issues, perspectives and policies on Population and Human Settlements. Interface between human settlements and environment.

  
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### **Suggested Readings :**

1. Ambrose, Peter, Concepts in Geography, Vol.-I Settlement Pattern, Longman, 1970.
2. Baskin, C., (Translator), Central Places in Southern Germany, Prentice-Hall Inc. Englewood Cliffs, New Jersey, 1966. Originally written by C.W. Christaller in German with title Die Zentralen Orte Suddeutschland in, 1933.
3. Census of India, House types and Settlement Patterns of Villages in India, GOI, New Delhi, 1961
4. Haggett, Peter, Andrew D. Cliff and Allen Frey (editor), Locational Models, Arnold Heinemann, 1979.
5. King, Leslie, J., Central Place Theory, Saga Publications, New Delhi, 1986.
6. Mayer, M. Harold and Clyde F. Kohn (editors), Readings in Urban Geography, Central Book Depot, Allahabad, 1967.
7. Mitre, Asok, Mukherjee, S and Bose, R. Indian Cities Abhinav Publications, New Delhi, 1980
8. Nangia, Sudesh, Delhi Metropolitan Region, KB. Publications, New Delhi, 1976.
9. Prakasa, Rao, V.L S., Urbanisation in India; Spatial Dimensions, Concept Publishing Co., New Delhi, 1983.
10. Ramachandran, R., Urbanisation and Urban Systems in India, Oxford University Press, New Delhi, 1992
11. Singh R.L. and Kashi Nath Singh (editors), Readings in Rural Settlement Geography, National Geographical Society of India, Varanasi, 1975.
12. Srinivasan, K. and M. Vlassoff, (editors), Population-Development Nexus in India: Challenges for the New Millennium, Tata McGraw-Hill Publishing Co Ltd., New Delhi, 2001.
13. Ucko, M.J. Ruth Tringham and G.W. Dimbleby (editors), Man, Settlement and Urbanism, Duckworth, 1972.
14. United Nations Centre for Human Settlements (HABITAT), An Urbanising World, Global Report on Human Settlements, Oxford University Press for HABITAT, 1996.



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**PAPER-IV (e)**

**M.M. 100**

**ADVANCED CARTOGRAPHY**

**Course Contents :**

- Unit - I** Introduction - Trends in the development cartographic techniques for descriptive, analytical and prescriptive aspects in the use of maps.
- Unit - II** Thematic Cartography-Physical:
1. Assessment of land quality by using different attributes in the evolution of landforms and measuring their association and spatial differentiation.
  2. Land based resources and cover and land use.
- Unit - III** Thematic cartography - Socio - economic: data sources and techniques of analysis of socio-economic data through the preparation of single purpose composite maps.
- Unit - IV** Creation of spatial database and application using GIS, Remote sensing and Computer cartography
- Unit - V** Regional Synthesis and characterization of the observed spatial patterns for predictive purposes. Preparation of spatial models, cartography for environmental education and planning.


**Suggested Readings:**

- 1 American Society of Photogrammetry, Manual of Remote Sensing. ASP, Falls Church, V.A., 1983
2. Aronoff S., Geographic Information Systems : A Management Perspective, DDL Publication, Ottawa, 1989
3. Barrett, B.C. and L F. Curtis, Fundamentals of Remote Sensing and Air Photo Interpretation, Macmillan, New York, 1992.
4. Burrough, P.A. Principles of Geographic Information Systems for Land Resource Assessment, Oxford University Press, New York, 1986.
5. Campbell J., Introduction to Remote Sensing, Guilford, New York, 1989.



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6. Curran, Paul J., Principles of Remote Sensing, Longman, London, 1985.
7. David Unwin, Introductory. Spatial Analysis, Methuen, London, 1981.
8. Fraser Taylor D.R., Geographic Information Systems. Pergaman Press, Oxford, 1991.
9. Gregory, S., Statistical Methods and the Geographer, Longman, London, 1978.
10. Hammond, R. and P.S. McCullagh, Quantitative Techniques in Geography An Introduction, Clarendan Press, Oxford, 1974.
11. Hord R.M., Digital Image Processing of Remotely Sensed Data, Academic, New York 1989.
12. John P.Cole and Cuchlaine A.M. King, Quantitative Geography, John Wiley, London, 1968.
13. Johnston, R.J., Multivariate Statistical Analysis in Geography, Longman, London, 1973.
14. Luder D, Aerial Photography Interpretation : Principles and Application, McGraw Hill, New York, 1959.
15. Maguire D.J.M.F. Goodchild and D.W. Rhind (eds.) Geographic Information Systems . Principles and Application. Taylor & Francis, Washington, 1991.
16. Mark S Monmonier. Computer-assisted Cartography Prentice-Hall, Englewood Cliff, New Jersey, 1982.
17. Peuquet D.J. and D.F. Marble, Introductory Reading in Geographic Information Systems. Taylor & Frances Washington, 1990.
18. Pratt, W.K , Digital Image Processing. Wiley, New York 1978.
19. Rao D.P. (eds.), Remote Sensing for Earth Resources Association of Exploration Geophysicists, Hyderabad, 1998.
20. Star, J. and J. Estes. Geographic Information Systems: An Introduction. Prentice uHall, Englewood Cliff, New Jersey 1994.
21. Yeats, Maurice, An Introduction to Quantitative Analysis in Human Geography, McGraw Hill, New York, 1974.

  
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**M.A./M.Sc. (Final)**

**PAPER-V :**

**M.M.100**

**PRACTICALS (SURVEY AND FIELD TRAINING REPORT)**

(A) Principles of Surveying use of the following instruments : **Marks 30**

- (i) Dumpy level Levelling and profile drawing.
- (ii) Sextant and Abney Level measurement of the angle of elevation and calculation of height.
- (iii) Theodolite measurement of horizontal and vertical angle Determination of height of the objects, Triangulation, accessible and inaccessible method.

**Note :** The candidate will be required to use at least two instruments and carry out simple exercise within 3 hours.

Students are required to under go survey camp for one week. The T.A., D.A. and other expenses of teachers will be met out by the college.

(B) **Field Training Report :** The candidates will be allotted specific areas (a revenue village or a block or the ward of a city) for the field study, with a view to appreciate to geographical personality of the area. He should generate primary data also and prepare the report (dessertation) by using geographical techniques (maps, diagrams tables and charts) and cover the following aspects : -

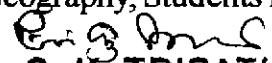
- (a) Physical landscape
- (b) AgriculturallUrbaelanduse
- (c) Population
- (d) Socio-economic development.

**Note :** A Teacher will guide the students in collection of data and maps and help the students preparing the final draft (dessertation). The aspects of the study may be changed or reoriented according to the local conditions. **Marks 50**


(C) Record Book and Viva **Marks 20**

**Books Recommended :**

1. Kanetkar, T.P , Surveying andtevellling, Vol. 1 and II.
2. Singh and Dutt , Elements of Practical Geography, Students Friend, Allahabad, 1968.

  
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- 3 Singh and Kanaujia- Map Work and Practical Geography, Central Book Depo, Allahabad, 1972
- 4 Monkhoue, F.J., Maps and Diagrams, Methuen, 1971.
5. Sharma, J.P., Prayogatmak Bhoogol.
- 6 Lai, Hire, Prayogatmak Bhoogol.
- 7 Berry and Marble, Spatial Analysis.
- 8 Cole and King, Quantitative Geography.
9. Aslam, M., Statistical Methods in Geographical Studies.
10. Clendinning, J , Principles and use of surveying instruments, 2nd edition, Blockie A., 1958.

  
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