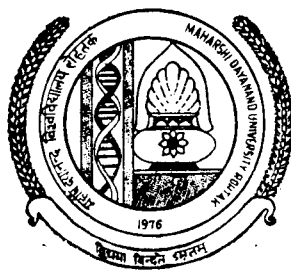


Maharshi Dayanand University Rohtak



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

Session—1999-2000

Available from :

Deputy Registrar (Publication)
Maharshi Dayanand University
Rohtak-124 001 (Haryana)

Price :

At the Counter : Rs. 50/-
By Regd. Parcel : Rs. 75/-
By Ordinary Post : Rs. 60/-

ORDINANCE - 'MASTER OF SCIENCE EXAMINATION'

1. The Master of Science Examination shall be held in two parts. Part-I Examination shall be held at the end of the first year and Part-II Examination at the end of the second year.

2. The Examination in Part-I and Part-II shall be held once a year ordinarily in the month of April on such dates as may be fixed by the Vice-Chancellor.

A supplementary examination in Part-II of M.Sc. will be held in December for those candidates who have passed all the papers of Part-I examination but have got 'reappear' or have failed or want to improve their score in paper(s) of part-II examination. However, total number of chances will not exceed as given in the Ordinance.

3. The last date for the receipt of admission form and fee without late fee as fixed by the Vice-Chancellor shall be notified to the Heads of the University Teaching Departments and the Colleges concerned.

4. A candidate's admission form and fee may be accepted after the last date on payment of Rs. 105/- up to the date notified by the University.

No late fee shall be charged if the admission form and fee are received within three working days of grace after the last date for the receipt of the same without late fee.

5. No one shall be eligible to join the first year (Part-I) class of M.Sc. Course unless he has passed one of the following examination:-

a) B.Sc. (Hons.) examination of this University with atleast 45% marks in the aggregate in the subject offered for the M.Sc. Course.

b) B.Sc. (Pass) examination with atleast 50% marks in the aggregate.

c) An examination of any other university recognised by the University as equivalent to (a) or (b) above.

Provided that:

i) to be eligible to join M.Sc. Course in Physics, a candidate must have passed B.Sc. Examination with Physics and Mathematics as two of the main subjects:

- ii) to be eligible to join M.Sc. Chemistry, a candidate must have passed B.Sc. Examination with Chemistry as one of the main subject.

Note: A Minimum of 25% of the total seats shall be filled in by the students who have passed the B.Sc. Examination with Chemistry, Physics and Mathematics. Any seat remaining unfilled out of this quota may be offered to other eligible candidates

- iii) to be eligible to join M.Sc. course in Bio-Science, a candidate must have passed B.Sc. Examination with Botany, Zoology, Bio-Sciences and any one of the subjects viz. Chemistry, Bio-Chemistry, Micro-Biology, Fisheries and Geology.

Note: The candidates will be required to opt for Animal Sciences or Plant Sciences or Environmental Biology in M.Sc. final course which will be allowed after taking into consideration the performance of the candidate in M.Sc. previous examination. However, an indication to this effect will be required to be given by the candidate at the time of his admission.

- iv) conditions for admission to M.Sc. Course in Mathematics shall be same as prescribed for admission viz. M.A. Course in this subject.
- v) To be eligible to join M.Sc. Course in Geology, a candidate must have passed B.Sc. Examination with atleast 50% marks in the aggregate with Geology and any of two of the subjects viz. Physics, Mathematics, Chemistry, Botany, Zoology, Bio-Science and Geography;
- vi) to be eligible to join M.Sc. Course in Mathematical Statistics and Operations Research a candidate must have passed B.A./B.Sc. (Pass) Examination with atleast 50% marks in the aggregate with Mathematics or Statistics as one of the subjects or have passed B.A./B.Sc. (Hons.) Examination in Mathematics or Statistics with atleast 45% marks in Mathematics/Statistics.

There shall be a Project Report in M.Sc. Mathematical Statistics (Final) and that the project report shall be evaluated by the external examiner on five point grading. The last date for submission of Project Report will be two months after the theory papers which can be extended further by two months

with the permission of the Vice-Chancellor.

Note : *A candidate who is placed under compartment in the qualifying Examination shall not be allowed to join M.Sc. Course. He/She will be eligible only after clearing the qualifying Examination.*

- 6.1 A candidate who has failed in one or more papers or fails to appear in the examination shall be allowed two additional subsequent chances only to pass the examination.
- 6.2 A candidate who fails to pass the M.Sc. examination within a period of four years of his admission to the course shall be deemed to be unfit for postgraduate studies in the subject concerned.
- 6.3 A person who has passed the M.Sc. (Previous) examination in the subject concerned from this University shall be eligible to join the M.Sc. final class. This is subject to Clause-6.2 above. However, the candidates who have passed atleast two theory papers out of four or five theory papers or atleast three theory papers out of six or seven theory papers of part-I examination of this University will be promoted to Part-II Class. provisionally.
7. M.Sc. Examination in Part-I/Part-II shall be open to a student who:-
 - a) has passed the requisite qualifying Examination or is covered under Clause-6 and
 - b) has his name submitted to the Controller of Examinations by the Head of the University Department/Principal of the College. he has most recently attended and produces the following certificates signed by him:-
 - i) of possessing good character;
 - ii) of having remained on the rolls of the Department/College, during the year preceding the Examination.
 - iii) of having attended not less than 65% of full course of lectures and tutorial separately and 75% of practicals in each part (the course to be counted upto the last day when the classes break up for the preparatory holidays).
8. A candidate whether a regular student or an ex-student shall submit his admission application to the Registrar/Controller of Examinations duly signed by the Principal of the College/Head

of the University Department he has last attended.

9. Every candidate shall be examined according to the Scheme of examination and syllabus as approved by the Academic Council from time to time.
10. The amount of Examination fee to be paid by a candidate for each part shall be as follows:-

| Regular student | Ex-student |
|-----------------|------------|
| Rs. 100/- | Rs. 110/- |

Note:- Plus Rs. 20/- per practical subject.

A candidate who re-appears in one or more theory or practical papers for the purpose of passing the examination or a candidate who appears in one or more theory papers for the purpose of improvement of score of marks/result shall pay fee as for the whole examination.

11. The medium of instructions and examination shall be English.
- 12.1 The minimum number of marks required to pass the examination shall be as under:-
- i) 33% in each paper (written and practical) separately;
 - ii) 40% in dissertation/Viva-voce where prescribed;
 - iii) 40% in the aggregate.
- 12.2 A candidate who has completed the prescribed course of instructions in a College/University Teaching Department for Previous/Final examination but has not appeared in it or have appeared fails may be allowed on the recommendation of the Principal of the College/Head of University Teaching Department concerned to appear in the subsequent years in the examination paper(s) as the cases may be without attending a fresh course of instructions while re-appearing in the examination, the candidate shall be exempted from re-appearing in the paper(s) and/or practical(s) in which he has obtained atleast 40% marks.
13. As soon as possible, after the termination of the examination the Registrar/Controller of Examinations shall publish the result of the Candidates and issue Detailed Marks Card.
14. The result of candidates who have passed M.Sc. examination shall be classified into divisions, as under and the division obtained by the candidate will be stated in his degree.

- a) Those who obtain 60% or more marks First Division
- b) Those who obtain 50% or more but less than 60% marks Second Division
- c) All below 50% Third Division

15.1 A candidate who has passed M.Sc. Previous examination, with atleast 55% marks may offer dissertation wherever prescribed in the Scheme of examination for the course. The subject of dissertation shall to approved by the Head of Department concerned. A candidate shall submit to the Head of the University Department an application for the approval of the topic for the dissertation alongwith a synopsis within one month of his admission to M.Sc. (Final) examination.

Provided in the case of M.Sc. (Geology) exam. there shall be a dissertation based on days field work (surface maping) in the M.Sc. Previous. The work of dissertation will be done in the M.Sc. previous and viva-voce examination of dissertation will be held at the end of M.Sc. previous alongwith practical examination. Provided further that the condition of obtaining 55% marks in M.Sc. previous examination, for offering dissertation in M.Sc. final shall not be applicable in the case of students of M.Sc. (Geology) course.

15.2 Every candidate who offers dissertation shall be required to submit three copies of his dissertation alongwith a brief abstract of the same giving an account of the Investigation research conducted and its main findings (which will not exceed 500 words). The dissertation shall be examined by one external examiner only.

15.3 The last date for receipt of the dissertation in the office of the Controller of Examinations shall be one month before the commencement of the theory examination: Provided that in exceptional cases; the Vice-Chancellor shall have the power to extend, on the recommendation of the Head of the Department the last date for receipt of the dissertation upto three months. If a candidate fails to submit the dissertation even during the extended period he will be considered to have absented in the dissertation paper and his result shall be declared accordingly.

15.4 A candidate who has submitted a dissertation as part of his examination may withdraw the same before it has been

examined but once it is examined and the candidate obtains the minimum pass marks he shall not be permitted to withdraw it or submit another dissertation in lieu thereof. The marks obtained by him for the dissertation shall be taken into account when he appears in any future examination for the purpose of passing therein or for improving score of marks/result.

16. A candidate who has already passed the Master of Science examination from this University, in a subject in which different optional papers are permitted, may appear in one or more optional paper(s) of that subject at an subsequent examination when held as a regular student only. The examination fee shall be Rs. 35/- each paper.

Such a candidate shall in order to pass, be required to obtain atleast 40% marks in each paper in theory and practical separately.

- 17.1 A person who has passed the M.Sc. previous examinations of this University will be allowed to appear as an ex-student in the M.Sc. previous examinations for improvement alongwith M.Sc. final examinations respectively, only once, in one or more theory paper(s) within a period of 3 years of passing M.Sc. previous examination.

A person who has passed the M.Sc. examination of this University, and desirous of improving his score of marks will be allowed to appear as an ex-student in the M.Sc. final examinations, for improvement only once in one or more theory paper(s) within a period of two years of his passing the M.Sc. examination. In all a candidate will be allowed to avail one chance within the period specified above. Improvement in practical paper is not permissible.

The result of such a candidate shall be declared only if he improves his score of marks, by taking into account the marks obtained by him in the paper(s) in which he re-appeared and the marks obtained by him earlier in the remaining paper(s). The fact that the candidate has improved the division shall be mentioned in the Detail Marks Cards. If a candidate opts to appear in both previous and final examinations for the purpose of improvement but finds that he has improved the score of marks obtained by him in the previous examination, he may not appear in the final examination as the case may be and

inform the Controller of Examinations for the declaration of his result.

Provided further that the candidate will take the examination according to the syllabus in force for the regular students for that examination. Provided that the syllabus for the candidates for the special examination to be held in September/October shall be the same as was in force for the regular student in the last annual examination.

18. Notwithstanding the integrated nature of this course which is spread over more than one academic year, the Ordinance in force at the time a student joins the course shall held good only for the examination held during or at the end of the academic year and nothing in this ordinance shall be deemed to debar the University from amending the Ordinance and the amended Ordinance, if any, shall apply to all students whether old or new.
19. Candidate admitted to M.Sc. Course in 1990-91 or earlier shall be governed by the old rules. The new rules shall be applicable w.e.f. the admission of academic Session 1991-92.

M. A. M.Sc. (Final) Geography 1999-2000

M.A./M.Sc. (F) examination in Geography shall consist of four papers of 100 marks each of three hours duration and the paper-X on Field Methods and Practical shall consist of two parts i.e. paper-X (Part A) and paper-X (Part B) of 50 marks each. The Paper-X (Part A) shall be a theory paper on "Research Methodology" of 3 hours duration and the examination shall be conducted with the main theory examination. The paper-X Part-B shall be practical examination on 'Remote Sensing and its Application in Geography' of 3 hours duration.

The department will provide for the optional papers according to the administrative and academic convenience of the department. The number of students in each options shall be equally divided in consultation with the departmental committee and the HOD's decision shall be final in this regard.

| Paper Code | Nomenclature | Marks | Duration (Hours) |
|------------|---|-------|---------------------|
| Paper-VI | Modern Geographical Thought | 100 | 3 |
| Paper-VII | (Any one of the following) : | | |
| | (a) Political Geography | 100 | 3 |
| | (b) Urban Geography | 100 | 3 |
| | (c) Geography of Manufacturing | 100 | 3 |
| | (d) Transport Geography. | 100 | 3 |
| Paper-VIII | (Any one of the following) : | | |
| | (a) Regional Development and Planning. | 100 | 3 |
| | (b) Social Geography | 100 | 3 |
| | (c) Population Geography. | 100 | 3 |
| | (d) Medical Geography. | 100 | 3 |
| Paper-IX | (Any one of the following) : | | |
| | (a) Agricultural Geography. | 100 | 3 |
| | (b) Geography of Rural Settlement | 100 | 3 |
| | (c) Environmental Geography. | 100 | 3 |
| | (d) Applied Geography. | 100 | 3 |

| | | | |
|---------|--|------|---|
| Paper-X | Field Methods and Practicals | | |
| | Part (A) Research Methodology | 50 | 3 |
| | Part (B) Practicals-Remote Sensing and its Application in Geography | 50 | 3 |
| | (i) Lab Work | { 24 | - |
| | (ii) Practical record | { 16 | - |
| | (iii) Viva-Voce. | { 10 | - |

Note : The lab work test shall be conducted by a board of two examiners-one external (common to both the centres) and one internal. The internal examiners be appointed in such a way that a teacher from the Deptt. of Geography M.D.U. be sent to G.C. Narnaul to act as an internal and a teacher from G.C. Narnaul be appointed to act as internal examiner at Deptt. of Geography, M.D.U. The Head of the Deptts. at the two examination centres will coordinate the viva-voce examination with the help of the course incharge/ the co-ordinator of the course (if two or more teachers are sharing the course).

Paper-VI MODERN GEOGRAPHICAL THOUGHT

M.M. : 100

Time : 3 hrs.

Part-I

Nature of Geography as a field of learning : Geography as a professional field.

Geographical versus sociological imagination : The tasks of Geography as a social science : Geography and the scientific method.

Some fundamental concepts : Geographical facts, Spatial distribution : Areal association, Location, Regionalization and Spatial interaction. (Short explanatory notes).

Part-II

Rise of geography as a modern discipline the impact of discoveries. The contributions of Bernard Varenus, Ritter and Humboldt as twin founders of geography as a modern discipline.

Post-Ritterian crisis of geography as a dualistic discipline. Rise of Geography as an integrated discipline : (a) integration in terms of Ecology-contributions of Ratzel : (b) Integration in terms of Chorology : contributions of Richthofen, Hetnner, and Sauer.

Part-III

Impact of Darwin on geographical thought (with special reference to Ratzel and Davis). Role of historical explanation in human geography : approaches to the study of historical geography.

General developments in geographic thought and methodology since the early Fifties : Nature and consequences of the quantitative revolution in geography.

Part-IV

Anti-positivism and the rise of behavioural and humanistic geography. The call for social relevance. The convergence between Modern Geography and Western Marxism.

Modern Vs Post-modernism : and the geography of localities. The renewed focus on geography as the study of place : The nature and dimensions of environmentalism in geography.

Note : The question paper shall contain eight questions in all including two questions on each part. Candidates shall attempt four questions selecting atleast one question from each part. All questions carry equal marks.

Books Recommended :

1. James P.E., All possible worlds, Johnwiley (Indian Reprint).
2. Dickinson, R.L., Makers of Modern Geography, Routledge and Kegan Paul, London.
- Johnston, R.J., Geography and Geographers, Edward Aronold, Fourth Edn., 1991.
- Johnston, R.J.,(ed.) The Future of Geography, Methuen, London 1986.
- Hartshorne, R., Perspective on the Nature of Geography, Ranch MC Nally (Indian Reprint)
- Davies, W.K.D.(ed.) Conceptual Revolution in Geography, London University Press, 1972
- Gould, Peter The Geographers Craft, Routledge & Kegan Paul, London, 1985.
- Gregory, D., Ideology, Science and Human Geography, Hutchinson London.
- Lay, D., Humanistic Geography, Croom Helm, 1978.
- Dikshit, R.D., The Art and Science of Geography, Prentice-Hall of India Private Limited, 1994.
- Dikshit R.D. Geographical Thought : A Contestual History of Ideas. Prentics Hall of India, New, Delhi, 1997.
- Reet, R.(Ed.), Radical Geography Methuen, 1976.

Paper-VII (a) **Political Geography** Max. Marks 100
Time : 3 hours

Part-I

History and development of Political geography with special reference to contributions of Ratzel.
Changes in the concept of Political geography: Organismic, (ii) Chorological, (iii) Systems/Spatial-behavioural, (iv) Political Economy-(Public Choice, radical/marxist, and world systems perspectives) - a general survey.

Part-II

Geopolitical world views :
Global Strategy in the age of surface transport with special reference to Mackinder and Spykman.
Global strategy in an Air age, ideas of Alexander de seversky. Geostrategy in the age of Multiple power Nodes- the ideas of SB Cohen (1991).

2. Geopolitics of Uneven Development.

Foundations of Core-Periphery relationship and the North South divide (an overview.)
Post - 1945 Developments-Neo-imperialism (its nature and consequences).

Part III Electoral Geography

i) Nature and content (ii) Electoral Abuse gerryman during and malapportionment. (iii) The world system theory of elections a critique.

State and Nation : (i) The idea of the state : a historical perspective

(ii) The concept of Nation building.

Part-IV

Systems of Governmental Organisation with special reference to the nature of federalism as a democratic policy.

Principle of federal stability

The impress of Effective Central Authority on the land-scape
The structure Process-stage Framework for the study of effectiveness of Central Authority as landscape agency.

Note : The question paper shall contain eight questions in all including two questions on each part. Candidates shall attempt four questions selecting atleast one question from each part. All questions carry equal marks.

Books Recommended

- R.D. Dikshit, **Political Geography**, 2nd Edn., 1994 Tata McGraw Hill.
- R.D. Dikshit. **Geography of Elections**. The Indian Context, 1994. Rawat, Publications Jaipur
- R.D. Dikshit **Developments in Political Geography :**
A Century of Progress-Sage Publications, 1997
- P.J. Taylor, **Political Geography**, 1993, Longman Scientific, 1996.
- J.R. Short, An introduction to Political Geography, Routledge
- P. J, Johnson **Geography of Election**, Penguin, 1979.
- & P.J. Taylor.
- R.D. Dikshit 'On Developments in Political Geog.' Indian Geography **Institute of Indian Geographer**
Vol. I PP 121-134.
- R.D. Dikshit **Political Geography of Federalism**,
Macmillan. London and Delhi, 1975.

Paper-VII (b) **Urban Geography** Max. Marks: 100
Time: 3 Hrs.

Section-I

Definition, nature and scope of urban geography;
Recent trends in urban geography,
Evolution of Urban places through historical times the ancient, the medieval and the modern city.

Section-II

A study of the following aspects of urban places.
Setting-Location, situation and site; definition, nature and significance.
Ecological processes and their Spatial expression, Internal structure Theories of city structure-Concentric Zone theory, sector theory, multiple nuclei theory and social area analysis: internal structure of Indian Towns-some case studies.

Section-III

The Rural Urban Fringe. Definition, delimitation and structure City-region relationship
Settlement systems: the rank size rule and the law of primate city; cities as central places-models of Christaller and losch.

Section-IV

A comparative study of different types of classifications of urban places.

The process of urbanization definition and measurement

The process of urbanisation in India salient features;

Urbanisation policy and the National Five Year Plans.

Note : The question paper shall contain eight questions in all including two questions on each part. Candidates shall attempt four questions selecting atleast one question from each part. All questions carry equal marks.

Books Recommended

- Bose, A. (1980), India's Urbanization 1901-2001. Tata McGraw Hill, New Delhi.
- Bourne, L.S.(ed.) 1982, Internal Structure of the City, Oxford University Press, London,
- Carter, Harold (1995) The Study of Urban Geography, Edward Arnold, London, (Fourth edition).
- Clark, D. (1982) Urban Geography An Introductory Guide, Groom Helm, London.
- Dickinson, R.E. (Latest edition) City Region and Regionalism, Routledge and Kegan.
- Herbert, D.T. (1977) Urban Geography. A Social Perspective, David and Charles, Newton Abbot.
- Jack, P.Gibbs (1965) Urban Research Methods, Affiliated East West Press Pvt. Ltd., New Delhi
- Johnson, J.H. (1972) Urban Geography: An Introductory Analysis, Pergamon Press, London.
- Kundu, Amitabh (1992) Urban Development and Urban Research in India Publishers, New Delhi.
- Mayer, H.M. and Kohn, C.F. (eds.) 1959 Readings in Urban Geography University of Chicago Press, Chicago.
- Cadwallader, Martin (1996) Urban Geography, Prentice Hall, New Jersey.
- Putnam, Robert G. (1970) A Geography of Urban Places, Methuen, Toronto
- National Institute of Urban Affairs (1988) State of India's Urbanisation, New Delhi.

- Raj Bala (1986) Trends in Urbanisation in India, Rawat, Jaipur.
- Ramachandran, R. (1989) Urbanisation and Urban systems in India, Oxford, New Delhi.
- Report of the National Commission on Urbanisation, 1988 Vol-I
- Short. John. R.(1984) An Introduction to Urban Geography. Routledge and Kagan Paul, London
- Smailes, A.E. (1965) Geography of Towns. Hutchinson University Press London.
- Dutt, A.K. et al (1994) Asian City. Kluwar
- Government of India : Plan Drafts of Different Five Year Plans, Planning Commission, New Delhi.
- Government of India (1988) Report of the National Commission on Urban Development, New Delhi.

Paper-VII (c) **Geography of Manufacturing**

Max. Marks : 100

Time : 3 hrs.

1. a) Nature and classification of manufacturing industries; sources of information for industries. Industrial linkage a typology of industrial linkages, scale economies and economics of agglomeration as factors in industrial location.
- b) Industrialisation and development absorption of agrarian over population, social and demographic effect, the character of industrial development (capital and labour intensive.) problems of capital formation and attraction, industrialisation and income redistribution.
2. a) Materials, markets and transfer costs in industrial location. The importance of transport a historical review.
- b) Energy source and industrial location role of traditional and new (primary.) sources, energy in modern industrial economy).
3. a) Factors of production and industrial location. Labour regional variation in labour costs and supply, labour productivity; enterprises and management – capital and land.

- b) Effects of Governmental activity—general Government activity direct and indirect government influence on location, Govt. regional policy and industrial location the case of India.
- 4. a) Models of industrial location - Weber, Losch; actual and theoretical industrial behavioural patterns.
- b) Industrial movement-intra-regional and intra-city, movement and linkage changes in the location of selected manufacturing industries-iron and steel and textiles in India.

Note : The question paper shall contain eight questions in all including two questions on each part. Candidates shall attempt four questions selecting atleast one question from each part. All questions carry equal marks.

Reading List

- | | |
|-------------------------------------|--|
| R.C Estall and R.D. Bachanan (1980) | Industrial Activity and Economic Geography, Hutchinson, London. |
| J. Bale (1981) | The location of Manufacturing industries, Oliver and Boyed, Edinburgh. |
| D.M. Smith | Industrial Location, John Wiley, New York. |
| A.B. Mountjoy (1966) | Industrialisation and under developed countries, Hutchinson, London. |
| M.E. Eliot Hurst (1971) | A Geography of Economic Behaviour, Duxbury, New York. |

Papar-VII (d) Transport Geography Max. Marks: 100
Time : 3 hours

Section-I

- Nature and Scope of transport Geography.
- Major approaches of transport Geography.
- Principles of transport and patterns of movement.
- Models of spatial interaction, distance decay theory gravity models and potential surface models.

Section-2

- Geographic aspects of Freights rate, model comparison of rates and services.
- Transport rate and economic location transport problems of metropolitan areas. Urban and rural transport problems with special reference to India and U.K.

Section-3

- Development of transport system in India.
- Role of transportation in regional developments in India.
- Major transport regions in India.
- Transport Network. structure, connectivity and linkages in India.

Section-4

- Transport and tourism
 - Functions of transport in tourism
 - Control of the rural and the Urban problems Transportation Planning.
- Note : The question paper shall contain eight questions in all including two questions from each section. Candidates shall attempt four questions in all selecting atleast one question from each section.

Reading Books

- M.E. Eliot-Hurst (Ed.) Transportation Geography, Comments and Readings, Mc Graw Hill, 1974.
- H.Robinson and C.G. Bamford Geography of Transport, Macdonald and Evans 1978, London.
- E.J. Teafe and H.Gautier, Geography of Transportation, Prentice Hall, Englewood cliffs, 1973.
- Michael Barke, Transport and Trade, Oliver & Boyed, Edinburg, 1986.
- White, H.P. & M.L. Senior, Transport Geography Longman, London, 1983.
- Raza, Moonis and Y. Aggarwal Transport Geography of India, Concept Publishing Company, New Delhi, 1986.
- R.Briksh Singh, Transport Geography of Uttar Pradesh NGSi Varansi, 1966.

Paper-VIII (a) Regional Development and Planning

Max. Marks : 100

Time : 3 hrs.

Section-I

Conceptual framework : Economic growth and development; development and social sciences; development and geography, concept of regional development.

Development models; introductory notes on the following models "Circular and cumulative causation" model of Myrdal,

“Polarization and trickling down effects” model of Hirschman”
“Metropolisatellite” model of Frank, “Core-Periphery” model
of Friedman”, “Growth-pole” model of Perroux and “Stages of
growth” model of Rostow.

Section-II

Factors in development, resources, technology, socio-economic and political institutions.

Measurement of Regional disparities : Some basic issues, indicators, spatial scale of analysis techniques; regional disparities in India-patterns and trends.

Section-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.

Section-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 Indian Five Year Plans; Multi-level planning in India (State, district and block level planning): The new economic policy and regional development planning in India.

Note :-The question paper shall contain eight questions in all including two questions from each section. Candidates shall attempt four questions in all selecting one question from each section.

Books Recommended

- | | |
|--|--|
| Chand, M. and V.K. Puri (1985) | Regional Planning in India Alied Pub.. Pvt. Ltd., New Delhi. |
| Chorley, R.J. and P. Haggti (1970) | Socio Economic Models in Geography, Methuen, London. |
| Coates, B.R. and R.J. Johnston (1977) | Geography and Inequality Oxford University Press, Oxford. |

Paper-VIII (b)

Social Geography

Max. Marks : 100

Time : 3 hrs.

Section-I

Definition and Nature of Social Geography: Social Geography a Group framework; pattern and process model. The concept of social space; Nature of Data and Social Geography and problem of Scale.

Section-II

Growth and Development of Social Geography within Geography. A fair society : concept and Measurements, Social justice & spatial system; social justice and fair society socio-demographic factors of Environmental degradation : Social consequences of migration and urbanisation; Geography public policy and planning; Explaining the social patterns (A behavioural and radical approach).

Section-III

Aspects of spatial distribution of scheduled castes and ST in India; A General survey of geographical diversity in social composition in India: Unity and diversity in India. Nature of educational Development and Regional disparity in the levels of literacy in India.

Section-IV

The relevance of the concept of Human Welfare; The Evolution of Humansitic perspective in Geography-Meaning, Methodology and approaches (Positive and Normative approaches) of Humansitic Geography: with reference to social indicators. Feminism in Geography.

Quality of life criteria; Regional Dimension of quality of life in India with special reference to indicators related to education, fertility and mortality in India.

Note :

The question paper shall contain eight questions in all including two questions on each part. Candidates shall attempt four questions selecting atleast one question from each part. All questions carry equal marks.

Recommended Books

- | | |
|-----------------------------------|--|
| Carter, John and Jones, T. | Social Geography: An Introduction to contemporary Issues, Edward Arnold London, 1989. |
| Harvey, D. | Edward Arnold, London, 1973. Social Justice & the City, |

- Knox, P.L.** Social well being. A Spatial perspective, Oxford London, 1975.
- Morris, D. et al,** Measuring the conditions of India's poor : The physical quality of life index, promila, 1982, New Delhi.
- Smith, D.M.** Human Geography : A welfare approach, Edward Arnold, 77.
- Srinivas, M.N.** The Nature of the problem of Indian Unity" in caste in modern India and the other Essays, Media Bombay-62.
- Manson, P.** "Unity and Diversity : An Introductory Review" in P, Manson (ed) India and Ceylon : Unity and Diversity pp 1-19.
- Schwartzberg, J.** "Caste Regions of the North India Plan" in Singh and Cohn (eds.) Structure and Change in Indian Society Methuen, London.
- Sabarwal, S.** "Regions and their social structure" contribution for Indian Sociology (1971) 82-98.
- Sakharov, I.V..** "Ethno Linguistic Geography of India. Facts and Problems", in Economic & Social culture Dimensions of Regionalisation, Census of India, Monograph, No. 7, 1971.
- Sopher, D.E.** An exploration of India : Cornell University, London, 1980.
- Chadona, R.C. (1989)** Spatial Dimensions of Scheduled Castes in India, Intellectual Publishers, House, New Delhi.
- Knox, P. (1982)** Urban Social Geography : An Introduction, Longman, London.
- Singh, K.S. (1985)** Tribal Society in India, Manohar, 1985.
- D.M. Smith, (1995)** Geography and Social Justice, Blackwell.

Paper-VIII (c) Population Geography

Max. Marks : 100

Time : 3 Hrs.

1. Introduction to Population Geography

Nature & scope of population Geography, sources of population data, their problems of comparability and reliability with special reference to India.

Dynamics of Population. Fertility, mortality & Migration meaning and measures; determinants of Fertility and mortality: level and transition of fertility and mortality in India.

Migration : A general study of theories of migration with detailed study of Reverstein and Lee's Theories of migration streams; causes and consequences of migration. A general survey of nature and extent of migration in India.

2. a) Distribution and composition of population :

Population density and related factors; Determinants and consequence of age & sex structure of population with reference to developed and developing countries and with special reference to India.

b) Social and Economic characteristics of population
Literacy-male and female and rural Urban, level and composition of working population with special reference to India.

3. a) Population theories, Malthus, Recardo, Marx and Post Malthusian theories. concepts of optimum population; Demographic transition and population growth and its impact on environment. Inter-relationship between population growth and Economic development.

4. Population Policy : India's population policy and family welfare programmes; performance and shortcomings of family welfare programmes since Independence.

Note :-The question paper shall contain 8 questions in all including two questions from each section. Candidates shall attempt 4 questions selecting atleast one question from each section. All questions carry equal marks.

Reading List

1. Chandana, R.C. & M.S. Sidhu : **Introduction to population Geography** Kalyani Publishers, Ludhiana, 1980.
2. Clareke, J.J., : **Population Geography**, Pergemon, 1972.
3. R. Woods, : **Population Analysis in Geography**, Longman, London, 1979.
4. K.V. Sundrum and S. Nangis (eds.) : **Population Geography** Heritege Publishers, New Delhi, 1985.
5. Bhende & Kamikar, : **Principles of Population Studies**, Himalaya Publishing House Bombay, 1983.
6. S.N. Singh, et al : **Population Translation in India**, B.K. Publishing Corporation, New Delhi, 1989.

Paper-VIII (d) Medical Geography

Max. Marks : 100

Time : 3 Hrs.

Section-I

Nature and scope of Medical Geography.
History and Development of Medical Geography.
Elementary knowledge of Human Anatomy and physiology,
Geography Pathology and Epidemiology.
Concept of health and disease, Major diseases and their
Geomedical classification.

Section-II

Geomedical data, Sources, methods of representation,
analysis, Limitations and problems, Patnogenic and Geo-
organic aspects of Medical Geography, Studies in disease-
environment association, diffusion of diseases.
Spatial and Temporal variations in the physical, cultural and
the biotic environment and its influence upon human health.

Section-III

Nutritional levels in India, Diseases of under nutrition and
Malnutrition.

Diseases of modern world Cancer, AIDS, Cardio vascular and respiratory diseases, accidents, drug abuse and drug addictions.

Common Epidemic and Endemic diseases in India.

Major diseases and their Geographical distribution in India.,

Diseases in Haryana.

Section-IV

Community health: Distribution of Medical facilities in India. Health care planning in urban and Rural areas. A critical evaluation of health care delivery system in India & Haryana.

Note :

The question paper shall contain eight questions in all including two questions from each section. Candidates shall attempt four questions in all selecting one question from each section.

Books Recommended

- Barmouth, A.T.A. : "Models and Medical Geography" in Mishra, V.C. (Ed.) **Essays in Applied Geography**, Sougor, University of Saugor.
- Lenian, J. and Fietcher, W.W. (Eds.) : **Health and The Environment** Chapter 2, Glasgow, Blackie.
- May, J.M. : "**Studies in Disease Ecology**" New York Hafner.
- May, J.M. : "**Ecology of Human Diseases**", New York, American Geographical Society.
- Mc Glashan, N.D. (ed.) : "**Medical Geography Techniques and Field Studies**", London Methuen.
- Pyle G.W., : **Applied Medical Geography**, New York, John Wiley.
- Shannon, G.W and Alan Dever, G.E. : **Health Care Delivery : Spatial Perspectives**" New York, Mc Graw.

- Stamp, L.D. Some Aspects of Medical Geography, Oxford. University Press
- Stamp, L.D. "The Geography of Life and Death" London, Foutana.
- Akhtar, R. and Learmonth (eds.) Geographical Aspects of Health and Disease in India. concept publishing Delhi, 1982.
- Armstrong, R.W. "Geographical aspects of cancer incidence in South East Asia", Social Science Medicine, 14 D. 299-306, 1980.
- Black, D. The Plague years; a chronicle of AIDS the epidemic of our times. Picador pen books, London. 1986.
- Eyles, J. and Woods, K.J.. The Social Geography of Medicine and Health Croom Helm, London, 1983.
- Learmonth, A. Disease Ecology, Basil Blackwell, 1988.

Paper-IX (a) Agricultural Geography Max. Marks :100

Time : 3 hours

Section II :-Introduction to Agricultural Geography

Definition, Nature, Scope and Significance of Agricultural Geography, Approaches of the Study of Agriculture in Geography Commodity, Deterministic, Systematic. Regional, Behavioural and Ecosystem Approaches.

Section II :-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 world whittlesey's Classification. (Subsistence-system, Commercial Grain Farming System. Mediterranean Agriculture Systems and Plantation System).

Section-III Regionalisation of Agricultural Patterns and Surveys

Concept of Agricultural Region. Techniques-Normative, Empirical Single Element. Multi-Element and Statistical Cluster and combination Analyses techniques.

Survey of Land-use. Techniques of Land-use Survey-Proximate Sensing Technique, Remote Sensing Technique. Land-use and Land capability Survey. Land use pattern in India.

Section-IV Models of Agricultural Location

The nature and need of models. classification of Models: The working classification of Models of Agricultural Activity : Economic Models (Von Thunen's model, Input -output, Behavioural Model, Diffusion Model), Descriptive Models(Experimental Models, conceptual models), Mathematical Models, Land Capability models.

Note:- The question paper shall contain eight questions in all including two questions from each section. Candidates are required to attempt four questions in all selecting atleast one question from each section.

Books Recommended

- Simpson, F.S. (ed.) Agricultural Geography, IGU, Symposium, 1964.
- Symons S.L. Agricultural Geography, G. Bell and Sons, Ltd., London, 1968.
- Gregor, H.F. Geography of Agriculture, Prentice Hall Inc., 1970.
- Hussain, M. Systematic Agricultural Geography, Rawat Pub. Co. Jaipur. 1966
- Sauer, C.O. Agricultural Origin and Dispersals : The Domestication of Animals and Foodstuffs, M.I.T., Press, 1999.
- Grigg, D.B. Agricultural Systems of the world : An Evolutionary Approach, 1977.

- Grigg, D.B. An introduction to Agricultural Geography, Routledge, London, Second Edition, 1995.
- Mohammad, N. (ed.) Perspectives in Agricultural Geography (5 Vol. concept Publishing Co., New Delhi, 1980).
- Kostrowicki, J. World Types of Agriculture, warswa, 1976. (Mimeographed).
- Morgan, W.B. and Muntou, R.J.G. Agricultural Geography, Methuen & Co., Ltd., London, 1971.
- Singh, B.B. Krishi Bhoogol (in Hindi), Tara Publications
- Weaver, J.C. 'Crop Combination Regions in the Middle West' Geographical Review, Vol. XLIV, No. 2, 1954.
- Klages, KHW Ecological Crop Geography, 1958.
- Doi, K. "The Industrial Structure of Japanese Prefectures", Proceedings of I.G.U., Regional Conference in Japan, 1957, pp 310-316.
- Stamp, L.D. The Land of Britain Its Use and Misuse, 3rd edition, Longman., London, 1962.
- Graham Edward, H. Natural Principles of Landuse, Oxford University Press, New York, 1944.
- F.A.O. A Framework for Land Evaluation, Soil Bulletin No. 32.
- Mohammad, N. Agricultural Land Use in India, A Case Study. Inter India Publications, Delhi, 1978.
- Heinz, H.I. Hein's Handbook of Nutrition, London, 1959.
- F.A.O. Food Consumption Tables for International Use, 1964.

- Andreae, B., Farming, Development and Space : A World Agricultural. Geography, water de Grytar. New York, 1981.
- Bansil, P. D., Agricultural Problems of India. Vikas New Delhi. 1977.
- Basu, A., Technological Possibilities in Indian Agriculture. Firms. KLM. Calcutta, 1978.
- Etiot Hurst, M.E., A Geography of Economic Behaviour, Duxbury Massachu Setts, 1971.
- Sengupta, P. and G. Solasyuk Economic Regionalisation of India, Problems and Approaches Census of India, 1961, New Delhi.
- Singh, J., Agricultural Geography, Tata Mc. Graw Hill Publishing Co., Ltd., New Delhi, 1974.
- Sharma, B.L., Agricultural Geography. Rawat Publications, Jaipur-1990.

Paper-IX (b) **Geography of Rural Settlement**

Max Marks : 100

Time : 3 hrs.

Section-I

Meaning, Objectives and scope of rural settlement Geography. Histogenesis of Rural settlements. Analysis of place names.

Section-II

- Geometric analysis of Rural settlements Site and location, Density, Inter-settlement distance, shape, size, Morphology of Rural settlements. Spatio-temporal diffusion Model, Religious Model, secular dominance Model. Patterns and Types of Rural Settlements.

Section-III

Rural Service centres their nature and hierarchy, Functional classification of Rural settlements. Planning and Rationalisation of Rural Settlements.

Section-IV

Origin and Evolution of clan settlements : A case study of Middle Ganga valley and Haryana Distribution of caste and their Ranking in Middle Ganga Valley and Haryana. Field Pattern, Building Materials and House types.

Note : The question paper shall contain eight questions including two questions from each section. Candidates shall attempt four questions in all selecting atleast one question from each section. All questions carry equal marks.

References

- Hudson, F.S. *Geography of settlements, Macdonald & Even, 1970.*
- Mukherji, R.K *Man and His Habitation, Popular Parkashan, Bombay, 1968.*
- Singh, R.L. & *Readings in Rural Settlements Geog.*
K.N. Singh (eds.) *NGSI, Varanasi, 1975.*
- Singh, R L. *Rural Settlements in Monsoon Asia*
NGSI, Varanasi, 1977.
- Singh, R.L. *Geographic Dimensions of Rural Settlements, NGSI, Varanasi, 1976.*
- Mitra, A. *Report on House Types and village Settlement Pattern in India, Census of India, 1966.*
- Clent, H.D. *Rural Geography, Pergamon Press, Oxford, 1972.*
- Clark, G. *"Development in Rural Geography", Area Vol. 20, No. 1, 1988 PP 35-40.*
- Ansari, S.H. *Evolution and Spatial Diffusion of Sekerwar clan Settlements in Zamania Tehsil Gazipur Distt. The Eastern Anthropologist, Vol. 33, No. 3, 1980, PP241-213*

- Ansari, S H. Evolution and Spatial Organisation of Clan Settlements concept Publishing Co. New Delhi, 1966.
- Mandal R.B. Introduction to Rural Settlements, Concept Pub. Company, New Delhi, 1978.
- Wanmali, Sudhir Service Centres in Rural India, PR Publishing Co., Delhi, 1983.
- Chisolm Michael Rural Settlements and Landuse, Hutchinson University Library, London, 1970.
- Eidr, Robert, C. et. al. Man culture and settlement, NGSi, Varanasi. 1977.
- Grover, Neelam Rural Settlements A Cultural Geographical Analysis Inter-India Publications, Delhi, 1985.
- Singh, R.B. Rajput Clan Settlements in Varanasi, Distt. NGSi, 1975.
- Singh Rana, P.B. "Morphogenesis of Rural Landscape: a case of salan Plain", in Man Culture & Settlements ed. R.D. Singh, NGSi, Pub, No. 17. 1976.
- Singh, R.Y Geography of Settlements, Rawat Publication, New Delhi.
- Mandal, R.B. Systems of Rural Settlement in Developing Countries, concept Pub. Company, New Delhi.
- Singh and Chauhan Regionalisation for Rural Development and Planning Independent Publications, 1985.
- Singh, K.N. Rural Development in India : Problems, Strategies and Approaches, Varanasi, 1985.
- Singh, R.L, et. al (ed.) Information of Rural Habitat in Indian Perspective. A Geographic Dimension, NGSi, Res, Pub. No. 19 Varanasi.

Dube, B. Geographical in Ancient India, NGSI, Varanasi, 1967. Laxminarayana Verma, Adhiwas Bhoogol (Hindi Ed.) Rajasthan Hindi Sahitya Academy, Jaipur. 1983.

Paper-IX (c) ENVIRONMENTAL GEOGRAPHY

Max. Marks : 100

Time : 3 Hrs.

Section-1. General Introduction

Meaning of Environment; Man and Environment in Geography, Ecology-From Ecology to Human Ecology.

The concept of Ecosystem : Food chain, food web, succession and Habitat: organisation and Eco-systems as Geographical Models : Evolution and Equilibrium in Eco-systems : Periodic Fluctuations in Ecosystems; Disturbed Ecosystem and the risk to health.

Section-2. Environmental Degradation

Meaning and Types of Environmental Pollution. Air, water, and Noise, Rise; in terrestrial temperature and Green House Effect; Management of Pollution problems.

Type of Ecosystem Marine Ecosystems, Stream Ecosystems and Agricultural Ecosystems;

Section-3. Environmentalism and the New World Order

Concept of sustainable Development and the question of Environmental challenges;

Free Trade and the Environmental Policies.

Section-4. Environment in the Indian Context

Trends in Environmental Degradation and Management in India (Land, Water and Air); Environmental movements and political Implications; Environmental Legislations in India (The Environment (Protection) Act 1986, The Air Prevention and control of Pollution) Act 1981, Indian Forest Act 1927 and The Forest Conservation Act, 1980.

Note : The question paper shall contain eight questions in all including two questions from each section. Candidates shall attempt four questions in all selecting at least one question from each section.

Books Recommended :

- Strahler, A.N. and A.H. Strahler, Geography and Man's Environment, New York : John Wiley, 1977.
- Goudie, Andrew. The Nature of the Environment, Oxford: Katerpring Co. Ltd., 1984.
- Holdgate, M.W., A perspective of environmental Population, Cambridge : Cambridge University Press, 1979.
- Burton, I, Kates, R.W. and White, G.F., The Environment as hazard, New York: Oxford University Press, 1978.
- Stoddart, D.R. 'Organisation and Ecosystem as Geographical models', in D.R. Stoddart, on Geography, London : Blackwell, pp 230-270.
- Stoddart, D.R., "Geography and the Ecological Approach, Geography, Vol. 50, pp. 242-251.
- Dikshit, R.D. "Geography and Teaching of the Environment : A Review and suggestion", Transactions, Institute of Indian Geographer Vol. 7, No. 2, pp. 113-123, 1985.
- Sapru, R.K. and Shyama Bhardwaj(eds.) The New Environmental Age, New Delhi Ashish Publishing House, 1990.
- Diwan, Paras and Peeyushi Diwan, Environment Administration Laws and Judicial Attitude, Vol 1 and Vol. 2, New Delhi, Deep & Deep Publications, 1992.
- Chapman, G.P. Human and Environmental Systems : a Geographer's appraisal, London : Academic Press, 1977.
- Jivendra. Water Pollution and Management, New Delhi : A.P.H. Publishing House, 1995.
- Morris, Pete and Risi Therivel, Methods of Environmental Impact Assessment. UCL Press, 1995.
- Singh, Savinder, Environmental Geography, Gorakhpur : Vasundhra Parkashan.

- Barrow, H H., "Geography as Human Ecology", *Annals Association of American Geographers*, Vol 13, pp. 1-14, 1923.
- Chorley, R.J., "Geography as Human Ecology", in R.J. Chorley (ed). *Directions in Geography*, London : Methuen, pp 115-169, 1973.
- Eyre, S.R. and G.R. J. Jones. *Geography. as Human Ecology*. London Arnold, 1966.
- Odum. H.T., "Ecological Potential and analogue circuits for the ecosystem", *American Scientist*, Vol. 18 pp 1-8, 1960.
- Bennett, R.J, and R.J Chorley. *Environmental systems : Philosophy analysis and control*. London : Methuen, 1978.
- Johnston. R.J.. *Environmental Problems: nature economy and state*, London : Behaven Press, 1989.
- Watson, R.T., *Global Biodiversity Assessment*, Cambridge University Press, 1995.
- Forman, R.T.T., *Land Mosaics : The Ecology of Landscapes and Regions*, Cambridge : Cambridge University Press, 1995.
- Robinson H., *Biogeography*, London : ELBS, 1982.
- World Resource Institute (WRI) *World Resources, WRI*, Washington D.C. (for recent years).
- World Bank, *World Development Reports, W.B.*, Washington, D.C.
- Paper-IX (d) Applied Geography Max. Marks : 100**
Time : 3 hours

Section - 1

Meaning and scope of applied Geography
Approaches to its study-some geomorphological and hydrological concepts and their application.

Section -2

Principles of rural Land Use Planning.
Land use studies in India.

Locational Theories-Von Thunen, Central place theory,
Sector theory, Multiple Nuclei theory concentric zone theory.
Local illustrations as far as possible.

Section - 3

Principles of Urban land use planning.

Town planning methods and techniques and urban renewal.

Delimitation of urban field, functional zones and urban transport.

Town Planning in India.

Section - 4

Geography of Human wellbeing, concept of quality of life
and choice of social indicators Location and allocation models
in Geography and Public policy.

Gram Swarajya, Bhoodan and Gramdan as inunciated by
Vinoba.

Note : The question paper shall contain eight questions in all
including two questions from each section. The candi-
dates shall attempt four questions in all,selecting atleast
one question from each section. All questions carry
equal marks.

Books Recommended

1. Stamp L.D., **Applied Geography**, Penguin Books,
R. 449, Middlesex, 1963.
2. Chapin, F.S. **Urban Land use planning**, 2nd edition,
University of Illinois Press, 1965,
3. Stamp, L.D. **Land of Britain, its use and misuse**,
Longmans Green & Co., Ltd., London,
1962.
4. Singh, R.L. (ed.) **Applied Geography (Proceedings of
Summer School)**. NGSF, Varansi, 1960.
5. Friedman, J & **Regional Development as a policy issue
W.A. lone, and in regional development planning.**

6. Sen Gupta, P and Sadyuk, G. Economic Regionalisation in India-problems & Approaches, census of India, 1981. Monograph series Vol. 1 No. B, 1968.
7. Singh, Savindha. Bhoo-Akriti Vigyan, (Geomorphology)
8. Pal, Ram & B.Nath, Vyovharik Bhoogol (applied geog.)
9. Mamoria C.B. Bharat ka Bhoogol Sahitya Bhawan, Agra 1988.
10. Jain J.K. & D.M. Bohra, Vyavharik Bhoogol Rajasthani Hindi Granth Academy, Jaipur, 1974.
11. White, H P. & M.I. Senior, Transport Geography, Longman, 1983.
12. M. Shafi & M.Raza(Ed.), Studies in Applied and Regional Geography. A.M.U., Aligarh, 1971.
13. Thornbury, W.D., Principles of Geomorphology, John wiley & sons, New York, Reprint, 1984.
14. Griffith, J.F., Applied Climatology, Oxford Univ, Press, London, 1968.
15. Burtelli, L.J. & et. al (ed.) Social Survey & use Planning, Social Sciences, Society of America & American, Wisconsin, 1966.
16. Laszezyski, L. (ed.) Problems of Applied Geography. II Geographica Polonica 3. Polish Scientific Publishers, Warsa, 1964.
17. Steers, J.A., Field Studies in British Isles, Thomas Nelson and Sons Ltd., London, 1965.
18. J.W. House. "Applied Geography" in Geography(Ed.) W.G.V. Balehni, Routledge & Kegan Paul, London, p. 132, 1970.
19. Mishra, V.C., N.P. Essay in Applied Geography, Univ. Avyar and P. Kumar (Ed.) Printing Press, Saugar, 1976.
20. Sant. M.: Applied Geography, Practices, Problems and Prospects, Longman, London, 1982,

21. Jain, J.K. & D.M. Bohra Vyavaharic Bhoogol, Rajasthan Hindi Granth Academy, Jaipur, 1993.
22. Sharma, R.L. Regional and Urban Planning, Kitab Ghar, Kanpur.
23. Singh, R.P. & B. Sriwastva, Applied Geography, Kitab Ghar, Kanpur.
24. D.M. Smith: Human Geography : A Welfare Approach 1977, Arnold.
25. Misra R.N. Bhoodan Movement in India: An Economic Assessment S. Chand & Co. (Pvt.) Ltd., New Delhi
26. Misra B.R. V. for Vinoba, The Economics of the Bhoodan Movement, Orient Longmen Bombay
27. Misra B.R. Bhoodan Ka Arthic Adhar Nagri Pra-charini Sabha, Varanasi.

Paper-X (Part-A) **Research Methodology** Max. Marks- 50
Time : 3 hrs.

Section-I Logic and the Methods of Science

Scientific Method-its limits and value; Hypotheses formula tion and conditions. facts, Hypotheses; classification and defini tion-sigificance. Nature and Rules. the predicables; Division and classification: Measurement purpose and formal conditions; Numerical laws and derived measurement; logical fallacies, sophistical refutations.

Section-II Sampling

The idea and advantages of sampling, sampling, and pro bability sampling distribution and standard errors, types of sampling design (random, stratified, cluster and multi stage, sampling) Determination of sample size.

Section-III Data Sources

Use of documentary sources introduction to Nature and availability of socio-economic data of India (Census, NSS Agri-cultural and Industrial Statistics, Health and Social amenities).

Section-IV Methods of Survey Research & Questionnaires.

Participant observation. Focus Group Discussion and role of narratives Questionnaire, and interview; processing of data-editing, coding and tabulation.

Note : The question paper shall contain eight questions in all including two questions on each section. Candidates shall attempt four questions in all selecting atleast one question from each section.

Books Recommended

Morris, Cohen and Earnest : **An Introduction to logic and Scientific methods**, Allied, Delhi, 1970.

Clauses, M. and G. Kelton, : **Survey Methods in Social investigation**, London, 1971.

Paulen, B. Young, : **Scientific Social Surveys and Research**, Prentice Hall, India New Delhi, 1982.

Moonis Raza, S. Naqvi and J. Dhar, : **Source of Economic Social Statistics of India**, Lureka Publication, 1978.

National Seminar on Social Statistics in India, New Delhi, 1976.
Goss, J.D. "Focus Groups as Alternatives research", Area 1996(28). 115-123.

Vandsemb, B.H. "The place of Narrative in the study of Third world Migration" The Professional Geographer, 1995 (47) : 411-425

Paper-X(b) "Remote Sensing and Its Applications in Geography"

Max. Marks : 50

Time : 3 Hours

(A) Laboratory work Test 32 marks

Section-I Photogrammetry

Historical development and applications in Geography, Aerial photographs-types, characteristics, scale and simple Geometry; photomosaics-types and uses in Geographical studies; stereoscopes, stereoscopic vision and stereoscopic parallax; Aerial camera-components and types.

Section-II Remote Sensing

Historical development and applications in Geography; Electromagnetic radiations, An ideal Remote Sensing data acquisition system; platforms-types and characteristics; Sensors-types and their specifications; Remote Sensing data products; Remote Sensing set up in India.

Section-III Photogrammetric Measurement

Base lining and orientation of stereopair; Determination of photoscale; measurement of parallax-height and length of an object; Determination of slopes and Dips; Measurement of area of different land use/land cover; preparation of stereogram and stereotriplet; Index maps.

Section-IV Image Interpretation

Basic principles and elements of image interpretation; Methods of analysis-visual and Digital; Basic equipment used for image interpretation; Interpretation Key; Interpretation of Aerial photos and Satellite imageries for natural and/Regional studies, Terrain evaluation-study of land forms structure and Ground water potential.

| | |
|------------------------|----|
| (b) Record on Lab work | 10 |
| (c) Viva-voce | 08 |

Note :

1. Exercise shall be prepared depending on the availability of data and equipment.
2. The question paper shall contain eight questions in all, including two questions from each section. Candidate shall attempt four questions in all, selecting atleast one question from each section.
3. The department shall arrange a tour programme for field study and to visit different Remote Sensing institutes/Organisations on demand, if any, from the students. The tour shall be conducted under the supervision of teachers as per University rules and expenses shall be borne by the students.

Books Recommended

Wolf, P.R, Elements of photogrammetry, Mc Graw Hill.

- Hellert, B. **Photogrammetry, Mc Graw Hill**
- Kumar G S. **Aerial photographs,**
- Robert G. Reaves et al, ed. **Manual of Remote Sensing, Vol. I & II**
American Society of photogrammetry,
Falls Church USA-1981 Fourth ed)
- Ray Harris : **Statellite Remote Sensing An Intro-**
duction. Routledge & Kegan Paul,
London and New York.
- Curran, P.S. : **Principles of Remote Sensing.** Long-
man Scientific & Technical, London.
- Sabins, F.F. **Remote Sensing-Principles and interpre-**
tation. W.H. Freedom & Co. 1986 Second
ed.
- Lilles T.M. and Kiefer, R W. **Remote Sensing and image interpretation**
John Wiley and Sons, New York.
- LO C.P. : **Geographical Applications of Aerial**
Photography, Clame Russak, New York.
- Deekshatulu, B.L. & Raja, Y.S. **Remote Sensing,** Indian Academy of
Science. Banglore.