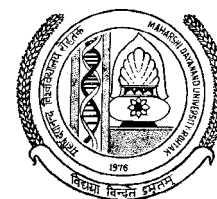


# Maharshi Dayanand University Rohtak



## Ordinance, Syllabus and Courses of Reading for M.A. (Final) Geography Examination

Session - 2008-2009

***Available from :***

*Dy. Registrar (Publication)*

*Maharshi Dayanand University*

*Rohtak -124001 (Haryana)*

*Price :*

*At the Counter : Rs. 50/-*

*By Regd. Parcel : Rs. 75/-*

*By Ordinary Post : Rs. 60/-*

(i)

**M.A./M.Sc. (Final) Geography, 2008-09 onwards**  
**Scheme of Examination and Course Content**

M.A. (Previous) examination in Geography shall consist of four theory papers and one practical paper. Each theory paper shall be of 100 marks including an internal assessment of 20% marks. The practical paper shall be of 100 marks. There will be no internal assessment in practical paper. All the theory papers shall be of three hours duration and the practical paper shall be of four hours duration. The fieldwork in practical paper-V shall be conducted by the Departments/College under the supervision of the teachers with provision that there will be one teacher to accompany and supervise a group of ten students. Field work is compulsory for all the students and to write a report on it. However, in some special circumstances if any student is unable to go on field trip he/she will be allowed to submit a field report based on primary data collected on the basis of local area survey. Decision about the supervision of such students will rest with Departmental Committee. The teachers engaged in this process shall be paid TA/DA as per University rules. The practical examination shall be conducted by a board of two external examiners.

The procedure of award of Internal Assessment will be as under :-

- a) Two class tests of 5 marks each. The class tests will be held in the 1st half of December i.e. before winter break and 1st half of March i.e. 5+5=10 marks.
- B) Assignment/term paper and presentation : 5 marks
- C) Attendance : 5 marks
- 65% to 75% : 1 marks
- 76% to 85% : 2 marks
- 86% to 90% : 3 marks
- 91% to 95% : 4 marks
- above 95% : 5 marks

(ii)

Paper Code	Nomenclature	Theory	Internal Assessment	Total	Time
Paper -I	Geomorphology	80	20	100	3 hrs.
Paper-II	Climatology and Biogeography	80	20	100	3 hrs.
Paper-III	Resource Geography (with special reference to India)	80	20	100	3 hrs.
Paper-IV	(any one of the following)				
	i) Population Geography	80	20	100	3 hrs.
	ii) Urban Geography	80	20	100	3 hrs.
	iii) Geography of Health	80	20	100	3 hrs.
	iv) Geography of Water Resources	80	20	100	3 hrs.
Paper-V	Practicals			100	4 hrs.
	i) Lab. Work Test			45	
	ii) Record and viva-voce on Lab work			15	
	Unit-I			15	
	Unit-II				
	Unit-III Field Report and Viva-Voce		25		

**Paper-I Modern Geographical Thought**

**Theory : 80**  
**Internal Assessment : 20**  
**Max. Marks : 100**  
**Time : 3 Hrs.**

**Unit -I**

The field of geography- its place in the classification of sciences; the tasks of geography as a social science; selected concepts in the philosophy of geography-distributions; relationships, areal differentiation and spatial organization; geographical versus sociological imaginations-towards a philosophy of social space.

**Unit -II**

Dualisms in geography-systematic and regional geography, physical and human geography; Systematic geography and its relation with systematic sciences and with regional geography; the myth and reality about dualisms; Regional geography-concept of region, regionalization and the regional method.

**Unit -III**

Dominant paradigms upto 1950: Exploration, environmental determinism, possibilism and regionalism; Quantification and development of theory in human geography-nature and consequences of quantitative revolution in geography; Scientific explanation-routes to scientific explanations (Inductive and deductive); Major modes of explanation (based on David Harvey).

**Unit -IV**

The historical explanation in geography; approaches to the study of historical geography, impact of evolutionary biology on geographical thought; geography and environmentalism; the changing views on man-environment relationship.

**Unit -V**

Anti positivism and the development of 'human centred' theories; behaviourism, humanistic; and radical responses; Modern Vs. postmodern geographics.

**Note :-**

The question paper shall contain ten questions in all, including two questions from each unit. Candidate shall attempt five questions in all selecting at least one question from each unit. All questions carry equal marks.

**Select Readings :**

1. Abler, Ronald, Adams, John S. Gould, Peter, (1971), *Spatial Organization : The Geographer's View of The World*, Prentice Hall, N.J.
2. Agnew, John **et.al.** (ed.) (1996), *Human Geography*, Blackwell Publishers, London.
3. Dikshit, R.D. (ed.) (1994), *The Art & Science of Geography Integrated Readings*, Prentice Hall of India, New Delhi.
4. Dikshit, R.D. (1999), *Geographical Thought-A Contextual History of Ideas*, Prentice-Hall of India, New Delhi.
5. Hartshorne, R. (1959), *Perspectives on Nature of Geography*, Rand McNally & Co.
6. Harvey, David (1969), *Explanation in Geography*, Edward Arnold, London.
7. Harvey, Milton E. and Brian P. Holly (1981), *Themes in Geographic Thought*, Croom Helm, London.
8. Hubbar Phil. et.al (2002), *Thinking Geographically-Space Theory and Contemporary Human Geography*, Continuum, New York.
9. Husain, M. (2001), *Evolution of Geographic Thought* (forth edition), Rawart Pub., Jaipur.
10. Johnston, R.J. (1988), *The Future of Geography*, Methuen, London.
11. Johnston, R.J. (1997), *Geography and Geographers* (fifth edition), Arnold, London.
12. Minshull, R. (1970), *The Changing Nature of Geography*, Hutchinson University Library London.
13. Peet Richard (1998), *Modern Geographical Thought*, Blackwell, Oxford.

## Paper-VII Research Methods and Quantitative Techniques in Geography

**Theory : 80**  
**Internal Assessment : 20**  
**Max. Marks : 100**  
**Time : 3 Hrs.**

### Unit-I Conceptual Basis

Meaning and purpose of research: approach to research problems : facts, hypotheses and theories; logic and scientific method-the roots to scientific explanation-deductive and inductive forms of references: logical fallacies-definition, measurement and classification; nature of geographic research; explanation in geography- some general problems; the geographic data matrix.

### Unit-II Methods of Analysis

Qualitative and Quantitative methods-an introduction; Significance of Quantitative Analysis in Geography; the nature of geographical data; kinds of measurement nominal, ordinal, interval and ratio; Variable-discrete and continuous: tabulation of data; frequency distribution; cumulative frequency; class boundaries, class intervals and class limits; Partitioned Values (quartiles, deciles and percentiles).

### Unit-III Summarizing Data

Arithmetic mean (individual values and grouped data), the standard deviation (individual values and grouped frequencies); the Gibbs-Martin Index of Diversification; the Ternary Diagram, Weaver's crop combination; Biasness of Scale; Composite Index.

### Unit-IV Measures of Spatial Distribution

Point Distribution : Centographic Techniques- Mean Centre, Median Centre; Near neighbour Analysis.

Line Distribution : Networks : Transport Networks-Accessibility of a node, route density, route sinuosity; traffic flow-traffic density, traffic connectivity.

Areal Distribution: Lorenz curve, Index of concentration location quotient, Index of Dissimilarity or Gonnig Co-efficient, Co-efficient of variability.

## Unit-V Measures of Association Between Patterns

Construction and meaning of Scatter Diagram, Spearman's Rank and Product Moment Correlation Co-efficients, the ordinary least square method of fitting a regression line, explanation and residuals-ANOVA in testing of the estimates; residuals and their mapping; The Chi Square Analysis.

### Note :-

The question paper shall contain ten questions in all, including two questions from each unit. Candidate shall attempt five questions in all selecting at least one question from each unit. All questions carry equal marks.

### Select Readings :

1. Chen, M. and K.F. Nigel (1978), An Introduction to Logic and Scientific Method, New Delhi: Allied.
2. Ebdon, D. (1977), Statistics in Geography, London: Basil Blackwell.
3. Eyles, J. and D.M. Smith (eds) (1988), Qualitative Methods in Human Geography, Cambridge: Polity Press.
4. Gregory, S. (1978), Statistical Methods and Geographers, London: Longman.
5. Hammond, R. and P.S. Mc Gullagh (1989), Quantitative Techniques in Geography, Oxford: Clarendon Press.
6. Harvey, D. (1969), Explanation in Geography. Bangalore Arnold Publication.
7. Kitichin, R. and N.J. Tatc (2000), Conducting Research in Human Geography, Harlow: Prentice Hall.
8. Mahmood, A. (1998), Statistical Methods in Geographical Studies, New Delhi: Rajesh Publications.
9. Smith, D.M. (1977), Patterns in Human Geography, Harmondsworth: Penguin.
10. Spiegel, Murray (1992), Statistics, Singapore: McGraw Hill.

**Paper-VIII (i) AGRICULTURAL GEOGRAPHY**

**Theory : 80**  
**Internal Assessment : 20**  
**Max. Marks : 100**  
**Time : 3 Hrs.**

**Unit -I Introduction to Agricultural Geography**

Definition, nature, scope and significance of agricultural geography, approaches to the study of agriculture in geography-commodity, deterministic, systematic, regional, behavioural and ecosystem.

**Unit -I Factors Influencing Agricultural Patterns and Agricultural Systems.**

Physical Factors-terrain, climate, soils and water resources; Institutional Factors-demographic, land holding, farm family structure, caste, religion peasant way of life and infrastructural services; Technological Factors-Irrigation, traditional and mechanical inputs, bio-chemical Inputs); public policy influencing agriculture; Agricultural systems of the world-Whittlessey's classification (Subsistence-system, Commercial Grain Farming System, Mediterranean Agriculture System and Plantation Farming System).

**Unit -III Regionalisation of Agricultural Patterns and Surveys.**

Concept of agricultural region, Techniques-Normative, Empirical, Single Element, Multi-element and Statistical Cluster and Combination Analysis.

Survey of Land-use. Techniques of land-use survey proximate sensing technique, remote sensing technique; land capability models.

**Unit -IV Models of Agricultural Location**

Nature, significance and classification of models; the working classification of models of agricultural activity; Economic models-(Von Thunen;s model, Input Output, Behavioural, and Diffusion models, Descriptive models (Experimental and conceptual models), mathematical models, land capability models.

**Unit -V Agriculture in India**

Attributes, landuse pattern, regional pattern of productivity; Green

Revolution-performance, ecological implications and future prospects; Specific Problems in Indian agriculture and their management; Rural Development policy and programmes.

**Note :-**

The question paper shall contain ten questions in all, including two questions from each unit. Candidate shall attempt five questions in all selecting at least one question from each unit. All questions carry equal marks.

**Select Readings :**

1. Hussain, M. (1996) Systematic Agricultural Geography, Rawat Pub. Co.
2. Mohammad, N. (ed) 1980 Perspectives in Agricultural Geography (5vol.), Concept Publishing Co. New Delhi.
3. Morgaon, W.B. and Munton, R.J.C. (1971) Agricultural Geography, Methuen co. Ltd. London.
4. Mohammad, N. (1978) Agricultural Land Use in India, A Cast Study, Inter India Publications, Delhi.
5. Andraee, B. (1981) Farming, Development and Space; A World Agricultural Geography, Water de Grytar, new York.
6. Bansal, P.C. (1977) Agricultural Problems of India, Vikas New Delhi.
7. Eliot Hurst, M.E. (1971) A Geography of Economic Behaviour, Duxbury Massachu Setts.
8. Sengupta P. and G. Solasyuk (1961) Economic Regionalisation of India, Problems and Approaches Census of India, New Delhi.
9. Singh, J. (1974) Agricultural Geography, Tata Mc. Graw hill publishing Co. Ltd. New Delhi.
10. Sharma, B.L. (1990) Agricultural Geography, Rawat Publication Jaipur.

**Paper-VIII (ii) POLITICAL GEOGRAPHY**

**Theory : 80**  
**Internal Assessment : 20**  
**Max. Marks : 100**  
**Time : 3 Hrs.**

**Unit -I Nature, History and Development of Political Geography**

Nature and Scope of Political Geography, Approaches to the Study of Political Geography; Morphological, Functional and World-Systems.

Major schools of thought: The Organismic; The Chorological; Spatial-Behavioural; Political Economy, and Place Perspective.

**Unit -II State, Nation and Nation-State**

Concept of State, Nation, Nation-State and Nation-Building; Colonialism, Decolonization and Neo Colonialism; Federalism and other forms of government; Globalisation and the crisis of the territorial state.

**Unit -III Geography of World Politics**

The post 1945 transition of world order and the rise and transformation of the cold war-the post cold war global scene; The Multipolar World and the Strategic Ideas of S.B. Cohen; Globalisation of Capital; Past Developments and Current Trends; Eco-Politics between the Developed and Developing World.

**Unit -IV Political Geography of South Asia**

South Asia as a Geo-political region, India as a regional power in South Asia; Pokharan II and the security scenario in the South Asia.

**Unit -V Political Geography of Contemporary India**

Unity-diversity : Fifty years of Indian federalism; Interstate issues (water disputes and riparian claims) Area Administration: Emergence of New States; Administrative Area Reforms: 73rd amendment and the Panchayati Raj Administration, 74th Amendment and Urban Local Self-Government.

**Note :-**

The question paper shall contain ten questions in all, including two questions from each unit. Candidate shall attempt five questions in all selecting at least one question from each unit. All questions carry equal marks.

**Select Readings :**

1. Agnew, J.A. (1987), Place and Politics, Boston : Allen and Unwin.
2. Blacksell, Mark (2003), Political Geography, London: Routledge.
3. Chapman, G.P. (2003), The Geopolitics of South Asia, Burlington: Ashgate.
4. Dikshit, R.D. (2000), Political Geography: The Spatiality of Politics, New Delhi: Tata McGraw Hill.
5. Jones, Martin, Rhys Jones and Michael Woods (2003), An Introduction to Political Geography, London: Routledge.
6. Nash, Kate (2000), Readings in Contemporary Political Sociology, Oxford: Blackwell.
7. Painter, J. (1995), Politics, Geography and Political Geography, London: Arnold.
8. Robinson, Francis (1989), The Cambridge Encyclopedia of India, Pakistan, Bangladesh, Sri Lanka, Nepal, Bhutan and the Maldives, Cambridge: Cambridge University Press.
9. Taylor, P.J. Collin Flint (2001), Political Geography, New Delhi: Pearson.

**Paper-VIII (iii) ENVIRONMENTAL GEOGRAPHY****Theory : 80****Internal Assessment : 20****Max. Marks : 100****Time : 3 Hrs.****Unit -I**

Environmental Geography-meaning, nature, scope and fundamental concepts; approaches and methods in Environmental Geography; relationship with other branches of knowledge; man and environment relationship-symbiosis between man and environment. Impact of man on environment, need for environmental studies in geography. Concept, types and elements or factors of environment. Ecology-meaning, scope and concepts; sub-divisions and approaches in Ecology.

**Unit -II**

Ecosystem-meaning and concepts; classification (types) and components of eco-system; trophic structure, ecological pyramid, energy flow and biogeochemical cycles in eco-system; productivity and equilibrium in ecosystem; biosphere as global ecosystem; Major ecosystems and their distribution (Fresh Water, Marine, Forest, Grassland, Desert and Agricultural Ecosystems); ecological regions in India.

**Unit -III**

Environmental degradation-nature, process, types and their causes; Environmental pollution-nature, types, sources and effects of air, water and land pollutions; Green house effect, Global warming, Depletion of ozone layer; imbalances at local, regional and global level; environmental hazards and disasters.

**Unit -IV**

Environmental management-concepts, methods and approaches in environmental management; Ecological basis of environmental management; Environmental impact assessment (EIA)-meaning, concept, methods and process; A case study of EIA; Role of EIA in Planning and development; Remote Sensing in Environmental studies-A case study; Global concern for environment-the Earth Summit.

**Unit -V**

Environmental degradation and problems in India- some case studies; environmental hazards and disasters in India; emerging environmental issues in India; environmental conservation and management in India; conservation and management-programmes and policies; environmental acts and legislation in India (the Wildlife Act, Water Act, Forest Act, Environment Protection Act, National Environment Tribunal Act etc.) Environmental awareness and movements in India.

**Note :-**

The question paper shall contain ten questions in all, including two questions from each unit. Candidate shall attempt five questions in all selecting at least one question from each unit. All questions carry equal marks.

**Select Readings :**

1. Anderson. J.M. (1981) Ecology for Environmental Science: Biosphere Ecosystems and Man, Arnold, London.
2. Awasthi, N.M. and Tiwari, R.P.L. (1995) Paryavaran Bhugool (Environmental Geography), Madhya Pradesh Hindi Granth Academy, Bhopal.
3. Goudie, Andrew (1984): The Nature of the Environment, Oxford Katerpring Co. Ltd.
4. Nobel and Wright (1996): Environmental Science, Prentice Hall, New York.
5. Odum, E.P. (1971): Fundamentals of Ecology, W.B. Sanders, Philadelphia.
6. Saxena, H.M. (1994): Prayavaran evm Paristhitiki Bhugool (Geography of Environment and Ecology). Rajasthan Hindi Granth Academy, Jaipur.
7. Singh, Savinder (1991); Environmental Geography, Prayag Pustak Bhawn, Allahabad.
8. Singh, R.B.(ed.) (1989); Environment Geography, Heritage, New Delhi.

9. Strahler, A.N. and Strahler, A.H. (1973): Environmental Geoscience; Interaction between natural systems and Man, John Wiley and sons, New York.
10. Strahler, A.H. and Strahler A.N. (1977); Geography and Mans Environment. John Wiley, New York.
11. William, M.M. and John, G (1996): Environmental Geography- Science, Landuse and Earth System, John wiley and sons, New York.

## **Paper-IX (i) SOCIAL GEOGRAPHY**

**Theory : 80**  
**Internal Assessment : 20**  
**Max. Marks : 100**  
**Time : 3 Hrs.**

### **Unit -I**

Nature and development of social geography; philosophical bases of social geography Positivists; structuralist; radical, humanistic, post-modern and post structuralist; social geography in the realm of social sciences.

### **Unit -II**

Space and Society: Understanding society and its structure and process; geographical bases of social formations; contribution of social geography to social theory; power relations and space.

### **Unit -III**

Towards a social geography of India; Social differentiation and region formation; evolution of Socio cultural regions of India; bases of social region formation; role of race, caste, ethnicity; religion and languages; Indian unity and diversity; social transformation and change in India.

### **Unit -IV**

Social well-being : Concepts of social well-being, physical quality of life, Human development; measurement of human development with social, economic and environmental indicators; Rural urban deprivation

in India with respect to health care; education and shelter; deprivation and discrimination issues relating to women and under privileged groups; Patterns and bases of rural and urban society.

### **Unit -V**

Public policy and social planning in India: review of Five Years Plans and area plans towards social policy in India; strategies to improve social well-being in tribal, hill, drought and flood prone areas; Social and Environmental impact assessment of development projects.

### **Note :-**

The question paper will contain ten questions in all, including two questions from each unit. Candidate shall attempt five questions in all selecting at least one question from each unit. All questions carry equal marks.

### **Select Readings :**

1. Ahmad, Aijazuddin (1999), Social Geography, New Delhi: Rawat.
2. Dreze, Jean and Amartya Sen (1996), Economic Development and Social Opportunity, New Delhi: Oxford University, Press.
3. Dubey, S.C. (1991), Indian Society, New Delhi: National Book Trust.
4. Gregory, D. and Larry (eds) Social Relations and Spatial Structures, Oxford: Macmillan.
5. Planning Commission (1981), Report on Development of Tribal Areas.
6. Rao, M.S.A. (1970), Urban Sociology in India, New Delhi: Orient Longman.
7. Schwartzberg, Joseph (1978), An Historical Atlas of South Asia, Chicago: University of Chicago Press.
8. Sen Amartya and Dreze Jean (1996), Indian Development: Selected Regional Perspectives, New Delhi: Oxford.



9. Smith David (1977), *Geography: A Welfare Approach*, London : Edward Arnold.
10. Sopher, David (1980), *An Exploration of India*, Cornell University Press.

## Paper-IX (ii) RURAL GEOGRAPHY

**Theory : 80**

**Internal Assessment : 20**

**Max. Marks : 100**

**Time : 3 Hrs.**

### Unit -I

Nature and scope of rural geography: Significance and development of rural geography; Recent trends in Rural Geography with special reference to India; approaches to rural settlement geography; Historical development of rural settlements in India.. Analysis of Place names and environment. Sources of information and problems in their use.

### Unit -II

Morphology of rural settlements in India: Religio-ritual model, Secular-dominance model; Types and patterns of rural settlements in India; House types and field patterns of rural settlements; Regional patterns of houses in India.

### Unit -III

Functional classification of rural settlements; Rural service centres: their nature and hierarchy and functions; Basics of rural settlement planning; rural settlement planning in India.

### Unit -IV

Infrastructure for rural development: irrigation, rural electrification, transportation; credit and marketing facilities in India; panchayatei raj and rural development.

### Unit -V

Rural Society and economy in India: Social organization, Kinship system, age of marriage; land reforms; agricultural land-use and

distribution of landholdings. Issues of poverty, unemployment; problem of rural depopulation in India.

### Note :-

The question paper shall contain ten questions in all, including two questions from each unit. Candidate shall attempt five questions in all selecting at least one question from each unit. All questions carry equal marks.

### Select Readings :

1. Alam, S. M. et. al (1982) Settlement System of India, Oxford and IBH Publication co., New Delhi.
2. Chisholm, M. (1967) Rural Settlements and Land Use, John Willy, New York.
3. Clout, H.D. (1977) Rural Geography, Permagon, Oxford.
4. Hudson, F.S. (1976) A Geography of Settlements, Mac Donald & Evans, New York.
5. Mitra, A. (1960) A Report on House Types and Village Settlement Patterns in India, Publication Development, Govt. of India.
6. Mandal, R.B. (1988) Systems of Rural Settlements in Developing Countries, Concept Publication, New Delhi.
7. Mandal, R.B. (2000) Introduction to Rural Settlements, Concept Publication, New Delhi.
8. Singh, J.P., and Mumtaz Khan. (1999) "Hindu cosmology and the Orientation and segregation of social groups in villages in Northwestern India." Geografiska Annaler, Vol. 81 B. No. 1, pp 19-39.
9. Singh, R.L. and K.N. eds. (1975) Readings in Rural Settlement Geography, NGSI, Varanasi.
10. Singh, R.L. (1976) Geographic Dimensions of Rural Settlements, NGSI, Varanasi.
11. Singh, R.Y. (1994) Geography of Settlements, Rawat Publication, New Delhi.
12. Wanmali, S. (1983) Service Centres in Rural India, B.R. Publication, New Delhi.

**Paper-IX (iii) REGIONAL DEVELOPMENT AND PLANNING**

**Theory : 80**  
**Internal Assessment : 20**  
**Max. Marks : 100**  
**Time : 3 Hrs.**

**Unit -I**

Conceptual framework : growth, progress, development; economic growth and development; development and social sciences; development and geography, concept of regional development. Theories of Development from Above-”Circular and cumulative causation’ model of Hirschman” “Core-Periphery” model of Friedman”, Growth-Pole’ model of Perroux and “Stages of growth” model of Rostow; Development from Below-a general survey with special reference to basic need and agropolitan approach.

**Unit -II**

Factors in development-resources, technology, socio-economic and political institutions. Measurement of Regional disparities-some basic issues, indicators, spatial scale of analysis and, techniques; regional disparities in India-patterns and trends.

**Unit -III**

Regional planning-concepts, objectives, principles, and techniques of Regional planning; Role of geography in regional planning; surveys for regional planning-regional, techno-economic and diagnostic surveys.

**Unit -IV**

Planning regions-concepts, criteria demarcation and hierarchy of planning regions of India-scheme of V. Nath; L.S. Bhat and Rao; P Sengupta and Galina Sdasyuk. Regional Development Policies in Five Plans in India. The new economic policy and regional development in India.

**Unit -V**

Concept of Multi level planning; decentralised planning; people participation in the planning process; Panchayatei Raj system; role

and relationship of Panchayati Raj Institutions (Village panchayat, Panchayat Samiti and Zila Parishad) and administrative structure (Village, Block and District). Regional development in India-Problems and Prospects.

**Note :-**

The question paper shall contain ten questions in all, including two questions from each unit. Candidate shall attempt five questions in all selecting at least one question from each unit. All questions carry equal marks.

**Select Readings :**

1. Blunder, J. et al (1973) Regional Analysis and Development, Harper & Row, London.
2. Bhatt, L.S. (1972) Regional Planning in India, statistical Publishing Society, Calcutta.
3. Bhatt, L.S. et al (eds) (1982) Regional Inequalities in India, Society for the Study Regional Dis-parities, New Delhi.
4. Chandna, R.C. (2000) Regional Planning-A Comprehensive Text, Kalyani Publishers, Ludhiana.
5. Chand, M. and V.K. Puri (1985) Regional Planning in India. Allied Pub. Pvt. Ltd. New Delhi.
6. Chorley, R.J. and P. Hagget (1970) Socio Economic Models in Geography, Methuen, London.
7. Coates, B.R. and R.J. Johnston (1977) Geography and Inequality, Oxford University Press, Oxford.
8. Hurst, M.E. (1972) A Geography of Economic Behaviour Duxbury Press, Behment.
9. Kuklinsk, A.R. (ed) (1972) Growth Poles and Growth Centries in Regional Planning Monton, the hanguie.
10. Misra R.P. et al (eds) (1974) Regional Development Planning in India, Vikas, New Delhi.

**Paper- X PRACTICALS****Max. Marks : 100****Time : 3 Hrs.****Distribution of Marks :****Labwork test : 60****Record on Labwork : 20****Viva-Voce : 20****Unit -I Photogrammetry, Remote Sensing and GIS (Theoretical)**

- A) History and development of photogrammetry and remote sensing techniques; aerial photographs-types, characteristics and scale; stereoscopes and stereoscopic vision; photomosaics-types and uses; remote sensing technique-electromagnetic radiation (EMR); data acquisition system; elements and principles of image interpretation; platforms-types and characteristics; remote sensing data; remote sensing set-up in India.
- B) Geographical information system-Basic concepts and components; Data base structure-vector and raster (Introductory aspects only); elements/functions-encoding, data input, data base management, manipulation and analysis operations and output system; need and applications of GIS in Geography.

**Unit -II Photogrammetry and Remote Sensing (Practical)**

- A) Test of stereovision and orientation of stereopair Determination of photoscale-different methods (Two Exercises)  
Measurement of Parallax height of an object (One Exercises)  
Preparation of stereogram, stereotriplet and mosaic (Three Exercises)  
Preparation of Index maps (Two Exercises)
- B) Preparation of Interpretation key  
Interpretation of Aerial photographs;

Identification, mapping and interpretation of cultural and natural features. (Two Exercises)

- ii) Urban studies on aerial photos such as change detection, residential area study, enlargement and transformation of details etc. (Four Exercises)  
Interpretation of Satellite imageries (Two Exercises)

**Unit -III Interpretation of Topographical sheets**

- A) Topographical sheet Interpretation : basic information on Topographical sheets; arrangement and identification of topsheets of India, preliminary information, conventional signs;
- B) Interpretation of relief, drainage, settlements, land-use, vegetation and transport network on toposheets, (15 exercises).

**Note :-**

The question paper shall contain six questions in all, including two questions from each unit Each question will have two parts (i) and (ii) from the corresponding A & B part of each unit. Candidates are required to attempt three questions in all selecting atleast one question from each unit.

**Select Readings :**

- Heywood, Ian et. al. (2002), Geographical Information Systems (second edition), Pearson Education, Delhi.
- Lillesand, T.M. and Kiefer, R.W. (1994) Remote Sensing and Image Interpretation, John Willey and Sons, New York.
- Nag, P and Kudrat M (1998) Digital Remote Sensing, Concept Publishing Co., New Delhi.
- Rampal, K.K. (1999) Handbook of Aerial Photography and Interpretation, Concept Publishing Co., New Delhi.

5. Robert, G. Reaves et al (1981) Manual of Remote Sensing (eds), Fourth Edition Vol. I and II, American Society of Photogrammetry, Falls Church, USA.
6. Sabins, FF (1986) Remote Sensing-Principles and Interpretation, Second Edition, WH Freeman and Co., New York.
7. Sharma, J.P. (1996): Prayogic Bhoogal, Rastogi Publications, Meerut.