DEPARTMENT OF GEOGRAPHY

University College of Social Sciences & Humanities
Mohanlal Sukhadia University, Udaipur, Raj. - 313001

Proposed Scheme of Courses in Geography
M. A. /M. Sc. Geography: Semester wise 2015-16

M. A. / M. Sc. - Ist Semester:

Paper I : Geographical Thoughts
Paper II : Geomorphology
Paper III : Economic Geography
Paper IV : Climatology and Oceanography
Practical – I : Surveying & Leveling
Practical – II : Air-Photo Interpretation

M. A. / M. Sc -IInd Semester

Paper I : Geography of India & Rajasthan
Paper II : Geography of Resources
Paper III : Regional Development and Planning
Paper IV : Political Geography
Practical – I : Advanced Cartography
Practical – II : Basics of Remote Sensing and Image Interpretation

M. A. / M. Sc -IIIrd Semester

Paper I : Geographical Research Methodology
Paper II : Agricultural Geography
Paper III : Urban Geography & Planning
Paper IV **: Elective: Any one of the following**
IV A. : Transport Geography
IV B. : Rural Development & Planning
IV C. : Cultural Geography
IV D. : Bio Geography
IV E. : World Regional Geography
Practical – I : Basics of Geographical Information System
Practical – II : I Field Studies- Socio-Economic Survey Project Report
II. Field Visit

M. A. / M. Sc --IVth Semester

Paper I : Environmental Geography
Paper II : Quantitative Methods in Geography
Paper III : Industrial Geography
Paper IV : **Elective: Any one of the following**
IV A. : Population and Settlement Geography
IV B. : Geography of SAARC Countries
IV C. : Geography of TSP Region
IV D : Social Geography
IV E : Geography of Tourism
Practical - I : Digital Cartography &Model Making
Practical - II : Geographical Techniques for Applied Geographical Research

Appendix-A

Mohanlal Sukhadia University, Udaipur
Master of Arts / Master of Science in Geography
2015-2016

Duration of the course:

The Master of Arts/Science, Geography course will be of four-semester duration to be conducted in two years. Each semester will be of approximately five months duration.

Course Structure:

Paper No.	Paper Code	Paper Nomenclature	L-T-P	Max. Marks		
				Ext.	Int.	Total
SEMESTER-I						
I	41361	Geographical thoughts	3-1-0	80	20	100
II	41362	Geomorphology	3-1-0	80	20	100
III	41363	Economic Geography	3-1-0	80	20	100
IV	41364	Climatology and Oceanography	3-1-0	80	20	100
V	41365A	Surveying & Leveling	3-0-3	-	-	100
VI	41365B	Air Photo interpretation	3-0-3	-	-	100
		Total	18-4-6	320	80	600
SEMESTER-II						
I	42361	Geography of India & Rajasthan	3-1-0	80	20	100
II	42362	Geography of Resource	3-1-0	80	20	100
III	42363	Regional development and planning	3-1-0	80	20	100
IV	42364	Political geography	3-1-0	80	20	100
V	42365A	Advanced Cartography	3-0-3	-	-	100
VI	42365B	Basic of remote Sensing & Image Interpretation	3-0-3	-	-	100
		Total	18-4-6	320	80	600

SEMESTER-III						
I	43361	Geographical Research Methodology	3-1-0	80	20	100
II	43362	Agriculture Geography	3-1-0	80	20	100
III	43363	Urban Geography & Planning	3-1-0	80	20	100
IV		Elective (Any one of the following)				
IV A	43364A	Transport Geography	3-1-0	80	20	100
IV B	43364B	Rural development and planning	3-1-0	80	20	100
IV C	43364C	Cultural Geography	3-1-0	80	20	100
IV D	43364D	Bio Geography	3-1-0	80	20	100
IV E	43364E	World Regional Geography	3-1-0	80	20	100
V	43365A	Basic of Geographical Information System	3-0-3	-	-	100
VI	43365B	Socio-economic survey project report	3-0-3	-	-	100
		Total	18-4-6	320	80	600
SEMESTER-IV						
I	44361	Environment Geography	3-1-0	80	20	100
II	44362	Quantitative Methods in Geography	3-1-0	80	20	100
III	44363	Industrial geography	3-1-0	80	20	100
		Elective (Any one of the following)				
IV A	44364A	Population and settlement geography	3-1-0	80	20	100
IV B	44364B	Geography of SAARC Countries	3-1-0	80	20	100
IV C	44364C	Geography of TSP Region	3-1-0	80	20	100
IV D	44364D	Social Geography	3-1-0	80	20	100
IV E	44364E	Geography of Tourism	3-1-0	80	20	100

V	44365A	Digital Cartography & Model making	3-0-3	-	-	100
VI	44365B	Geographical Techniques for Applied Geographical Research	3-0-3	-	-	100
		Total	18-4-6	320	80	600
		Grand Total	72-16-24	1280	320	2400

Notes:

1. There will be four theory papers of 100 marks each and two practical courses of 100 marks in each semester.
2. Use of map stencils (outline of political boundaries only), Log Tables and simple function calculators are allowed in the examination.
3. There will be 16 hours theory teaching per week and 12 hours practical teaching per week. Each practical batch will comprise of 20 students.
4. A common Practical Test Paper of three hours duration will be held along with the main theory examination.
5. The Practical Test Paper will be set and evaluated by External Examiner in the line of theory papers.
6. **MA Semester I & III--**The practical exercises, record work and viva-voce examination shall be conducted by internal examiner.
7. **MA Semster II & IV --**The practical exercises, record work and viva-voce examination shall be conducted by an external examiner in consultation with the internal examiner.
8. Candidate will have to select any one of the Specialization Elective Papers IV accordingly will choose in Third and Fourth Semesters.
9. A student who obtain 55% marks (SC/ST 50% marks) in the aggregate one semester completion of all the courses prescribe in MA/MSc I & II semester may be permitted to work on dissertation in lieu of one optional theory paper of IV semester. The topic and the synopsis of the work are to be got approved by the departmental committee.
10. Practical - one batch 20 students.

Special notes with regard to for M. A. IV th Sem.Examinations:

i. A student who obtained 55 per cent marks in the aggregate on successful completion of all the courses prescribed in M. A. I&II Sem.may be permitted to work on dissertation in lieu of any one of the optional papers of M. A. IVth SeM.
ii. The topic and the synopsis of the work are to be got approved by the Departmental Committee.

Scheme of instruction:

Each semester will be of five months (60 hours Lecture) duration. Instruction in each paper is divided into Lectures and Tutorials. Practical instructions are also added to the papers were separate Lab works are not assigned so that Lab assignments required in that paper can be carried out in the Lab.

a) **Tutorials:** Tutorials will be conducted for the following
   a. To give class room instructions in topics already covered in lectures but students require detailed explanation/examples.
   b. Working out problems, program, demonstration etc. to make students understand the topics.
   c. Quiz to get feedback on understandings of the students in a topic.

b) **Practical:** Students are expected to work in the laboratory for 12hrs / week carrying out practical assignments in each Semster . Faculty guidance will be available as per practical hours allotted for each paper.

Assignments: Teachers will give regular assignments to the students to assess in the topics. Students will be required to complete the same within the stipulated period.

Attendance: Regular attendance of the student is an important factor in the semester system. No candidate will be allowed to appear in the End Semester Examination as a regular student unless he/she has attended the course regularly as per university rules

Theory paper –Each theory paper will be of **80 marks** with minimum pass marks of 29.

Sections	Questions		Marks	Distribution of Questions
	To be Asked	To be Attemptd		
A. Very Short (Objective/20 Words Answers)	10	10	20	Proportionately from each Unit with internal choice
B. Short Answers (250 words)	10	5	30	
C. Analytic/Descriptive Answers (300 words)	5	2	30	
Total	25	17	80	

Internal assessment – Each theory paper **20 marks.**

Test paper – 10 marks, asked four questions and attempt two questions.
Assignment – 5 marks.
Seminar (Presentation) – 5 marks

M.A./M.Sc. Geography
First Semester
Paper – I (41361) Geographical Thoughts

Unit – I

a) Definition, Philosophy and nature of geography
b) Scope and Contents of Geography
c) Detailed study of Greek and Roman scholars
d) Nature of Geographical Thoughts in Ancient India

Unit – II

a) Geographical knowledge during the Ancient & medieval period
b) Dark age of Geography
c) The Arabic period
d) Contribution of Varenius and Kant

Unit – III

a) Main characteristics of German school of thoughts- Contribution of Alexander von Humbolt
b) Contribution of Carl Ritter & Ratzel
c) Main characteristics of French school of thought-Contributions of Paul Vidal de la Blache
d) Contribution of Jean Brunhes

Unit – IV

Main characteristics of American school of thoughts-
a) Contribution of W. M. Davis
b) Contribution of Carl O. Sauer
c) Main characteristics of British school of thoughts
d) Changing methods & Technique in Geography.

Unit – V

a) Environmental determinism, possibilism and neo-determinism
b) Concept of Region, , Study of aerial differentiation,
c) Dichotomies in geography, Systematic and Regional, &Qualitative and Quantitative geography
d) Impact of Positivism, Humanism, Radicalism & Behaiouralism in Geography.

References:

1. Abler, Ronald F. et al, Geography's Inner Worlds: Pervasive Themes in Contemporary American Geography, Routledge, New Jersey, 1992
2. Ali, S. M., Arab Geographers, Institute of Islamic Studies
3. Ali. S. M., The Geography of Puranas, People's Publishing House, New Delhi
4. Chatterjee, S. P., Fifty Years of Geography in India, Indian Science Congress, New Delhi
5. Dickinson, R. and O. J. R. Howarth, Making of Geography, Calarendon Press
6. Dickinson, R. E., The Makers of Modern Geography, Routledge and Kegan Paul, London, 1969
7. Dikshit R. D., Geographical Thought: A Contextual History of Ideas, Prentice Hall of India Pvt. Ltd. 2000
8. Dikshit R. D., The Art and Science of Geography: Integrated Readings, Prentice Hall of India, New Delhi, 1994
9. Dohrs, F. E. and Sommers, L. W. (eds.) Introduction to Geography, Thomas Y. Crowell Co., New York, 1967

10. Fischer, E. et al, A Question of Place: The Development of Geographic Thought, R.V. Beatty Ltd., Arlington, 196
11. Freeman, T. W., Hundred Years of Geography, Gerald Duck-Worth & Co
12. Fuson, R. H., A Geography of Geography: Origins and Development of the Discipline, W. M. C. Brown Company
13. Gregory, D., Ideology, Science and Human Geography, Hutchinson, London, 1978
14. Gregory, D., Geographical Imaginations, Blackwell, Oxford, 1994
15. Hartshorne, Richard, The Nature of Geography, Association of American Geographers, Lancaster, Pennsylvania, 1939
16. Hartshorne, Richard, Perspective on the Nature of Geography, Rand McNally and Co., Chicago, 1959
17. Harvey, David, Explanation in Geography, Edward Arnold, London, 1969
18. Harvey, M. E. and B. P. Holly (eds.), Themes in Geographic Thought, Rawat Publications, Jaipur, 1999
19. Holt-Jensen, A., Geography: Its History and Concepts, Longmans, 1980
20. Husain, Majid, Evolution of Geographical Thought, Rawat Publications, Jaipur, 1984
21. James, P. E. and C. F. Jones, American Geography: Inventory and Prospects, Syracuse University Press
22. James, P. E., All Possible Worlds: A History of Geographical Ideas, Sachin Publication, Jaipur, 1980
23. Jensen, A. H., Geography: Its History and Concepts, Harper & Row
24. Johnston, R. J., Philosophy and Human Geography: An Introduction to Contemporary Approaches, Edward Arnold, London, 1983
25. Johnston, R. J. and R. Claval (eds.), Geography Since the Second World War, Croom Heim, London/Bernes and Noble, N. J., 1984
26. Johnston, R. J., Geography and Geographers: Anglo-American Geography Since 1945, Edward Arnold (Publishers) Ltd., London, 1983
27. Jones, P.A., Field Work in Geography, Longmans, 1968
28. Kothari, C. R., Research Methodology, Methods and Techniques, Wiley Eastern Ltd., New Delhi
29. Ley, D. and M. Samuels (eds.), Humanistic Geography: Prospects and Problems, Maarouffa, Press, Chicago, 1978
30. Livingstone, D. N., The Geographical Tradition, Blackwell, Oxford, 1992
31. Lownsburg, J. F. and F. T. Aldrich, Introduction to Geographical Methods and Techniques, Charles Marrill, Columbus, 1979
32. Mandal, R. B. and V. N. P. Sinha, Recent Trends and Concepts in Geography (three volumes), Concept Publishing Company, New Delhi
33. Minshull, R., The Changing Nature of Geography, Hutchinson University Library, London, 1970
34. Mishra, R. P., Contributions to Indian Geography, Heritage Publishers, New Delhi.
35. Peet, R., Modern Geographical Thought, Blackwell, Oxford. 1998
36. Prasad, H., Research Methods and Techniques in Geography, Rawat Publications, Jaipur
37. Preston James, All Possible Worlds: A History of Geographical Ideas, John Wiley & Sons, New York, 1981
38. Raza, Moonis, A Survey of Research in Geography, ICSSR, New Delhi.
39. Soja, E. W., Postmodern Geographies: The Resurrection of Space in Critical Social Theory, Verso, London, 1985.
40. Stoddart, D. R. (ed.), Geography, Ideology and Social Concern, Blackwell, Oxford, 1981
41. Wooldridge, S. W. and E. G. East, The Spirit and Purpose of Geography, Hutchinson University Library, London, 1951
42. Wooldridge, S. W., The Geographer as Scientist, Thomas Nelson and Sons. Ltd., London, 1956
43. जैन, एस.एम. : भौगोलिक चिन्तन का विकास (साहित्य भवन, आगरा)
44. कौषिक, एस. डी. : भौगोलिक विचारधारा एवं विधि तंत्र (रस्तोगी प्रकाषन, मेरठ)
45. माथुर एवं जोषी : भौगोलिक विचारधाराओं का इतिहास (आर.बी.एस. पब्लिषर्स,जयपुर)

46. सिंह, जे. : भौगोलिक चिन्तन के मूलाधार (वसुन्धरा प्रकाषन, नई दिल्ली)
47. सिंह, यू. : भौगोलिक चिन्तन का विकास (कल्याणी पब्लिषर्स, नई दिल्ली)
48. वर्मा एल. एन. : भौगोलिक विचारधाराएँ (राज. हिन्दी ग्रंथ अकादमी, जयपुर)
49. रमेष दत दीक्षित : भौगोलिक चिन्तन का विकास (प्रिन्टिस हाल ऑफ इण्डिया प्राइवेट लिमिटेड, नई दिल्ली)

M.A. /M.Sc. Geography
First Semester
Paper – II (41362) Geomorphology

Unit – I

a) Development in geomorphology
b) Concept & Scope of Geomorphology
c) The solar system, views of james jeans, hoyal and bigbang theory
d) Development of slopes: approaches to the study of slopes; views of W. Penck, A. Wood and A. N. Strahler

Unit – II

a) Isostasy: concept and Theories Continental Drift Theory and Plate tectonic theories
b) Theories of Mountain building
c) Processes: Weathering Types of weathering
d) Processes: Cycle of Erosion, Views of Davis and Penk

Unit – III

a) Geomorphic processes and landforms – fluvial
b) Geomorphic processes and landforms – glacial and fluvio-glacial
c) River forms and processes – stream flow, hydrographs and flood frequency analysis
d) Geomorphic processes and landforms – eolian

Unit – IV

a) Geomorphic processes and landforms – coastal
b) Geomorphic processes and landforms – karst
c) Submarine relief
d) Geomorphometry: Geomorphology and topographic analysis

Unit – V

a) Extra-terrestrial geomorphology
b) Environmental change – causes, effects on processes and landforms
c) Soil processes and conservation
d) Dams and reservoirs: geomorphic consideration and environmental impact

References:

1. Dayal, P., A Text Book of Geomorphology, Shukla Book Depot, Patna, 1996
2. Dury, G. H., The Face of the Earth, Penguins, 1980
3. Ernst, W.G., Earth Systems: Process and Issues, Cambridge University Press 2000
4. Hugget, Richard, Fundamentals of Geomorphology, Routledge, Taylor & Francis Group, New York, 2007
5. ICSSR, A Survey of Research in Physical Geography, Concept, New Delhi, 1983
6. Kale, V. and A. Gupta, Elements of Geomorphology, Oxford University Press, Calcutta, 2001
7. King, C. A. M., Beaches and Coasts, E. Arnold, London, 1972
8. Leopold, L. B. et al, Fluvial Processes in Geography, Eurasia Publishing House, New Delhi

9. Pike, R.J., I.S. Evans and T. Hengl, Geomorphometry: A Brief Guide, Developments in Soil Science, Volume 33, Elsevier B.V., 2009
10. Pitty, A., Introduction to Geomorphology, Methuen, London, 1974
11. Ritter, D.F., R.C. Kochel and J.R. Miller, Process Geomorphology, 4th edition, McGraw Hill, New York, 2002
12. Sharma, H. S., Tropical Geomorphology, Concept, New Delhi, 1987
13. Shepard, F. P., Submarine Geology, Harper & Sons, New York, 1948
14. Singh, S., Geomorphology, Prayag Pustakalaya, Allahabad, 1998
15. Small, R. J., The Study of Landforms, McGraw Hill, New York, 1985
16. Sparks, B. W., Geomorphology, Longmans, London, 1960
17. Strahler, A. H., Introducing Physical Geography, 5th Edition, John Wiley & Sons, 2009
18. Summerfield, M. A., Global Geomorphology, Longman, 1991
19. Thornbury, W. D., Principles of Geomorphology, Wiley Eastern, l969

M.A./M.Sc. Geography
First Semester
Paper – III (41363) Economic Geography

Unit –I

a) Definitions , Aims and Scope of Economic Geography
b) Approaches and Recent Trends in Economic Geography
c) Classification of Economies – Sectors of Economy, Primary Secondary, Tertiary & Quaternary occupations
d) Relationship between economic activities & environment

Unit –II

a) Location – Importance ,Chirsteller – Central Place Theory
b) Movement & Interaction in the simplified and heterogeneous economic landscape
c) Significance &Elements of Production Cost – Raw materials, Labour, Capital, Technical Knowledge –Spatial variation in Production costs& locational impact
d) Spatial Variation in transportation Cost-location & Structure of transport cost, factors affecting the transportation cost

Unit- III

a) World Agricultural Regionalization – Whittlesey's classification of Agricultural region
b) Subsistence Intensive Agriculture
c) Mediterranean Agriculture & Tropical Plantation
d) Commercial grain farming and Coen region of USA

Unit – IV

a) Major Industrial regions of the World : Study of Great lake industrial region of USA
b) Study of Ruhr Industrial region
c) Study of Industrial region of Ukraine
d) Study of Industrial belt of Japan

Unit - V

a) Means of transportation : Factors affecting the choice of particular means of Transport
b) World pattern of water transportation& Trade : Oceanic Transport routes
c) International trade : Types of trade
d) Economic region of the world

References:

1. Alexander, J. W., Economic Geography, Prentice Hall of India, New Delhi
2. Alien, S. W. and Leonard, J. W., Conserving Natural Resources, McGraw Hill
3. Bengston, N. A. and M. W. Royen, Fundamentals of Economic Geography, Prentice Hall
4. Berry J. L. Geography of Market Centres and Retail Distributions, Prentice Hall, New York, 1967
5. Berry, B. J. L., et al, D.M, Economic Geography, Prentice Hall
6. Boesch, H., A Geography of World Economy, D. Van, Nostrand
7. Chatterjee, S. R, Economic Geography of Asia, Allied Book Agency, Calcutta, 1984
8. Chisholm, M., Geography and Economy, G. Bell, London
9. Chorley, R. J. and P. Haggett (ed.), Network Analysis in Geography, Arnold, 1969
10. Chorley, R. J., Water, Earth and Man, Methuen
11. Dreze, J. and A. Sen, India: Economic Development and Social Opportunity, Oxford University Press, New Delhi, 1996
12. Eckarsley, R. (ed.), Markets, the State and the Environment, McMillan, London, 1995
13. Garnier. B. J. and A. Delobez, A Geography of Marketing, Longman, London, 1979
14. Guha and Chatterjee, A New Approach to Economic Geography of Resources
15. Hamilton, F. E. I. (ed.), Resources and Industry, Oxford University Press, New York, 1992
16. Hamilton, F. E. I., Spatial Perspectives on Industrial Organisation and Decision Making, John Wiley, New York, 1974
17. Hurst, E., Transport Geography: Comments and Readings, McGraw Hill, New York, 1974
18. Janaki, V. A., Economic Geography, Concept Publishing Co., New Delhi
19. Jarret, H. R., A Geography of Manufacturing, MacDonald & Evans
20. Jones, G. G. and C. F. Darkenwald, Economic Geography, Mac Milan
21. Learmonth, T. A., Mysore State: Regional Synthesis, Asia Pub. House
22. Lloyd, P. and P. Dicken, Location in Space: A Theoretical Approach to Economic Geography, Harper and Row
23. Me-Carty, M. H. and J. B. Luidberg, A Preface to Economic Geography, Prentice Hall
24. Morgan, W. B. and R. J. C. Munton, Agricultural Geography, Methuen, London, 1977
25. Pachuri, R. K., Energy and Economic Development in India, Praeger, New York, 1977
26. Paterson, J. H., Land Work and Resources: An Introduction to Economic Geography, Arnold
27. Robertson, D. (ed.), Globalisation and Environment, E. Elgar Co., U.K., 2001.
28. Robinson, H., Economic Geography, MacDonald and Evans
29. Rostow, W. W., The Stages of Economic Growth, Cambridge University Press, London, 1960
30. Singh J. and S. S. Dhillon, Agricultural Geography, McGraw Hill, India, New Delhi, 1984
31. Singh, G., Economic and Commercial Geography, Manol Talao
32. Symons. L, Agricultural Geography, Bell and Sons, London, 1972
33. Thomas, R. S., The Geography of Economic Activity, McGraw Hill, New York.
34. Wheeler, J. 0. et al, Economic Geography, John Wiley, New York, 1995
35. Whitbeck, R. S. and Finch, V. L., Economic Geography, McGraw Hill, New York
36. Zimmermann, E. W., World Resources and Industries, Harber
37. श्रीवास्तव, वी. के. एवं राव, बी. पी. : आर्थिक भूगोल के मूल तत्व (वसुन्धरा प्रकाषन, गोरखपुर)
38. जैन, हरकचन्द : सैद्वान्तिक आर्थिक भूगोल (कमलेष प्रकाषन, भीलवाडा)
39. रजा, एम. एवं सिंह, ए. : संसाधन भूगोल
40. नैगी, बी. एस. : संसाधन भूगोल
41. सिंह एवं सिंह : आर्थिक और संसाधन भूगोल

M.A./M.Sc. Geography
First semester
Paper IV (41364) Climatology and Oceanography

Unit I:

Basic Concepts and Atmospheric Phenomenon

a) Nature and scope of Climatology
b) Composition and layered structure of the atmosphere
c) Insolation; Energy balance of the Earth; horizontal and vertical distribution of temperature
d) Atmospheric pressure and pressure belts; Forces controlling motion of air

Unit II:

Atmospheric Circulation

a) Basic Positional Astronomy: Motion of the earth – rotation , revolution, Earth inclination, diumal cycle, equinoxes and solstices, Northword and southward march of the sun.
b) Planetary winds; Jet Streams; Monsoons
c) Atmospheric Humidity–process and forms of precipitation: types of rainfall; world distributation of rainfall.
d) Air masses and fronts; Tropical and Temperate cyclones

Unit III:

Climate Types and Climate Change

a) Approaches to classification of world climates; Koppen's and Thornthwaite's classifications
b) Major climates of the world: Characteristics of Equatorial, Tropical Monsoon, Savanna, Hot Desert, Mediterranean and Mountain type of climate
c) Ocean atmosphere interaction: El Nino- La Nina; Walker's Circulation & El Nino Southern Oscillation (ENSO)
d) Ozone depletion; Green house effect; Global warming

Unit IV:

Oceans-Physical Characteristics

a) Nature and scope of Oceanography
b) Ocean bottom relief; Relief of Indian and Atlantic oceans
c) Ocean temperature and salinity: factors and distribution patterns
d) Ocean deposits; Coral reefs: Types and theories of formation

Unit V:

Dynamics of Ocean Water and Human-marine Interface

a) Tides :Types, Theories of origin of tides
b) Ocean currents: Currents of Indian, Atlantic and Pacific ocean
c) Marine resources: Food, mineral and energy resources
d) Sea level changes; Human impact on marine communities

References:-

1. Barry, R.G. and Chorley P.J., 1998. Atmosphere, Weather and Climate. Routledge, London and New York.

2. Chorley, R.J., 1995: Atmosphere, Weather and Climate. Methuen, London.
3. Critchfield, H.J., 1983. General Climatology, Prentice -Hall of India, New Delhi
4. Das, P.K., 2013. The Monsoons, National Book Trust, New Delhi.
5. Garrison, Tom, 2014. Essentials of Oceanography, Cengage Learning, Canada
6. Gerald S., 1980. General Oceanography: An Introduction, John Wiley & Sons
7. Glantz, M.H., 2001. Currents of Change: Impacts of El Nino and La Nina on Climate and Society, Cambridge University Press, Cambridge
8. Gross M. Grant, 1987. Oceanography: A View of the Earth, 4th Ed., Prentice Hall Inc., New Jersey.
9. King, C.A.M., 1962. Oceanography for Geographers, Edward Arnold, London.
10. Lal, D.S., 2011. Climatology and Oceanography, Sharda Pustak Bhawan, Allahabad
11. Oliver, J.E. and Hidore, J.J., 2011. Climatology: An Atmospheric Science, Dorling Kindersky India Pvt. Ltd, Licensees of Pearson Education in South Asia, New Delhi
12. Robinson, P.J. and Henderson, S., 1999. Contemporary Climatology, Henlow
13. Sharma, R.C. and Vatal, M., 1999. Oceanography for Geographers, Chaitanya Publishing House, Allahabad.
14. Siddartha, K., 2000. Atmosphere, Weather and Climate, Kisalaya Publications Pvt. Limited, New Delhi
15. Siddartha, K., 2000. Oceanography: A Brief Introduction, Kisalaya Publications Pvt. Limited, New Delhi
16. Singh Savindra, 2007. Climatology, Prayag Pustak Bhawan, Allahabad
17. Singh Savindra, 2008. Oceanography, Prayag Pustak Bhawan, Allahabad
18. Thurman, Harold V. & Trujillo, Alan P., 2004. Introductory Oceanography, Prentice Hall
19. Trewartha, G.T. and Horn, L.H., 1980. An Introduction to Climate, International Students' Edition, McGraw Hill, New Delhi
20. Ummerkutty, A.N.P., 1985. Science of the Oceans and Human Life, National Book Trust, New Delhi

HINDI BOOKS

1. Banerjee R.C. and Upadhyaya D.S., 1978. Mausam Vigyan, Rajasthan Hindi Granth Academy, Jaipur
2. Bansal, S.C., 2006. Jalvayu tatha Samudra Vigyan, Kedar Nath Ram Nath & Co., Meerut
3. Gupta L. S., 2000. Jalvayu Vigyan**,** Hindi Madhyam Karyanvay Nidishalya, Delhi Vishwa Vidhyalaya, Delhi
4. Lal, D S , 2006. Jalvayu Vigyan , Prayag Pustak Bhavan, Allahabad
5. Negi B.C., 2003. Jalvayu Vigyan tatha Samudra Vigyan**,** Kedar Nath Ram Nath & Co., Meerut
6. Singh Savindra, 2006. Jalvayu Vigyan Prayag Pustak Bhawan, Allahabad
7. Singh Savindra, Samudra Vigyan**,** Prayag Pustak Bhawan, Allahabad
8. Vatal, M.,1986. Bhautik Bhugol, Central Book Depot, Allahabad
9. नेगी, बी. सी.: जलवायु विज्ञान तथा समुद्र विज्ञान, केदारनाथ रामनाथ, मेरठ
10. बनर्जी, आर.सी. एवं उपाध्याय, डी.एस : मौसम विज्ञान (राजस्थान हिन्दी ग्रन्थ अकादमी, जयपुर)

M.A./M.Sc. Geography
First Semester
Practical- I (41365 A) Survey and Leveling

Unit – I

a) Surveying as an art and science, Principles of surveying
b) General errors and inaccuracies in surveying
c) Precautions in using survey instruments
d) Trignometrical methods of solution of triangles and computation of lengths

Unit – II Plane table

a) Use of Plane table in composite surveys and related methods, methods of resectioning
b) General planning of large area plane surveys
c) A composite survey of college campus or village/neighbourhood
d) Drawing of control points and surveyed plan

Unit – III Theodolite and Tacheometer:

a) Theodolite as an instrument of surveying and leveling, adjustment of Theodolite
b) Computation of Theodolite bearings
c) Computation of length of triangles and plotting of control points
d) Telemetry: stadia and tangential

Unit – IV Clinometer

a) Use of Clinometer as instrument of leveling
b) Measuring spot heights
c) Contouring and interpolation of contours
d) Drawing of profiles

Unit – V Dumpy level:

a) Use of Dumpy level as an instrument of leveling and adjustment of the dumpy level
b) Principles: Calculation of difference of level, series leveling, back sights, foresights, intermediate sights
c) Level book and computation of reduced level: Rise and fall and collimation method
d) Plotting of profiles

Note:

1. Candidates will submit following exercise as record work:
   i. Resectioning: 3 exercises of geographical methods of Llano's, Bessel's and trial and error
   ii. Profiles: 2 exercises based on leveling measurements obtained with dumpy level
   iii. Contouring: 1 exercise based on leveling measurements obtained with dumpy level
   iv. Contouring: 1 exercise based on leveling measurements obtained with clinometers
   v. Measuring and plotting reduced levels using tacheometer: 2 exercises
   vi. Triangulation survey based on a minimum of 15 control points using theodolite: 2 exercises including one related to composite survey

vii. Plan of un-surveyed campus/neighbourhood/village area based on composite survey: 1 exercise (10 day's camp)

viii. Thematic maps showing characteristics of the surveyed area: form of built-up area, and building material: 6 exercises

2. All exercises will be based on surveying and leveling work done by the candidates themselves for areas hitherto un-surveyed

References:

1. Clark, D., Plane and Geodetic Surveying, Constable
2. Davis, R. E. and F. S. Foot, Surveying: Theory and Practice, McGraw Hill
3. Hinks, H.R., Map and Survey, Cambridge
4. Kanetkar, T. P., Surveying and leveling, Volume I & II, A. U. Grah Prakashan
5. Kiley, P. T., Surveying and leveling, Volume I & II, A. U. Grah Prakashan
6. Survey Manual, Volume I-VIII, Survey of India
7. Williamson, J. T., Surveying and Field Work, Constable

Distribution of Marks **Total Marks 100**

A Part –Practical paper of three hours duration will be held along with main theory paper examination. (40 marks)

Section – A Objective type 5 marks. Asked 10 questions, attempt all questions.

Section – B Short Answers – 20 marks, Asked 10 questions, one question from each unit and attempt five questions.

Section-C Descriptive type-15 marks ,Asked 5 questions, one question from each unit and attempt two questions

Practical – Assessed by Internal Examiner

B Part- Surveying –**Practical Exam** (60 marks)

A - Test paper Survey exercise – 30 marks, Working on each instruments with following distribution of marks:

Instrument	**Exercise**	**Marks**	**Time (minute)**
A. Plane Table	Resectioning	10	35
B. Theodolite	Measurement of angle between two points	5	10
C. Dumpy Level	Measuring level difference between two distant points	5	10
D. Clinometer	Measuring heights of and level difference between two distant points	5	10
E. Tacheometer	Measuring distance of any distant point	5	10

B - Record work – 20 marks

C - Viva-voce – 10 marks

M.A./M.Sc. Geography
First Semester
Practical -II (41365 B) Air photo Interpretations

Unit – I

a) Definition,
b) Scope
c) Development of aerial photography
d) interpretation techniques

Unit – II

Types and quality of aerial photographs

a) Types of aerial photographs
b) Factors affecting quality of aerial photographs
c) Aerial photographs versus maps
d) Usages of Aerial Photographs in interdisciplinary research

Unit – III

Tools and geometry of air photography and interpretation:

a) Pocket stereoscope and mirror stereoscope
b) Aerial camera, lens and filters
c) Geometry of aerial photographs
d) Stereogram, stereo triplet and mosaic

Unit – IV

Basic air photo measurements:

a) Photographic scale
b) Measuring height of object
c) Calculation of area, number of strips and number of air photos
d) Measuring angles, direction and slope measurement

Unit – V

a) Elements of object identification,
b) Interpretation and mapping of natural landscapes
c) Interpretation and mapping of cultural landscapes
d) field checking

Practical Exercises Practical Exercises

Practical Exercises

Notes:

Students are required to perform one experiment from each unit during examination.

1) Stereo test
2) Orientation of stereo model under mirror stereoscope (1 Exercises)
3) Calculate the Photo base,& flight line. (2 Exercises)
4) Determination of photo/image scale (1Exercises)
5) Determination of heights using single photograph (1Exercises)
6) Objects Identification by Pocket Stereograph (1 Exercises)

7) Interpretation and mapping of natural landscapes :physical aspects, drainage patterns, river basins, and vegetation (8 Exercises)
8) interpretation and mapping of cultural landscapes: land Use, Agricultural Utilisation, field patterns, cultural aspects, settlements and transportation lines (8 Exercises)

One local field trip will be conducted for field verification of aerial photographs of Udaipur city and nearby areas. Students will be required to prepare a Field Report and submit along with the Record Work.

References:

1. American Society of photogrammetry: Manual of remote sensing, ASP, Falls Church, VA, 1983
2. Avery, T. E., Interpretation of Aerial Photographs, Burges
3. Barrett, E. C. and L. F. Curtis, Fundamentals of Remote Sensing and Air Photo Interpretation, Macmillan, New York, 1992
4. Compbell, J., Introduction to Remote Sensing, Guilford, New York, 1989
5. Curran, Paul J., Principles of Remote Sensing, Longman, London, 1985
6. Hord, R. M., Digital Image Processing of Remotely Sensed Data, Academic, New York, 1989
7. Kennie and Methue, Remote Sensing in Civil Engineering Survey, University Press, London
8. Luder, D., Aerial Photograph Interpretation: Principles and Applications, McGraw Hill, New York, 1959
9. Plates, J. E. and L. W. Snagery, remote Sensing Techniques for Analysis, Hamilton Publishing Company
10. Robert, G. Reeves et al, Manual of Remote Sensing, Volume I & II
11. Smith, H. T. V., Aerial Photographs and their Applications, Appleton Century Crofts
12. Spurr, S. H., Photogrammetry and Photo Interpretation, Ronald Press
13. Talbut, A. Essentials of Aerial Surveying and Photo Interpretation
14. Thomas, M. Lillesand and Ralf W. Kefer, Remote Sensing and Image Interpretation, John Wiley and Sons, New York, 1994
15. Tomar, M. S. and A. R. Maslekar, Aerial Photographs in Land use and Forest Surveys, Kishore and Company, Dehradun

Distribution of Marks **Total Marks 100**

A Part –Practical paper of three hours duration will be held along with main theory paper examination. (40 marks)

Section – A	Objective type 5 marks. Asked 10 questions, attempt all questions.
Section – B	Short Answers – 20 marks, Asked 10 questions, one question from each unit and attempt five questions.
Section-C	Descriptive type-15 marks ,Asked 5 questions, one question from each unit and attempt two questions

Practical – Assessed by Internal Examiner

Part B- Air photo Interpretation 60 marks

A.- Test paper Lab exercise – 35 marks (25+10),

i. Practical exercise shall be of three hours duration and of 25 marks and candidates will be required to attempt any 2 exercises out of 4.
ii. The identification of objects (at least 10) on the air photo pairs shall be of 30 minutes duration and will carry 10 marks

B -Record work – 15 marks

C -Viva-voce – 10 marks

M.A./M.Sc. Geography
Second Semester
Paper – I (42361) Geography Of India And Rajasthan

Unit I: Physical Aspects

a) Physiographic divisions
b) Climate: Seasonal variations in climate; Mechanism of Indian Monsoon; Climatic Regionalisation by Koeppen and Trewartha
c) Forests: Types and distribution
d) Soil regions: Problem of soil erosion; Water resources: Status and problems

Unit II: Human Aspects

a) Population distribution, density and growth
b) Population problems
c) Tribal population: Distribution pattern and belts
d) Regional disparities in socio-economic development in India

Unit III: Economic Aspects: Resource Base

a) Agriculture : Major characteristics and problems; Agro-climatic regions
b) Minerals: Distribution, production and development potential with reference to Iron-ore, Manganese, Bauxite and Copper
c) Power resources: Distribution, production and potential with respect to Coal, Petroleum, Hydel, Solar and Atomic power.
d) Multi-purpose Irrigation Projects: Bhakra Nangal, Chambal

Unit IV: Industrial and Development Aspects

a) Major industries: Mineral based- Iron & Steel, Cement
b) Agro based industries – Cotton Textile, Sugar Industry
c) Industrial Regions of India
d) Geographical Regions of India- Outline of scheme proposed by S.P.Chatterjee and R.L.Singh

Unit V: Geography of Rajasthan

a) Physical aspects: Physiography; Climate
b) Human aspects: Population growth, distribution and density, population problems
c) Geographical regions of Rajasthan: Schemes; Detailed study of The Aravali, The Desert, The Eastern Plateau and The Eastern Plain
d) Tribal population: composition, concentration and principal tribal groups, problems of tribal regions

References:

1. Bansal, B.C., 1981. Agricultural Problems of India, Oxford & IBH Publication, New Delhi
2. Bansal, P.C., 1975. Agricultural Problems of India, Vikas Publications, New Delhi.
3. Chand, M and Puri, V.V., 2011. Regional Planning in India, Allied Publishers, New Delhi
4. Deshpande, C.D., 1992. India- A Regional Interpretation, Northern Book Centre, New Delhi

5. Drez, Jean and Amartya Sen (Eds.) 1996. India Economic Development and Social Opportunity, Oxford University Press, New Delhi
6. Gopal Krishnan, R., 2001. Geography of India, Jawahar Publishers & Distributors, New Delhi.
7. Govt. of India, India: Reference Annual, Pub. Div, New Delhi, (latest edition)
8. Govt. of India, National Atlas of India, NATMO Publication, Calcutta
9. India - 2007, Publication Division, Ministry of Information and Broad Casting, Govt. of India, New Delhi
10. Johnson B.L.C. (Ed.) 2001. Geographical Dictionary of India, Vision Books, New Delhi
11. Khullar, D.R., 2000. India: A Comprehensive Geography, Kalyani Publishers, Ludhiana
12. Kumar, L. S. & Aggarwala A.C., 1962. Agriculture in India Vol. I & II, Asia Publishing House, New Delhi
13. Kundu, A. and Raza M., 1982. Indian Economy: The Regional Dimension, Spectrum Publishers, New Delhi
14. Mamoria, C. B., Agricultural Problems of India, Kitab Mahal, New Delhi
15. Mitra, A., 1967. Levels of Regional Development of India, Census of India, Vol. 1, Part I-A (i) and (ii), New Delhi
16. Nag, P. and Samita Sen Gupta, 1993. India, Concept Publishing Co., New Delhi
17. Sharma, T.C., 2003. India: Economic and Commercial Geography, Vikas Publication, New Delhi
18. Sharma, T.C., 2013. Economic Geography of India, Sterling Book House.
19. Siddartha, K., 1998. India: The Physical Aspects, Trans world Media and Communication Ltd., Patna
20. Singh, Gopal, 1995. Geography of India, Atmaram & Sons, New Delhi
21. Singh, Jagdish, 2003. India: A Comprehensive and Systematic Geography, Gyanodaya Prakashan, Gorakhpur.
22. Singh, R.L.,1971. India: A Regional Geography, National Geographical Society of India, Varanasi
23. Survey of Agriculture and Survey of Industry, 2003, Hindu Publication
24. Times of India Press, Times of India Year Book, Bombay (Latest Edition)
25. Tirtha, R, 2000. Geography of India, Rawat Publications, Jaipur
26. Tirtha, R. and Gopal Krishna, 1996. Emerging India, Rawat Publications, Jaipur.
27. Vaidya, K. S., 1998. Dynamic Himalaya, University Press, Hyderabad
28. Wadia, D. N., 1967. Geology of India, McMillan & Co., London
29. Census of India, Rajasthan Series, General Population Tables of 1961 to 2011
30. DST (Govt. of Rajasthan), Resource Atlas of Rajasthan, Jaipur
31. Govt. of Rajasthan, Statistical Abstract (Latest edition) Jaipur
32. Mishra, V. C. Geography of Rajasthan, National Book Trust, New Delhi

HINDI BOOKS

33. Bansal S.C., 2012. Bharat Ka Vrihat Bhugol , Meenakshi Prakashan, Meerut
34. Gopal Singh, 1991. Bharat ka Bhugol , Atmaram & Sons, New Delhi
35. Hussain Majid, 2014. Bharat Ka Bhugol, 5th Edition, McGraw Hill Education (India) Pvt. Ltd, New Delhi
36. Mamoria, C.B., 1999. Adhunik Bharat Ka Vrihat Bhugol , Sahitya Bhawan Publications, Agra
37. Bhalla. L. R., 2014. Rajasthan ka Bhugol, Kuldeep Publication, Ajmer
38. Saxena H.M,2014. Rajasthan Ka Bhugol, Rajasthan Hindi Granth Academy, Jaipur

39ण बंसल, एस.सी. : भारत का वृहत् भूगोल, मिनाक्षी प्रकाषन, मेरठ, नई दिल्ली
40ण मामोरिया, सी. बी. : भारत का भूगोल (साहित्य भवन, आगरा)
41ण मामोरिया, सी. बी. : भारत का वृहद् भूगोल (साहित्य भवन, आगरा)
42ण चौहान, टी. एस. : भारत का भूगोल (विज्ञान प्रकाषन, जयपुर)
43ण सिंह एवं सिंह : भारत एक भौगोलिक समीक्षा (वसुन्धरा प्रकाषन, गोरखपुर)

M.A./M.Sc. Geography
Second Semester
Paper – II (42362) Geography of Resources

Unit – I

a) Meaning ,scope of Resource Geography
b) Approaches and recent trends of Resource Geography
c) Resources : Meaning & Clarification
d) Concepts of Resources

Unit –II

a) Conservation of Resources : Concept & Aims
b) World Distribution ,Production and Problems of conservation of Iron & Manganese
c) World Distribution , production and problems of conservation of Coal, Petroleum & Hydroelectricity
d) Forest& Water Resources : World Distribution ,Utility & Conservation

Unit –III

a) Human as a Sources and a Resources
b) World Distribution , Density and Growth of Human Resources
c) Distribution , Density and Growth of Human Resources of India
d) Population –Resource Equilibrium & Population Resource Region of World

Unit - IV

a) Problems of Resource utilization
b) Resource Conservation and Preservation
c) Problems of Conservation &Trends of Resource Development
d) Planning of conservation of Natural Resources

Unit –V

a) Resource Region -Meaning & determinant elements of resource region
b) Major Resource Region of the World
c) Region of Bounty Resources& Region of Resource Scarcity
d) Indian Resource Region – A Case study of Aravali region

References:

1. Alien, S. W. and Leonard, J. W., Conserving Natural Resources, McGraw Hill
2. Brown, C. and Dey, India's Mineral Wealth, Oxford University Press, London
3. Chatterjee, S. R, Economic Geography of Asia, Allied Book Agency, Calcutta, 1984
4. Chisholm, M., Geography and Economy, G. Bell, London
5. Chorley, R. J., Water, Earth and Man, Methuen
6. Dreze, J. and A. Sen, India: Economic Development and Social Opportunity, Oxford University Press, New Delhi, 1996
7. Guha and Chatterjee, A New Approach to Economic Geography of Resources
8. Hamilton, F. E. I. (ed.), Resources and Industry, Oxford University Press, New York, 1992
9. Learmonth, T. A., Mysore State: Regional Synthesis, Asia Pub. House
10. Pachuri, R. K., Energy and Economic Development in India, Praeger, New York, 1977

11. Paterson, J. H., Land Work and Resources: An Introduction to Economic Geography, Arnold Heineman
12. Robertson, D. (ed.), Globalisation and Environment, E. Elgar Co., U.K., 2001.
13. Simmons, I. G., Ecology of Natural Resources, Edward Arnold, London, 1981
14. Thomas, R. S., The Geography of Economic Activity, McGraw Hill, New York.
15. Wheeler, J. 0. et al, Economic Geography, John Wiley, New York, 1995
16. Whitbeck, R. S. and Finch, V. L., Economic Geography, McGraw Hill, New York
17. World Resources Institute, World Resources 2000-01
18. Zimmermann, E. W., World Resources and Industries, Harber
19. श्रीवास्तव, वी. के. एवं राव, बी. पी. : आर्थिक भूगोल के मूल तत्व (वसुन्धरा प्रकाषन, गोरखपुर)
20. रजा, एम. एवं सिंह, ए. : संसाधन भूगोल
21. नैगी, बी. एस. : संसाधन भूगोल
22. सिंह एवं सिंह : आर्थिक और संसाधन भूगोल

M.A./M.Sc. Geography
Second Semester
Paper – III (42363) Regional Development and Planning

Unit – I

a) Concept of space, area and locational attributes
b) Development: concepts and indicators; planning: concept need and levels
c) Region: concept, types and deli; planning regions: need, characteristics and hierarchy
d) Heritage of regional development theory: regional science, regional economics and theoretical geography

Unit – II

Main themes of regional development theories:

a) Economic growth doctrines and their impact on regional development (E. Hoover, D.C. North, F. Perroux, W. Isard
b) Theories of transmission of economic growth (G. Myrdal, A.O. Hirschmann, H.S. Perloff, I. Rodwin, J. Friedmann); UN sponsored policies and programmes
c) Debate on the relevance of development theories: Rethinking of development (D. Seers, Club of Rome, H. Chenery, the neo-Marxists); territorial v/s functional regional development (J. Friedmann); Theories of regional underdevelopment (D. Slater, D. Forbes); development from below (W. Stohr and F. Toddling, D.A. Rondinelli and K. Ruddle)
d) Multifaceted paradigms of regional development: Eco-development, 'another' development, sustainable development, development under structural adjustment programmes

Unit – III

Regional planning strategies:

a) Urban-industrial growth pole strategies as a tool of diffusion of modernisation
b) Neo-populist regional development strategies: Integrated rural development, basic need approach, target area and target group approach
c) Multi-level regional planning
d) Peoples participation in the planning process; Panchayati Raj system; role and relationship of Panchayati Raj Institutions (Gram Panchayat, Panchayat Samiti and Zila Parishad) and administrative structure (village, block and district)

Unit – IV

a) Delineating regions for planning: planning regions v/s geographical regions
b) Schemes of regionalization (J. Friedmann, V. Nath, L.S. Bhat, P. Sengupta, Galina Sdasyuk), territorial production complexes
c) The role of cities and the urbanization process in regional development in India; Planning for supra-urban spaces
d) The state and regional policy in India; the status of regional planning in the Five Year Plans

Unit – V

a) National plans: South East Resource Region Plan and The Western Ghat Plan
b) Administrative machineries of regional planning in India: The Planning Commission, the Town and Country Planning Organization, district level planning
c) Regional social movements in India and their linkages with state regional policy and development strategies
d) The New Economic Policy and its impact on the regional structure and regional planning problems in India

References:

1. Abler, R., et al, Spatial Organization, The Geographer's View of the World, Prentice Hall, Englewood Cliffs, N. J., 1971
2. Alden, Jeremy and Robert Morgan, Regional Planning: A Comprehensive View, Leonard Hill Books, Beds, 1974
3. Bhat, L. S. et al., Micro-Level Planning: A Case Study of Karnal Area, Haryana, K. B. Publications, New Delhi, 1976
4. Bhat, L. S., Regional Planning in India, Statistical Publishing Society, Calcutta, 1973
5. Chandna, R. C., Regional Planning: A Comprehensive Text, Kalyani Publishers, Ludhiana, 2000
6. Chorley, R. J. and R. Hagget, Models in Geography, Methuen, London, 1967
7. Christaller, W., Central Places in Southern Germany, Translated by C. W. Baskin, Prentice Hall, Englewood Cliffs, New Jersey, 1966
8. Friedmann, J. and W. Alonso, Regional Development Policy- A Case Study of Venezuela, M.I.T Press Cambridhge, Mass, 1966
9. Friedmann, J. and W. Alonso, W., Regional Development and Planning - A Reader, M. I. T. Press, Cambridge, Massachusetts, 1967
10. Glasson, John, An Introduction to Regional Planning – Concepts, Theory, and Practice, Hutchinson Educational Ltd., London, 1974
11. Glikson, Arthur, Regional Planning and Development, Netherlands Universities foundation for International Co-operation, London, 1955
12. Gosal, G. S. and Krishan, G., Reclional Disparities in Levels of Socio-Economic Development in Punjab, Vishal Publications, Kurukshetra, 1984
13. Government of India, Planning Commission, Third Five Year Plan, Chapter on Regional Imbalances in Development, New Delhi, 1961
14. Indian Council of Social Science Research, Survey of Research in Geography, Popular Prakashan, Bombay, 1972
15. Johnson, E. A. J., The Organisation of Space in Developing Countries, Harvard University Press, Cambridge, 1 970
16. Kuklinski, A. R. (ed.), Growth Poles and Growth Centres in Regional Planning, Mouton, The Hague, 1972
17. Kundu, A. and Moonis Raza, Indian Economy - The Regional Dimension, Spectrum Publishers, New Delhi, 1982

18. Losch, A., The Economics of Location, University Press, Yale, New Haven, 1954.
19. Mishra, R. P. et al, Multi-Level Planning, Heritage Publishers, Delhi, 1980
20. Misra, R. P. (ed.), Regional Planning: Concepts, Techniques, Policies & Case Studies, University of Mysore, Mysore, 1969
21. Misra, R. P. et al (eds.), Regional Development Planning in India - A Strategy, Institute of Development Studies, Mysore, 1974
22. Mitra, A., Levels of Regional Development, Census of India, Vol. 1, Part IA (i) and (ii), New Delhi 1965
23. Myrdal, G., Economic Theory and Under-Development Regions, Gerald Duckworth, London, 1957
24. Nangia, Sudesh, Delhi Metropolitan Region, Rajesh Publication, Delhi, 1976
25. Raza, Moonis (ed.), Regional Development, Heritage Publishers, Delhi, 1988
26. Richardson, H. W., Elements of Regional Economics, Weidenfeld and Nicolson, London, 1969
27. Singh, Tarlok, India's Development Experience, McMillan, New Delhi, India, 1974
28. Sundaram, K. V. (ed.), Geography and Planning: Essays in Honour of V. L. S. Prakasa, Concept Publishing Company, New Delhi, 1985

M.A./M.Sc. Geography
Second Semester
Paper – IV (42364) Political Geography

Unit – I

a) Nature, scope and subject matter of political geography
b) Geopolitics: meaning and contributions of Emmanuel Kant, Karl Ritter, Friedrick Ratzel, H. V. Tritischke, Rudolf Kjellen and Karl Haushofer
c) Development of political geography
d) Contributions of Alfred Thayer Mahan, H. J. Mackinder and Alexander-de-Seversky, D.W. Meining, N.J. Spykman and Hooson

Unit – II

a) Recent trends in political geography
b) The functional approach in political geography
c) The unified field theory of political geography
d) Nature of administrative areas and geography of public policy and finance

Unit – III

a) Concept of nation, state and nation state
b) The state as a politico-geographical region: location, shape, size
c) Resources of state: natural, cultural and human
d) Frontiers and boundaries: types and functions, boundary making and boundary problems

Unit – IV

a) Core areas and capitals
b) Unitary and federal states
c) The impress of government on landscape
d) Politics of world resources; globalization and WTO

Unit – V

a) Electoral studies in political geography

b) Conceptual model of voting decision; Gerrymandering: gerrymandering in relation to India
c) Geographical influence on voting behaviour of the electors in India
d) Spatial pattern of voting behaviour in Rajasthan

References:

1. Alexander, L. M., World Political Patterns, Ran McNally, Chicago, 1963
2. Boggs, S. W., International Boundaries: A Study of Boundary Function and Problems, Columbia University Press, New York
3. Busteed, M. A., Geography and Voting Behaviour, Oxford University Press, London
4. Carlson, L., Geography and World Politics, Prentice Hall, New York
5. de Blij, H. J. and Glassner, Martin Systematic Political Geography , John Wiley, New York, 1968
6. Deshpande C. D., India: A Regional Interpretation, Northern Book Centre, New Delhi, 1992
7. Dikshit, R. D., Political Geography: A Century of Progress, Sage, New Delhi, 1999
8. Dikshit, R. D., Political Geography: A Contemporary Perspective, Tata McGraw Hill, New Delhi, 1996
9. Fawceet, C. B., Frontiers: A Study in Political Geography, Oxford University Press, London
10. Fisher Charles A., Essays in Political Geography, Methuen, London, 1968
11. Horradin, J. F., An Outline of Political Geography, Autred A. Knohs, New York
12. Jackson, W. A. D., Politics and Geographic Relationships: Readings on the Nature of Political Geography, Prentice Hall, New York
13. John R. Short, An introduction to Political Geography, Routledge, London, 1982
14. Jonson, R. L., Political, Electoral and Spatial Systems: An Essay in Political Geography, Oxford University Press, Oxford & New York
15. Kasperson, R. E. and J. V. Minghi, Structure of Political Geography, University of London Press, London
16. Mackinder, H. J., Democratic Ideals and Reality, Norton & Company, New York
17. Moodie, A. E., Geography Behind Politics, Hutchinson University Press, London
18. Panikkar K. M., Geographical Factors in Indian History, 2 volumes, Asia Publishing House, Bombay, 1959
19. Pearcy, G. E. and R. H. Fifield, World Political Geography, Thomas Y. Crowell Co., London
20. Pounds N. J. G., Political Geography, McGraw Hill, New York, 1972
21. Prescott, J. R. V., Political Geography, Methuen & Co., London
22. Prescott. J. R. V., The Geography of Frontiers and Boundaries, Aldine, Chicago
23. Sukhwal, B. L., Modern Political Geography of India, Sterling Publishers, New Delhi. 1986
24. Taylor, P. J. and R. J. Johnston, Geography of Elections, Penguin London, Hammond Worth
25. Taylor, Peter and John House, Political Geography: Recent Advances, Barnes and Nobel Books Totowa, New Jersey
26. Taylor, Peter; Political Geography Longman, London. 1985
27. Wigert, H. W. et al, Principles of Political Geography, Appleton Century-Crofts Inc. New York
28. चौहान, पी.आर. : राजनीतिक भूगोल (वसुन्धरा प्रकाषन, गोरखपुर)
29. भट्टाचार्य, ए.एन. एवं आच्छा, एस. एल : राजनीतिक भूगोल (राजस्थान हिन्दी ग्रन्थ अकादमी जयपुर)
30. दीक्षित, आर. डी. : राजनीतिक भूगोल – समसामयिक परिदृष्टि (प्रेन्टिस हॉल आफ इण्डिया)
31. सक्सेना, एच. एम.: राजनीतिक भूगोल (रस्तोगी पब्लिकेषनस, मेरठ)
32. कपूर कालीदास : भारतीय भू–नीति (हिन्दी समिती सूचना विभाग)
33. कोलोषोव, वी. : राजनीतिक भूगोल (प्रगति प्रकाषन, मास्को)
34. दीक्षित श्रीकान्त : राजनीतिक भूगोल (ज्ञानोदय प्रकाषन, गोरखपुर)

M.A./M.Sc. Geography
Second Semester
Practical – I (42365 A) Advanced Cartography

Unit – I

a) Nature, scope & History of cartography
b) Techniques &Tools of Cartography
a) Maps and their classification : Distributional maps
c) Representation of Statistical Data: Diagrams-One,Two,Three Dimensional(3)

Unit – II

Geomorphic aspects based on toposheets of 1:50000 or 1:25000 (4 exercise)

a) Stream orders and basin demarcation
b) Drainage density and texture
c) Slope : average slope maps according to Wentworth's method
d) Profiles : serial, composite, super- imposed, &projected Profiles

Unit – III

Climatic aspects (5 exercises)

a) Rainfall variability graphs
b) Rainfall dispersion diagram
c) Ergograph,&Ogilvie's ergograph
d) Climatograph

Unit – IV

Socio-Economic & Demographic aspects - at least with 20 administrative units (4 Exercises)

a) Population distribution (Dot method)
b) Density map (Choropleth maps)
c) Nearest neighbour analysis
d) Traffic flow cartogram

Unit – V

Map projections – Characteristics, use and mathematical
Constriction along with outline maps of the following projections (5 Exercises)

a) Bonne,s projection
b) Conical projection –two standard parallel
c) Gall's projection
d) Mollweide's projection

Note: Record work will comprise of a minimum of 21 exercises drawn on one fourth of a full drawing sheet and methodological and analytical interpretation of each one.

Distribution of Marks **Total Marks 100**

A Part – Advance Cartography (40 Marks), Practical paper of three hours duration will be held along with main theory paper examination.

Section – A Objective type 5 marks. Asked 10 questions, attempt all questions.
Section – B Short Answers – 20 marks, Asked 10 questions, one question from each unit and attempt five questions.

Section-C Descriptive type-15 marks ,Asked 5 questions, one question from each unit and attempt two questions

Practical – Assessed by External Examiner

B Part – Advance Cartography, (60 marks)

A Test paper Lab exercise – 30 marks, asked 6 questions, attempt three questions and duration 3 hours.

B - Record work – 20 marks

C - Viva-voce – 10 marks

The Cartographic record work should contain 20 exercises drawn on one fourth of the full drawing sheet.

References:

1. Arthur G., Advance Practical Geography, Heinemann.
2. Campbell, J., Introductory Cartography, Prentice Hall Inc., New York.
3. Govt. of Rajasthan, District Census Handbooks, latest as well as of previous Census,
4. Keates, J. S., Cartographic Design and Production, Longman, London.
5. Loxton, J., Practical Map Production, John Wiley & Sons, New York.
6. Mishra, R. P. and A. Ramesh, Fundamentals of Cartography, Concept Publishers, New Delhi.
7. Monkhouse, F. J. and H. R. Wilkinson, Maps and Diagrams, Methuen & Co., London.
8. Raisz, E., General Cartography , McGraw Hill Book Co., New York.
9. Robinson, A. H., Elements of Cartography, Chapman & Hall.
10. Sing, R. L., Elements of Practical Geography, Kalyani Publishing.
11. Singh, R. N., Map Work and Practical Geography, Central Book Depot.
12- षर्मा, जे. पी. : प्रयोगात्मक भूगोल (रस्तोगी पब्लिषर्स, मेरठ)

M.A./M.Sc. Geography
Second Semester
Practical – II (42365 B) Basics of Remote Sensing and Image Interpretation

Unit: I

Basics of Remote Sensing

a) Historical development; Significance of remote sensing in geographical studies
b) Electromagnetic Radiation (EMR) Spectrum; Laws of Radiation
c) Stages of Remote Sensing, EMR interaction with earth's surface
d) Spectral signatures, typical spectral reflectance curves of vegetation, soil and water

Unit: II

Remote Sensing Satellites and Platforms

a) Orbits and platforms for earth observation
b) Satellite and sensor types: geo-synchronous and polar satellites, active and passive systems
c) Image characteristics: image formats; types of image resolutions; color composites
d) Characteristics of major satellite systems: IRS, Landsat, NOAA, IKONOS, World-View Satellite System

Unit: III

Digital Image Processing

a) Types of radiometric errors, methods of radiometric correction- Dark Object Subtraction
b) Geometric errors: Types, geometric correction, Resampling

c) Image enhancement techniques: stretching, histogram equalization, density slicing
d) Image ratioing- NDVI

Unit: IV

Thematic Map Generation and Map Composition

a) Visual Image Interpretation: principles, elements, interpretation keys
b) Map composition
c) Interpretation and Mapping of Natural Landscapes using satellite image.
d) Interpretation and Mapping of Cultural Landscapes using satellite image.

Unit: V

Application of Remote Sensing

a) Application of Remote Sensing in Urban Land Use, Urban Heritage and Ecology.
b) Application of Remote Sensing in Resource Management
c) Application of Remote Sensing in Agricultural Studies
d) Application of Remote Sensing in Environmental Studies.

Practical Exercises:

1. Familiarization with the software –ILLWIS/ Erdas Imagine/ ENVI
2. Data acquisition-accessing satellite data of area of interest, digital referencing system
3. Data import and subset
4. Observation and identification of earth's features in various spectral bands and different types of images (PAN/ multi-spectral)
5. Observation of spectral profiles of water, soil and vegetation
6. Analysis of image histograms
7. Image display – TCC, FCC
8. Radiometric correction using Dark Object Subtraction
9. Geometric correction- Image to map rectification: NN, Bi-linear and Cubic interpolation
10. Geometric correction- Image to image registration
11. Image enhancement: Stretching, interpretation of results
12. Image enhancement: Histogram Equalization, interpretation of results
13. Image enhancement: Density Slicing, interpretation of results
14. NDVI image generation, interpretation of results
15. Identification of features using elements of visual interpretation
16. Thematic map generation using visual interpretation and on-screen manual digitization/ analog multi-spectral images: Natural landscape
17. Thematic map generation using visual interpretation and on-screen manual digitization/ analog images: Cultural landscape
18. Mapping urban land use/ forest cover/ agriculture typology using satellite images
19. Computation of area of different classes

Exercises will be implemented in ERDAS, ENVI, Illwis or any other DIP Software as per availability. One computer system will be provided to each student for conducting practical exercises. One local field trip will be conducted for field verification of satellite image of Udaipur city and nearby areas. Students will be required to prepare a Field Report and submit along with the Record Work.

References:

1. American Society of Photogrammetry, 1983. Manual of Remote Sensing, ASP, Falls Church, VA

2. Barrett, E. C. and L. F. Curtis, 1992. Fundamentals of Remote Sensing and Air Photo Interpretation, Macmillan, New York
3. Campbell, J., 1989. Introduction to Remote Sensing, Guilford, New York
4. Chauniyal, D.D., 2004. Remote Sensing and Geographical Information Systems (**in Hindi)**, Sharda Pustak Bhawan, Allahabad
5. Curran, Paul J., 1985. Principles of Remote Sensing, Longman, London
6. Jenson J.R., 1996. Introductory Digital Image Processing: A Remote Sensing Perspective, Prentice Hall, New Jersey
7. Jenson, J.R., 2000. Remote Sensing of the Environment: An Earth Resource Perspective. Perason Education
8. Lillesand, T.M., Keifer R.W. & Chipman, J.W., 2008. Remote Sensing and Image Interpretation. John Wiley & Sons, New Delhi
9. Pratt W.K., 1978. Digital Image Processing. Wiley, New York

WEB RESOURCES

1. Ebook on Remote Sensing Applications, www.**nrsc**.gov.in/Learning_Centre_**EBook**.html
2. E-Tutorial on Fundamentals of Remote Sensing, Canada Centre for Mapping and Earth Observation, Natural Resources Canada, accessible at http://www.nrcan.gc.ca/earth-sciences/geomatics

Distribution of Marks **Total Marks 100**

A Part – Basics of Remote Sensing and Image Interpretation, (40 marks)

Practical paper of three hours duration will be held along with main theory paper examination.

Section – A Objective type- 5 marks. Asked 10 questions, attempt all questions.

Section – B Short Answers – 20 marks, Asked 10 questions, one question from each unit and attempt five questions.

Section-C Descriptive type-15 marks, Asked 5 questions, one question from each unit and attempt two questions

Practical – Assessed by External Examiner

B Part – **Basics of Remote Sensing and Image Interpretation, (60 marks)**

Test paper Lab exercise – 35 marks (25+10),

Practical exercise shall be of three hours duration and of 25 marks and candidates will be required to attempt any 2 exercises out of 4. One based on computer.

i. The identification of objects (at least 10) on the satellite imagery shall be of 30 minutes duration and will carry 10 marks

B - Record work – 15 marks

C - Viva-voce – 10 marks

The practical exercises, record work and viva-voce examination shall be conducted by an external examiner in consultation with the internal examiner

M.A./M.Sc. Geography
Third Semester
Paper – IV (43361) Geographical Research Methodology

Unit – I –

Research Methodology-An Overview;

a) Procedure of Scientific Research;
b) Some Methodological Controversies and Explanation in Geography;
c) Selection and relevance of research theme, Defining Research Problem;
d) Formulation of hypothesis, objectives, Nature,type and characteristics of hypothesis.

Unit II

a) Research design, Methodology and data base, outline of the research Research Design.
b) sources and types of data , - primary and secondary data, - published and unpublished sources, toposheet, satellite imageries,
c) Methods of Data' Collection; Observation, Questionnaire, Schedule and Interview;
d) Sampling: Need for Sampling Methods, Size of Sampling;

Unit III.

a) Measurement in Research, Measurement Scales,
b) Scales of measurement: nominal, ordinal, interval and ratio.
c) Sources of Error in Measurement; Scaling: Meaning of Scaling,
d) Scale\of Classification Bases, Important Scaling Techniques.

Unit-IV:

Processing and Analysis of Data:

a) Processing-Editing, Coding, Classification and Tabulation,
b) Analysis- Measurement of Central Tendency; Dispersion and Relationship, Probability;
c) Testing of hypothesis – chi-square test, ANOVA,F test,&student's't 'test.
d) Simple Regression; GIS.

Unit-V:

Interpretation and Preparation of Research Reports:

a) a. Meaning and Techniques of Interpretation, Steps, &Layout
b) Types of Reports:,
c) Appendices, notes, references, citation and bibliography
d) Writing of the dissertation/ thesis & Defense of the thesis at viva voce

References:

1. Chou, Ya-Lun, Statistical Analysis: With Business and Economic Applications, Holt, Rinehart and Winston, New York, 1975
2. Cole, J. P. and C. M. A. King, Quantitative Geography: Techniques and Theories in Geography, John Wiley and Sons Ltd., London, 1970
3. Gregory, S., Statistical Methods and the Geographer, Longman Group Ltd. London, 1978
4. Hammond, Robert and Patrick McCullagh, Quantitative Techniques in Geography: An Introduction, Oxford University Press, London, 1978
5. Hebden, Julia, Statistics for Economists, Heritage Publishers, London, 1990
6. Johnston, R. J., Multivariate Statistical Analysis in Geography, Longman Group Ltd. London, 1978

7. Kundu, Amitabh, Measurement of Urban Processes: A study of Regionalisation, Popular Prakashan Private Ltd., Bombay, 1980
8. Silk, J., Statistical Concepts in Geography, George Allen and Unwin, London, 1980
9. Wilson, A. H. and M. J. Kirkby, Mathematics for Geographers and Planners, Oxford University Press London 1982

M.A./M.Sc. Geography
Third Semester
Paper – II (43362) Agricultural geography

Unit – I

a) The nature and development of agricultural geography
b) Approaches recent trends in agricultural geography
c) Origin and dispersal of agriculture
d) Sources of agricultural data

Unit – II

a) Factors affecting agriculture: Physical, institutional and technological
b) Agricultural systems of the world
c) Critical review of classification of agricultural types of Whittlesy
d) Detailed study of intensive subsistence, commercial grain farming and tropical plantation agriculture

Unit – III

a) Land use classification; landuse pattern in India; and land capability classification
b) Von Thunen's agricultural model of agricultural land use and recent modification in it
c) Nutrition and food balance sheet; food surplus and food deficient regions of India
d) Diffusion model

Unit – IV

a) Concept and techniques of delimitation of agricultural regions; agricultural regions of India and their characteristics
b) Measures of agricultural productivity and efficiency levels and other characteristics
c) Crop combination methods: Weaver's, Doi's and Rafiullah's methods and their applications
d) Agricultural typology: concept and methodology; patterns with special reference to the world and Rajasthan

Unit – V

a) Sustainable development of agriculture
b) Green and white revolutions: Their components, impact and consequences
c) Specific problems in Indian agriculture and their management and planning
d) Agricultural policy of India

References:

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 World Food Prospects: The Nineties and Beyond, World Watch Institute, Washington D. C., 1990

4. Coppock, J. K. , An Agricultural Atlas of England and Wales, Faber and Haber, London
5. Cox, K. R., Man, Location and Behaviour: An Introduction to Human Geography, John Willey and Sons, London
6. Dyson, T., Population and Food: Global Trends and Future Prospects, Routledge, London, 1996
7. George, H. F., Geography of Agriculture: Themes in Research, Prentice Hall, New York
8. Gregor, H. P., Geography of Agriculture, Prentice Hall, New York, 1970
9. Grigg, D. B. The Agricultural Systems of the World, Cambridge University Press, New York, 1974
10. Hartshorne, T. N. and J. W. Alexander, Economic Geography, Prentice Hall, New Delhi, 1988
11. Kostrowicki, J., World Types of Agriculture, Warsaw, Poland
12. Mannion, A. M., Agriculture and Environment Change, John Wiley and Sons, London, 1995
13. Morgan, W. B. R. and J. C. Norton, Agricultural Geography, Methuen, London, 1971
14. Morgan, W. B. R., Agricultural in the Third World: A spatial Analysis, West View Press, Boulder, 1978
15. Preston, E. James, American Geography: Inventory and Prospects, Syracuse University Press
16. Sauer, Carl O., Agricultural Origin and Dispersals, M. I. T. Press, Massachusetts, 1969
17. Shafi, Mohammed, Agricultural Geography, Dorling Kindersley (India), Delhi, 2006
18. Singh, Jasbir, An Agricultural Atlas of India: A Geographical Analysis, Vishal, Kurukshetra
19. Singh, Jasbir, An Agricultural Geography of Haryana, Vishal Kurukshetra
20. Singh, Jasbir and S. S. Dhillon, Agricultural Geography, Tata McGraw Hill Publishing Company Ltd., New Delhi, 1988
21. Symones, Lesli, Agricultural Geography, G. Bell & Sons, London
22. Tarrant, J. R., Agricultural Geography, John Wiley and Sons, New York, 1974
23. Whittlesey, D., Major Agricultural Region of the Earth, AAAG, Vol.26, pp.199 and 240-296
24. Whyle, R. O., Land, Livestock and Human Nutrition in India, F. A. Paragon

M.A./M.Sc. Geography
Third Semester
Paper – III (43363) Urban Geography & Planning

Unit – I

a) Nature, scope and development of urban geography; urban concepts
b) Origin and growth of urban centres: ancient and Medieval age
c) Process of urbanisation: Trends of urbanization in the world
d) Urbanization In India , Development of Metropolitan cities in India

Unit – II

a) Classification of urban centres: Views of Mum ford and Griffith Taylor
b) Development of Conurbation and Megalopolises : North Eastern Sea board of USA , Rhine-Ruhr conurbations, Mumbai and Kolkatta conurbations in India
c) Theories of urban system: the law of primate city and the rank-size rule
d) Central place theories: Christaller's central place system, Losch's economic landscape

Unit – III

a) Urban land use: human ecology and urban land use models of Burgess, Harris-Ullman and Hoyt; land economics and urban land use
b) Central business district (CBD): criteria and methods of areal definition, historical process and CBD; the zone in transition

c) Functional classification Of cities : Empirical and Statistical methods
d) Centripetal and centrifugal forces of Urban growth

Unit – IV

a) Rural Urban Fringe : Concept, criteria's of Delimitation and charactestics
b) Morphology of Indian Cities : Ancient , Medieval and Modern Planned Cities of India with special studies of Jaipur and Chandigarh cities
c) Concept of basic and non basic functions, internal functional structure of urban centres
d) Social structure in urban areas of India , social segregation in Indian cities

Unit – V

a) Urban Problems: Development of Slums in urban areas and their problems, problems of housing and social infrastructure
b) Urban Planning: principles of urban planning , Layout plans of Cities
c) Urban environment: industrial pollution and environmental panning
d) Sustainable Urban Development: studies of master plans of Udaipur and Jaipur cities.

References:

1. Alam, S.M.: Hyderabad - Secunderabad Twin Cities Asia Publishing House, Bombay, 1964
2. Bansal, S. C., Urban Geography, Minakshi Publication, Meeruth, 2000, (Hindi)
3. Beaujeu-Garnier, J. and G. Chabot, Urban Geography, Longman, London
4. Berry, B. J. L. and F. E. Horton, Geographic Perspectives on Urban Systems, Prentice Hall, New York, Englewood Cliffs, New Jersey, 1970
5. Carter, Harlod, The Study of Urban Geography, Arnold-Hienemann Publishers (India) Private Ltd., New Delhi, 1982
6. Chapin, F. Stuart, Urban Land Use Planning, University of Illinois Press
7. Chorley, R. J. and P. Haggett (eds.), Models in Geography, Methuen, London, 1966
8. Davis, Kingsley and Hertz, Patterns of World Urbanisation, Columbia University Press
9. Dickinson, R. E., City and Region, Routledge, London, 1964
10. Duncan, O. D., Metropolis and Region, John Hopkins Press, Baltimore
11. Dwyer, D. J. (ed.), The City as a Centre of Change in Asia, University of Hong Kong Press, Hong Kong, 1971
12. Forrester, Jay W., Urban Dynamics, M. I. T. Press, Cambridge
13. Gallion, Arthur B. and Simon Eisner, The Urban Pattern: City Planning and Design, Affiliated East-West Press Private Ltd., New Delhi, 1969
14. Gibbs J. P., Urban Research Methods, D. Van Nostrand Co. Inc. Princeton, New Jersey, 1961
15. Gottmann, Jean, Megalopolis: The Urbanised Northeastern Seaboard of the United States, M. I. T. Press, Cambridge, Massachusetts, New York, 1961
16. Hagget, P., Geography: A Modern Synthesis, Harper & Row, New York
17. Hall P., Urban and Regional Planning, Penguin, London, 1974
18. Hauser, Philip M. and Schnore Leo F. (ed.), The Study of Urbanisation, Wiley, New York, 1965
19. Herbert, David T. and Colin J. Thomas, Urban Geography: A First Approach, John Wiley and Sons, New York, 1982
20. James, P. E. and C. F. Jones, (eds.), American Geography: Inventory and Prospect, Syracuse University Press, Syracuse, 1954
21. Johnson, J. H., Urban Geography: An Introductory Analysis, Pergamon Press, London, 1968
22. Kundu, A., Urban Development and Urban Research in India, Khanna Publication, 1992
23. Losch, August, The Economics of Location, Yale University Press, London, 1973
24. Meyor, H. M. and C. F. Kohn, (eds.), Readings in Urban Geography, University of Chicago Press, Chicago, 1955

25. Mumford, L., Culture of Cities, McMillan & Co., London, 1958
26. Mumford, L., The City in History, Secker and Warburg, London, 1961
27. Mumford, L., The Cultures of Cities, Harcourt, Brace and Co. Inc., London, 1938
28. Murphy, R. E., The American City: An Urban Geography, McGraw Hill Book Co., New York, 1966
29. Nangia, Sudesh, Delhi Metropolitan Region: A Study in Settlement Geography, Rajesh Publication, 1976
30. Pacione, M., Progress in Urban Geography, Croom Helm, London
31. Rao, V. L. S. Prakasa, The Structure of an Indian Metropolis: A Study of Bangalore, Allied Publishers, Bangalore, 1979
32. Rao, V. L. S. Prakasa, Urbanisation in India: Spatial Dimensions, Concept Publishing Co., New Delhi
33. Robson, B. T., Urban Analysis, Cambridge University Press, London, 1969
34. Singh, K. and F. Steinberg, (eds.), Urban India in Crisis, New Age Interns, New Delhi, 1998
35. Singh, O. P., Urban Geography, Tara Book Agency, Varanasi, 1987, (Hindi).
36. Singh, R. L., Banaras, Nandkishore, Varanasi
37. Smailes, A. E., The Geography of Towns, Hutchinson, London, 1953
38. Tewari, Vinod K., Jay A. Weinstein and V. L. S. Prakasa Rao (eds.), Indian Cities: Ecological Perspectives, Concept Publishing Co., New Delhi, 1986
39. Wingo, L. et al, Cities and Space: The Future Use of Urban Land, Johns Hopkins, London

M.A./M.Sc. Geography
Third Semester
Paper – IV (43364 A) Transport Geography

Unit – I

a) Meaning, scope and development of transportation geography
b) Factors associated with the development of transport system: historical, technological, physical, economic, political and social
c) Spatial interaction: ideas of Edward Ullman; functional approach of M. E. Hurst
d) Concepts of distance: point to point distance and distance in a group of points; measures of distance

Unit – II

a) The functional region, linkages and nodes, diagrammatic representation of hinterlands and hierarchies
b) Transportation and spatial processes: regional specialisation and agglomeration economies
c) Cost of overcoming distance: transportation cost, price and rate structure; transport costs as factor of production
d) An idealised process of transport development

Unit – III

a) Graph theoretic concepts; networks as models
b) Types of connectivity: concept and indices of connectivity

c) Measures of nodal accessibility: the network as a matrix; degree of connectivity: direct and indirect connectivity
d) Indices of accessibility: accessibility matrix, matrix T, shortest path matrix and valued matrix; sinuosity

Unit – IV

a) Spatial patterns of flow
b) Gravity model: basic model and its modifications related to traffic and commodity flow
c) Allocation model: transportation problem and optimum solution
d) Flow in a capacitated network

Unit – V

a) Negative impacts of transportation: social, accidents and other impairments
b) Economic and environmental aspects of urban transport problems and their control
c) Alternative transport systems in mega cities; transport systems in the developing countries
d) Development of the Indian surface transport system

References:

1. Abler, Adams and Gould, Spatial Organization: The Geographer's View of the World, Prentice Hall, New York
2. Buchannan, C. D., Traffic in Towns, Buchannan Report, HMSO, London
3. Hagget, P. et al, Locational Analysis in Human Geography, Edward Arnold, London, 1977
4. Haggett, P. and R. J. Chorley, Network Analysis in Geography, Arnold, London, 1968
5. Hay, A. Transport Economy, Macmillan, London, 1973
6. Hensher, David A. (ed), Handbook of Transport Geography and Spatial Systems, Emerald Group Publishing, 2004
7. Hoyle, B. S. (edt.). Transport and Development, Macmillan, London, 1973
8. Hoyle, B. S. and R. Knowles, Modern Transport Geography, Wiley Europe
9. Hurst, M. E. E., Transportation Geography: Comments and Readings, McGraw Hill, New York, 1974
10. Hussain, M. et al, Transport Geography: Perspective in Economic Geography Series, Anmol Publications Pvt. Ltd., New Delhi
11. James, P. E. and C. F. Jones, (eds.), American Geography: Inventory and Prospect, Syracuse University Press, Syracuse, 1954
12. Johnston, R. J., Multivariate Statistical Analysis in Geography: A Premier on The General Linear Model, Longman, London, 1978
13. Kansky, K. J., Structure of Transportation Network, Research Paper No.48, Department of Geography, University of Chicago
14. Knowles, R. and J. Wareing, Economic and Social Geography, Heinemann
15. Lowe, J. C. and S Moriyadas, The Geography of Movement, Houghton Mifflin Co., Boston
16. Munby, D., Transport, Penguin
17. Patankar, P. G., Urban Transport in Distress, Central Institute of Road Transport, Pune
18. Raza, Moonis and Y. P. Agrawal, Transport Geography of India, Concept Publishing Company, New Delhi, 1985
19. Robinson, H. and C. G. Bamford, Geography of Transportation, McDonald and Evans, London, 1978
20. Taaffe, E. J. and et al, Geography, Prentice Hall Inc
21. Taaffe, E. J. and H. L. Gauthier, Geography of Transportation, Prentice Hall Inc., New Jersey, 1973

22. Taaffe, Edward James, Howard L. Gauthier, Morton E. O'Kelly, Geography of transportation, Prentice-Hall Foundations of Economic Geography Series, 2nd edition, Morton O'Kelly, 1996
23. Ullman, E. L., American Commodity Flow, University of Washington Press, 1957
24. White H. P. and M. L. Senior, Transport Geography, Longman, London, 1983
25. Woodcock, R. G. and M. J. Baily, Quantitative Geography, McDonald & Evans
26. Yeates, Maurice, An Introduction to Quantitative Analysis in Human Geography, McGraw-Hill Book Company, New York

M.A./M.Sc. Geography
Third Semester
Paper – IV (43364 B) Rural Development and Planning

Unit – I

a) Concepts of growth, development and under development
b) Development theories with special reference to rural development
c) Development and disparities: Regional, rural-urban, sectoral and stratal
d) Expectations of development planning

Unit – II

a) Rural poverty: Definitions and measurement
b) Faces of poverty: Income, non-income, famine and chronic poverty
c) Poverty eradication strategies: Basic needs, micro finance, sustainable livelihood approach
d) Poverty alleviation programmes in India

Unit – III

Approaches to Rural Development

a) The Sectoral approach and Integrated rural development
b) Decentralization and participatory development
c) The right based approach to development
d) International cooperation for rural development

Unit – IV

Rural infrastructure planning

a) Physical infrastructure: Transportation, water supply and sanitation, rural energy and communication systems
b) Economic infrastructure: Industries, banking and marketing
c) Social infrastructure: Health services, educational institutions
d) Planning for sustainable means of livelihood

Unit – V

a) National planning and rural development
b) Panchayati Raj institutions and rural development and planning: Role, achievements and problems
c) Issues of inclusive development planning
d) Environmental issues of rural development

References:

1. APO, Successful Community Development. Tokyo: APO, 2002
2. Daniels, Thomas, J.W. Keller, and M.B. Lapping, The Small Town Planning Handbook. APA Press, Chicago, Illinois, 1995

3. Friedmann, J. and C. Weaver, Territory and Function (The Evolution of Regional Planning), Edward Arnold, 1979.
4. Gilbert, A. and J. Guglar: Cities, Poverty and Development (Urbanization in the Third World), Oxford University Press, 1984
5. Gore C., Region in Question (Space, Development Theory and Regional Policy), Methuen, 1984
6. Harris, J., Rural Development (Theories of Peasant Economy and Agrarian Change), Hutchinson University Library, 1984
7. Harris, J. and M. Moore: Development and the Rural-Urban Divide, Frank Cass, 1984
8. Hodder, R., Development Geography, London, Routledge, 2000
9. IFAD, Assessment of Rural Poverty: Asia and the pacific, Rome: IFAD, 2002
10. Johnson E. A. J., The Organization of Space in Developing Countries, Harvard University Press, Cambridge, 1970
11. Lipton, M., Why Poor People Stay Poor (A Study of Urban Bias in World Development), Temple Smith, 1977
12. Lo, Fu-Chen, (ed.): Rural-Urban Relation and Regional Development, Maruzen Asia, 1981
13. Potter, R. B., and T. Unwin: The Geography of Urban Rural Interaction in Developing Countries, Routledge, 1989
14. Rondinelli, D.A., Secondary Cities in Developing Countries (Policies for Diffusing Urbanization), Sage Publication, 1983
15. Sachs, W., The Development Dictionary: A Guide to Knowledge as Power, London: Zed Books, 2000

M.A/Msc. Geography
Third Semester
Paper IV (43364 C) Cultural geography

Unit – I

a) Definition, nature, development and scope of cultural geography
b) Cultural elements, Environment and culture, components of culture
c) Divergence process and convergence process
d) Cultural changes: perception, behaviouralism and cultural relativism

Unit – II

a) Races of mankind: origin, traits and classification
b) Cultural diversity: nature and bases
c) Language: evolution, dispersion, classification and distribution
d) Religion: evolution, dispersion, classification and distribution

Unit – III

a) Origin and dispersion of agriculture
b) Industrial revolution and cultural development
c) Economy and society of tribal groups, theories of tribal groups; dwelling places as cultural explorations
d) Economy and cultural landscape

Unit – IV

a) Human settlements: relation to ideology

b) Social structure and technology
c) Pattern of rural & urban society
d) Social process in the city

Unit – V

a) World cultural realms and regions
b) Cultural regions of Europe
c) Cultural regions of Indian Sub-continent
d) Globalization and culture conflicts

References:

1. Broek, J.C. and J.W. Webb, Geography of Mankind, McGraw Hill, New York, 1978
2. Crang, Mike, Cultural Geography, Routledge Publications, London, 1998
3. Harmandorf, Tribes of India, Oxford University Press, Delhi, 1989
4. Hazra, (ed.), Dimensions in Human Geography, Rawat Publication, Jaipur, 1997
5. Hutchinson and D. Smith, Ethnicity, Oxford University Press, Oxford, 1996
6. Jordon and G. Lester, The Human Mosaic, Harpar & Row, New York, 1979
7. Massey, D and Jess P., A place in the World: Places, Cultures and Globalization, Oxford University Press, New York, 1995
8. Massey, D. et al (ed), Human Geography Today, Polity Press, Cambridge, 1999
9. Mukherjee, A.B. and A. Aijazuddin, India: Culture, Society and Economy, Inter-India Publication, New Delhi, 1985
10. Schwartzberg, J.E., Historical Atlas of South Asia, University of Chicago, 1978
11. Singh, A.K., Approaches to Tribal Development, Swarup and Sona, New Delhi, 1994
12. Sopher, D.E., Exploration of India: Geographical Perspectives on Society and Culture, Longman, London, 1980
13. Spencer, J.E. and William L. Thomas, Cultural Geography, John Willey and Sons, Inc., London, 1969
14. Steve. P and K. Michael (ed), Places and the Politics of Identity, Routledge, London, 1993
15. Wagner, Philip L. and Marvin W. Mikesell, Readings in Cultural Geography, The University of Chicago Press, Chicago, 1962

M.A./M.Sc. Geography
Third Semester
Paper – IV (43364 D) Biogeography

Unit - I

a) Nature, scope, development and relevance of biogeography
b) Zoogeographical provinces
c) Floral kingdom
d) Altitudinal zoning; eco-geographic trends

Unit – II

Biogeography processes and patterns

a) Evolution, adaptation, speciation and extinction
b) Dispersal and colonization
c) Habitats and microhabitats, limits of distribution and endemics
d) Relicts, disjunction patterns, patterns of rarity and patterns of biodiversity

Unit – III

Physical limitation of life

a) Environmental gradients; interaction of factors and patterns of climate
b) Biomes and life forms; soil; ecological succession, the ecosystem and microclimates
c) Island as an area of isolation, problems of access; variety of island habitats
d) Hazards of island life; opportunity for adaptive radiation

Unit – IV

Terrestrial major biomes: Study of biomes with reference to regional climate, vegetation, structure, ecological succession, species richness, geographical affinities, soils, faunal adaptations, mapping at a global level (Applicable for both Unit – IV and Unit - V)

a) Tundra and taiga
b) Temperate broadleaf
c) Deciduous forest
d) Tropical broadleaf evergreen forest

Unit – V

a) Tropical savannas
b) Desert scrub,
c) Mid-latitude grassland
d) Mediterranean scrub

References:

1. Cox, C.D. and Moore P.D., Biogeography: An Ecological and Evolutionary Approach 5th edn., Blackwell, 1993
2. Huggett, R.J., Fundamentals of Biogeography, Routledge, 2004
3. Llies,J., Introduction to Zoogeography, McMillan, London, 1974
4. Khoshoo, T.N. and Sharma M. (ed.), Indian Geo-sphere-Biosphere Har-Anand Publication, Delhi, 1991
5. Lapedes, D.N. (ed), Encyclopedia of Environmental Science, McGraw Hill, 1974
6. Mathur H.S., Essentials of Biogeography, Anuj Printers, Jaipur, 1998
7. Pears, N., Basic Biogeography 2nd edition, Longman, London,1985
8. Simmon I.G., Biogeography, Natural and Cultural, Longman, London, 1974
9. Tivy, J., Biogeography: A study of Plants in Ecosphere, Oliver an Boyd, 1992
10. Ian, N Healey, C. Barry Cox, Peter D. Moore, Biogeography: An Ecological and Evolutionary approach, Blackwell, Oxford, 1972
11. Pielou E.C., Biogeography, John Wiley, New York, 1973
12. Husain M., Biogeography, Anmol Publication, New Delhi, 1994

M.A./M.Sc. Geography
Third Semester
Paper – IV (43364 E) World Regional Geography

Unit – I

Asia

a) Asia in the context of the world
b) Terrain and drainage

c) Climate, natural vegetation and soils
d) Spatial distribution of population and economic base of the continent in general Regional study - West Asia

Unit- II

Europe

a) Europe in the contest of Asia and Africa
b) Terrain and drainage
c) Climate, natural Vegetation and Soils
d) Demographic and economic characteristics regional study Western Europe

Unit- III

Africa

a) Africa in the context of Europe and North America
b) Terrain and Drainage
c) Climate, natural vegetation and soils
d) Demographic and economic characteristics regional study Southern Africa

Unit- IV

North and South America

a) North and South America in the context of the Atlantic and Pacific Rim states
b) Terrain and drainage
c) Climate, natural Vegetation and Soils
d) Demographic and economic characteristics regional study of Middle America

Unit- V

Oceania; Global issues

a) Australia & New Zealand in the context of Polynesia, Micronesia and South Asia
b) Terrain and drainage
c) Climate, natural vegetation and soils
d) Demographic and economic characteristics; Globalization and W. T. O.; population, environment and sustainable development

Reference:

1. Cole, J., A Geography of the World's Major Regions, Routledge, London, 1996
2. Cole, J.P. , Latin America- Economic and Social Geography, Butterworth , USA, 1975
3. Cole. M.M. , South Africa, Dutton, New York, 1961
4. Blij, H.J. , Geography: Regions and Concepts, John Wiley & Sons Inc., New York, 1994
5. Dickenson, J.P. et al, The Geography of the Third World Routledge, London, 1996
6. Gourou, R. , The Tropical World. Longman, London , 1980
7. Jackson, R.H. and L. E. Hudman, World Regional Geography: Issues for Today, John
8. Kolb, A., East Asia : Geography of a Cultural Region, Methuen, London, 1977
9. Minshull, G. N., Western Europe, Hoddard & Stoughton, New York, 1984
10. Patterson, J. H., Geography of Canada and the United States, Oxford University Press, 1985
11. Songquiao, A., Geography of China, John Wiley & Sons Inc., New York, 1994
12. Ward, R. W. and A. Miller, World Regional Geography; A Question of Place, John Wiley & Sons Inc. , New York, 1989

M.A./M.Sc. Geography
Third Semester
Practical - I : (43365 A) Basics of Geographical Information System

Unit I:

Introduction to GIS

a) Definition, evolution and components of GIS
b) Representation of Geographical Data in GIS
c) Geospatial Data structure and formats
d) Data models: Raster and Vector data models

Unit II:

Coordinate Systems and Transformation

a) Datums, Ellipsoid , Geoid
b) Projected and Geographic Coordinate Systems, UTM Coordinate system
c) Coordinate transformation: Affine, Rubber Sheeting, Edge Matching
d) Geometric transformation: Map to Map, Image to Map transformation, Resampling, Root Mean Square Error

Unit III:

Data Generation and Database Management

a) GIS data sources; Use of Google Earth
b) Spatial data editing; Topology
c) Attribute data input and management: Data types, Data entry, Joining and relating tables, attribute data manipulation
d) Data visualization and cartography; Map composition

Unit IV:

Data Exploration

a) Descriptive statistics
b) Spatial data query, Attribute data query
c) Raster data query
d) Data generalization; data classification; zonal statistics

Unit V:

Introductory Spatial Analysis

a) Types of spatial analytical functions in GIS
b) Buffering
c) Overlay
d) Remote Sensing and GIS data integration; Sources of error

Practical exercises will be done using GIS software - QGIS, ArcGIS, ArcView, TNTMips or any other GIS software available in the department. One computer per student will be provided. Students will be required to prepare a record work of the outputs of all exercises conducted in the lab. In addition the students will also be required to submit the outputs in soft copy in a CD.

Lab Exercises (No. of exercises):

1. Familiarization with the software (1)
2. Importing raster data in GIS (1)
3. Geo-referencing and projecting a toposheet (1)
4. Geo-referencing and projecting a scanned map (1)
5. Generation of vector- point, line & polygon data - generating attribute data -GIS software (3)
6. Generation of vector- point, line & polygon data - generating attribute data - Google Earth (3)
7. Linking spatial and aspatial data- Table join (Excel file) (1)
8. Data visualization (2)
9. Computation of descriptive statistics (2)
10. Attribute data query (1)
11. Spatial data query (1)
12. Data generalization (1)
13. Data classification (1)
14. Computation of zonal statistics (2)
15. Generation of buffer zones - point, line & polygon data (3)
16. Overlay operations (3)

Distribution of Marks **Total Marks 100**

A Part – Basics of Geographical Information System (40 marks)

Practical paper of three hours duration will be held along with main theory paper examination.

Section – A Objective type 5 marks. Asked 10 questions, attempt all questions.

Section – B Short Answers – 20 marks, Asked 10 questions, one question from each unit and attempt five questions.

Section-C Descriptive type-15 marks ,Asked 5 questions, one question from each unit and attempt two questions

Practical – Assessed by External Examiner

Part B-Basics of Geographical Information System – 60 marks

I. A -Test paper Lab exercise – 35 marks (25+10),

II. Practical exercise shall be of three hours duration and of 25 marks and candidates will be required to attempt any 2 exercises out of 4. One based on computer.

B - Record work – 20 marks

C - Viva-voce – 10 marks

References:

1. Bernhardsen, Tor, 1992. Geographic Information Systems: An Introduction. Wiley India
2. Burrough, P.A. and McDonnell, R., 1998. Principles of Geographic Information Systems. Oxford University Press, Oxford
3. Chang, Kang-tsung, 2003. Introduction to Geographical Information Systems. Tata McGraw Hill Publ. Co., New Delhi
4. Chauniyal, D.D., 2004. Remote Sensing and Geographical Information Systems (**in Hindi)**, Sharda Pustak Bhawan, Allahabad
5. Clarke, Keith C., 2003. Getting Started with Geographical Information Systems. Prentice Hall
6. Demeers, Michael N., 2000. Fundamentals of Geographical Information Systems, John Wiley, Singapore
7. Heywood, Ian, 2003. An Introduction to Geographical Information Systems. 2nd Ed. Pearson Publ. Co., Singapore

8. Lo, C.P. and Yeung, Albert K. W. 2002. Concepts and Techniques of Geographic Information Systems. Prentice Hall of India, New Delhi.
9. Longley, P., Goodchild, M.F., Maguire, D. and Rhind, D. 1999. Geographic Information Systems. Principles, Techniques, Management, Applications. John Wiley, New York.
10. Reddy, M. Anji 2001. Textbook of Remote Sensing and Geographic Information Systems. B. S. Publs., Hyderabad.

WEB RESOURCES

1. www.qgistutorials.com
2. http://www.pasda.psu.edu/tutorials/gisbasics.asp

M.A./M.Sc. Geography
IIIrd Semester
Practical - II : (43365 B –I) Field Studies- Socio-Economic Survey project report

Main objective of the socio-economic survey project report or the Field work is to provide the students with the understanding of a chosen village/ town area by observation, mapping of land quality, land use and cropping pattern and conducting socio-economic survey of the household with the help of a special prepare schedule, supplement the information by personal observations and reasoned perceptions

(Minimum 50 Households)

Procure a Toposheet map of R.F. 1:50,000 or 1:25,000 scales to study the settlement selected in its regional setting. Collect demographic, social & economic data of the village/town from latest census reports to study the temporal changes in the profile or such characteristics. Prepare the settlement site map through rapid survey to maps the residential, commercial, recreation (parks and playgrounds), and educational, religious and other prominent features. Based on results of the land use and socio-economic enquiry of the households, prepare a critical project report. Photographs and sketches in addition to maps and diagrams may supplement the report.

Note: Department will allots supervisor and each student submit Socio Economic Survey Project Report (70-100pages)

Reference:

1. Cole, John P. and Cuchlaine, A.M. King, Quantitative geography: Techniques and theories in geography, John Willey and Sons Ltd., London, 1970.
2. Turabian, Kate L., A manual for wriers of term paper, theories and dissertations, University of Chicago press, Chicago, 1973
3. Yohng Pauline V., Scientific Social survey and Research: An introduction to the Background, content, methods, principles and analysis of social studies, Prentice-Hall of India Private Ltd., New Delhi, 1982
4. Kothari, C.R., Research Methodology, Methods and Techniques, Wiley Eastern Ltd., New Delhi

Distribution of Marks **Total Marks 100**

Socio-Economic Survey Project Report

1. Distribution of marks of Project Report will be as follows:

a. Project Report 75 marks
b. Seminar Presentation 25 marks

M.A./M.Sc. Geography
Fourth Semester
Paper – I (44361) Environment Geography

Unit – I

a) Environment: meaning, elements, and types
b) Human ecology: meaning, scope and concepts
c) Principles of environmental geography
d) Man-environment relationship: review of different perspectives

Unit – II

a) Ecosystem: concept, definitions, characteristics and types
b) Components and functioning of ecosystem
c) Trophic level, food chain and ecological pyramids; energy flow in ecosystem
d) Geo-chemical cycles and circulation of element in the ecosystem: carbon cycle, nitrogen cycle and oxygen cycle

Unit – III

a) Fresh water ecosystems: meaning, types and their properties
b) Marine ecosystems: meaning, types and their properties
c) Terrestrial ecosystems: meaning, types and their properties
d) Biomes: concept, types, characteristics and distribution; detail study of tropical desert biomes

Unit – IV

a) Environmental hazards and disasters: meaning, types and impacts
b) Environmental degradation and pollution: meaning, process, causes, types and impacts
c) Environmental planning and management: concept, objectives and strategies
d) Sustainable development: concept, need, problems and strategies

Unit – V

a) Ecology of tropical farming systems
b) Mountain ecosystem with special reference to Aravalli hills
c) The Stockholm Conference and the Earth Summit
d) Environmental laws in India related to wild life, water, forest and environment

References:

1. Ackerman, E.A., Geography as a Fundamental Research Discipline, University of Chicago Research Papers, 1958
2. Agarwal, A. and S. Sen, The Citizens Fifth Report. Centre for Science and Environment New Delhi 1999
3. Arwill, R., Man and Environment, Pelican
4. Barry, C., Biogeography: An Ecological and Evolutionary Approach, Cox Blackwell, Oxford, 1977

5. Bertalanffy, L., General Systems Theory, George Bragiller New York, 1958
6. Bodkin, E., Environmental Studies, Charles E. Merril Publishing Co., Columbus, Ohio, 1982
7. Chandna, R.C., Environmental Awareness, Kalyani Publishers, New Delhi, 1998
8. Chorley, R. J., Geomorphology and General Systems Theory, U.S.G.S. Professional Paper, 500 B, 1962
9. Eyre, S. R. and G. R. J. Jones (eds.), Geography as Human Ecology, Edward Arnold, London, 1966
10. Haggett, R. J., Fundamentals of Biogeography, Routledge, London, 1988
11. Haggett, R. J., Geo-ecology: An Evolutionary Approach, Routledge, London, 1995
12. Joy, T., Biogeography: A Study of Plants in the Ecosphere, Longman Science & Tech., U. K., 1993
13. Kormondy, E. J., Concepts of Ecology, Prentice Hall, 1989
14. Manners, I.R. and M. W. Mikesell (eds.), Perspectives on Environment, Commission on College Geography, Publication No. 13, Washington, D.C., 1974
15. Moore, R., Man in the Environment, McGraw Hill
16. Murphy, E. F., Man and His Environment, Harper & Row
17. Nobel and Wright, Environmental Science, Prentice Hall, New York 1996
18. Odum, E. P., Fundamentals of Ecology, W. B. Saunders, Philadelphia, 1971
19. Odum-Fugene, P., Fundamentals of Ecology, W. B. Sounders Company
20. Ramade Francois, Ecology of Natural Resource, John Wiley & Sons, New York, 1984
21. Russwurm, L.H. and E. Sommerville (eds.), Man's Natural Environment: A Systems Approach, Duxbury, Massachusetts, 1985
22. Sharma, H.S., Ranthambhore Sanctuary: Dilemma of Eco-Development, Concept Publishing Company, New Delhi, 2000
23. Sharma, P. D., Elements of Ecology, Rastogi Publication
24. Simmons, I. G., Ecology of Natural Resources, Edward Arnold, London, 1981
25. Singh, S., Environmental Geography, Prayag Publications, Allahabad, 1991
26. Singh, Savinder, Environmental Geography, Prayag Pustak Bhavan, Allahabad, 2000
27. Smith, R. L., Ecology of Man: Ecosystem Approach, Harper and Row
28. Smith, R.L., Man and His Environment: An Ecosystem Approach, Harper & Row, London, 1992
29. Spellrberg, I. F. and J. W. D. Sawyer, An Introduction to Applied Biogeography, Cambridge, University Press, 1999
30. Stoddart, D. E., Geography and the Ecological Approach, Geography, Vol. 50, pp 242-51, 1965
31. Strahler, A. N., Geography of man's Environment, John Wiley & Sons Inc. New York
32. Tiwari, Vijai Kumar, Environment and Ecology, Himalaya Publishing House, Mumbai, 1998, (Hindi)
33. U. N. E. P., Global Environmental Outlook, U. N. Publication, New York, 1998
34. Verma, P. S., and V. K. Agrawal, Principles of Ecology, S. Chand & Company, New Delhi, 1996
35. World Resources Institute, World Resources 2000-01, People and Ecosystems, Washington, 2001
36. World Watch Institute, State of the World, (Latest Report), Washington D C
37. सक्सेना, एच. एम. : पर्यावरण एवं पारिस्थितिकी भूगोल, राज. हिन्दी ग्रन्थ अकादमी, जयपुर।
38. सक्सेना, एवं उपाध्याय : मानव एवं पर्यावरण, के.डी. प्रकाषन, अजमेर।
39. राव, बी. पी. एवं बी. के. श्रीवास्तव : पारिस्थितिकी विज्ञान, वसुन्धरा प्रकाषन, गोरखपुर।
40. नेगी, बी. एस. : पारिस्थितिकी एवं पर्यावरण भूगोल, रस्तोगी प्रकाषन, मेरठ।
41. रघुवंषी, अरूण एवं चन्द्रलेखा : पर्यावरण एवं प्रदूषण, मध्यप्रदेष हिन्दी ग्रन्थ अकादमी, भोपाल।

M.A./M.Sc. Geography
Fourth Semester
Paper – II (44362) Quantitative Methods in Geography

Unit –I

a) Definition & History of Quantitative Geography
b) Significance & Utilization of Quantitative Methods in Geography
c) Nature & Levels of measurement – Qualitative and Quantitative
d) Graphical Presentation of Data –Bar, Pie, Ogive (cumulative histogram), Frequency curve

Unit –II

a) Measure of Central Tendency – Mode, Median & Mean
b) Skewness and Kurtosis
c) Measures of deviation – types
d) Mean deviation, Standard deviation, Coefficient of Variation, Z-scores

Unit –III

a) Gini- coefficient of concentration and Lorenz Curve
b) Geographic Relationship- Correlation
c) Carl Pearson Correlation; Spearman's Rank Correlation
d) Regression Analysis – Linear regression

Unit –IV

a) Assessment of Probability –Z Score
b) Tests of Statistical Significance : T-Test ,Chi-Square test , ANOVA
c) Composite Index analysis
d) Matrices – Types and inversion of matrices

Unit –V

a) SPSS : Interface
b) Data entry and manipulation
c) Data analysis in SPSS – Mean, SD and CV using SPSS
d) Regression and Correlation using SPSS

References:

1. Chou, Ya-Lun, Statistical Analysis: With Business and Economic Applications, Holt, Rinehart and Winston, New York, 1975.
2. Cole, J. P. and C. M. A. King, Quantitative Geography: Techniques and Theories in Geography, John Wiley and Sons Ltd., London, 1970.
3. Gregory, S., Statistical Methods and the Geographer, Longman Group Ltd. London, 1978.

4. Hammond, Robert and Patrick McCullagh, Quantitative Techniques in Geography: An Introduction, Oxford University Press, London, 1978.
5. Hebden, Julia, Statistics for Economists, Heritage Publishers, London, 1990.
6. Johnston, R. J., Multivariate Statistical Analysis in Geography, Longman Group Ltd. London, 1978.
7. Kundu, Amitabh, Measurement of Urban Processes: A study of Regionalisation, Popular Prakashan Private Ltd., Bombay, 1980.
8. Silk, J., Statistical Concepts in Geography, George Allen and Unwin, London, 1980.
9. Wilson, A. H. and M. J. Kirkby, Mathematics for Geographers and Planners, Oxford University Press London 1982.
10. नागर, कैलाषनाथ : साख्यिकी के मूल तत्व, मीनाक्षी प्रकाषन

M.A./M.Sc. Geography
Fourth Semester
Paper – III (44363) Industrial Geography

Unit – I

a) Nature and scope of industrial geography, recent development in industrial geography
b) Classification of industries: bases and characteristics
c) Elements and factors of industrial localization, centralization and decentralization of industrial enterprises
d) Horizontal, vertical and diagonal linkages of industries

Unit – II

Basic economic concepts, theories and models of industrial locations:

a) Demand, supply and price; marginal cost and average cost
b) Economies of scale and agglomeration and related concepts
c) A. Weber, E. M. Hoover, August Losch, A. Fetter, G. T. Renner
d) A. Pred, Palander Tord, D. M. Smith, E. M. Rawstron, Bos H. C. & Hamilton

Unit – III

Geographical analysis of selected industries in the world with reference to India:

a) Copper, Aluminium and Iron and steel
b) Pulp and paper, Textile
c) Oil refining, shipbuilding and software industries
d) Locational analysis of zinc and cement industries of Rajasthan

Unit – IV

a) Industrial location and spatial distribution analysis and measures: coefficients of localisation, specialisation, geographic association and index of diversification
b) Delimitation of industrial regions: indices and methods
c) Study of major industrial regions of the world: Great Lakes region and Lancashire region
d) Major industrial regions of India

Unit – V

a) Environmental degradation and hazards caused by manufacturing industries
b) Impact of industries on economic development
c) Role of globalisation on manufacturing sector in less developed countries
d) Shifting of industries and its impact on the urban fringe

References:

1. Adam, Watter, Structure of American Industry, Macmillan & Co., New York
2. Alexander, J. W., Economic Geography, Prentice Hall, New York
3. Alexanderson, G., Geography of Manufacturing, Prentice Hall, New York, 1967
4. Bengston, N. A. and V. L. Royen, Fundamental of Economic Geography, Prentice Hall, New York
5. Boesch, H., A Geography of World Economy, D. Van-Nostrand Co., New York, 1964
6. Britton, John N. H., Regional Analysis and Economic Geography, G. Bell & Sons
7. Carlson, A. S., Economic Geography of Industrial Materials, Rinchart Publishing Corporation
8. Eastall, R. C. and R. O. Buchanan, Industrial Activity and Economic Geography, Hutchinson, London
9. Hoover, E. M., The Location of Economic Activity, McGraw Hill, New York, 1948
10. Joshi, Hemlata , Industrial Geography of India: A Case History of Fertiliser Industry, Rawat Publishers, Jaipur
11. Lloyd, P. and P. Dicken, Location in Space: A Theoretical Approach to Economic Geography, Harper and Row, New York, 1978
12. Losch, August, The Economics of Location, Yale University Press, London, 1973
13. McCarty, Harold H. and Lindberg, A Preface to Economic Geography, Prentice Hall, New York
14. Miller, E. W., A Geography of Manufacturing, Prentice Hall, New York, 1962
15. Renner, G. T., Geography of Industrial Localisation, Economic Geography, Vol. 23, 1947
16. Riley, R. C., Industrial Geography, Chatto and Windus, London, 1973
17. Saushkin, Yu. G., Economic Geography: Theory and methods, Progress Publishers, Moscow, 1980
18. Smith, D. M., Industrial Location: An Economic Geographical Analysis, Wiley, New York, 1971
19. Weber, Alfred, Alfred Weber's Theory of Location of Industries, Chicago University Press, Chicago, 1929
20. Yaseen, Leonard, Plant Location, American Research Council, New York
21. कुमार, प्रमिला एवं षर्मा, श्रीकमल : औद्योगिक भूगोल, मध्यप्रदेष हिन्दी ग्रन्थ अकादमी
22. लोढा, राजमल : औद्योगिक भूगोल, राजस्थान हिन्दी ग्रन्थ अकादमी

M.A./M.Sc. Geography
Fourth Semester
Paper – IV (44364 A) Population and Settlement Geography

Unit – I

a) Meaning, scope and development of population geography
b) Sources of data: population counts and census; sample data; reliability of data and problems of mapping population data; data errors and their detection and correction
c) Measures of population distribution; world pattern of population distribution; determinants of population distribution
d) Population distribution in India: patterns and determinants

Unit – II

a) Population growth since prehistoric period; demographic transition theory and population growth models
b) Mortality analysis, patterns and its determinants
c) Fertility analysis, fertility patterns and its determinants
d) Growth of population in India: patterns, components and determinants

Unit – III

a) Age structure and sex composition
b) Educational composition; urbanization
c) Economic characteristics and occupational structure
d) Population composition of India: characteristics and problems

Unit – IV

a) Migration: types and determinants
b) Population and development; population-resource regions
c) Population and environment
d) Population policies in developed and less developed countries; population policy of India

Unit – V

a) Evolution, size and spatial distribution pattern of human settlements and related theories and models
b) Physical structure of settlements; internal characteristics and external forms
c) Functional structure of settlements; functional classification of towns and functional typology of villages; functional landscape of settlements
d) Settlement hierarchy: concept and contributing factors

References:

1. Bhende, Asha A. and Tara Kanitkar, Principles of Population Studies, Himalaya Publishing House
2. Bilasborrow, Richard E. and Daniel Hogan, Population and Deforestation in the Humid Tropics, International Union for the Scientific Study of Population, Belgium, 1999
3. Bogue, D. J., Principles in Demography, John Wiley and Sons, New York, 1969
4. Bose, Ashish et al, Population in India's Development: 1947-2000, Vikas Publishing House, New Delhi, 1974
5. Census of India, India: A State Profile, 1991
6. Chandana, R. C., Introduction to Population Geography, Kalyani Publishers, Ludhiana, 2000
7. Chisholm, M. (1962): 'Rural Settlements and Land use', London
8. Clarke, John I., Population Geography and the Developing Countries, Pergamon Press Inc., Oxford, 1971
9. Clarke, John I., Population Geography, Pergamon Press Inc., Oxford, 1973
10. Crook, Nigel, Principles of Population and Development, Pergamon Press, New York, 1997
11. Daugherty, Helen Gin, and Kenneth C. W. Kammeyir, An Introduction to Population, The Guilford Press, New York, 1998
12. Demko, Geogre, J. et al, Population Geography, A Reader, McGraw Hill, New York, 1970
13. Garnier, Beaujeu J., Geography of Population, Longman, London, 1970
14. Hudson, R. S. (1970): 'A Geography of Settlements', McDonald and Sons, London
15. Kochhar, Rajesh, The Vedic People: Their History and Geography, Orient Longman Ltd., New Delhi, 2000
16. Mamoria, C. B., India's Population Problems, Kitab Mahal, New Delhi, 1981
17. Mitra, Asok, India's Population: Aspects of Quality and Control, Volume I & II, Abhinav Publications, New Delhi, 1978
18. Pathak, K. B. and F. Ram, Techniques of Demographic Analysis, Himalaya Publishing House
19. Peterson, William, Population, Macmillan Publishing Company, Inc., New York, 1975
20. Premi, M. K., India's Population: Heading Towards a Billion, S. R. Publishing Corporation, New Delhi, 1991
21. Shryock, Honry, S et al, The Methods and Materials of Demography, Volume I & II, U. S. Bureau of the Census

22. Srinivasan, K. and M. Vlassoff, Population Development Nexus in India: Challenges for the New Millennium, Tata McGraw Hill, New Delhi, 2001
23. Srinivasan, K., Basic Demographic Techniques and Applications, Sage Publications, New Delhi, 1998
24. Sundaram K. V. and Sudesh Nangia (eds.), Population Geography, Heritage Publications, Delhi, 1986
25. Trewartha, G. T., A Geography of Population: World Patterns, John Wiley & Sons, New York, 1973
26. Trewartha, Glenn T. (ed.), The More Developed Realm, A Geography of its Population, Pergamon Press, Oxford, 1978
27. UNDP, Human Development Report, Oxford University Press, Oxford, 2000
28. United Nations, Methods for Projections of Urban and Rural Populations, No VIII, New York 1974
29. United Nations, The Determinants and Consequences of Population Trends, Volume I, Population Studies No 50
30. Woods, Robert, Population Analysis in Geography, Longman, London, 1979
31. Zelinsky, Wilbur, A Prologue to Population Geography, Prentice Hall, 1966

M.A./M.Sc. Geography
Fourth Semester
Paper – IV (44364 B) Geography of SAARC Countries

Unit – I

Introduction to land, people and economy of SAARC countries

a) Afghanistan
b) Bangladesh
c) Bhutan
d) India

Unit – II

a) Maldives
b) Nepal
c) Pakistan
d) Sri Lanka

Unit – III

a) World regional organizations and SAARC
b) Regional The genesis, objectives, principles and general provisions of SAARC
c) Institutional setup of SAARC
d) Regional integrated programmes of SAARC

Unit – IV

Regional development, regional cooperation and potential of SAARC countries with reference to: (Applicable for Unit – IV and Unit – V)

a) Water and marine resources
b) Energy resources
c) Mineral resources
d) Forest resources

Unit – V

a) Human resource development
b) Agriculture and rural development
c) Industrial development
d) Transport and communication

References:

1. Abbasi, Bushra Afzal, Geography of South Asia, Sang-e-Meel, 2008
2. Ahsan, Abul, SAARC: A Perspective, University Press, 1992
3. Blij, H. J. de and Peter O. Muller, Geography: Realms, Regions and Concepts, 14th Edition, John Wiley & Sons, Inc., 2010
4. Bose, Sugata and Ayesha Jalal, Modern South Asia: History, Culture, Political Economy, 2nd edition, Routledge, 2004
5. Chopra, Pran, Future of South Asia, Macmillan India Ltd., New Delhi, 1986
6. Farmer, B. H., Introduction to South Asia, Methuen, London, 1983
7. Fujiwara, Kenzō Fujiwara and Hiroshima Daigaku, Recent trends and Perspectives in Regional Geography of South Asia: the First International Seminar of Research Center for Regional Geography, Issue 18 of Sōgō Chishiken kenkyū sōsho, Research Centre for Regional Geography, University of Hiroshima, 1989
8. Jackson, Richard H., Lloyd E. Hudman, World Regional Geography: Issues for Today, Study Guide, 3rd Edition, John Wiley & Sons, Inc., 1990
9. Qureshi, M.L., Survey of Economy, Resources and Prospects of South Asia, Marga Institute and Third World Foundation, Colombo, 1981
10. Raghavan, S. N., Regional Economic Cooperation among SAARC Countries, Allied Publishers, 1995
11. Raghavan, S. N., Research and Information System for the Non-aligned and Other Developing Countries, Interest Publications, 1990
12. SAARC, Milestones in the Evolution of Regional Cooperation in South Asia – Vol. I to VII, SAARC
13. Shafi, Mohammad, Agricultural Geography of South Asia: India, Pakistan, Bangladesh, Sri Lanka, Nepal, Bhutan, and Maldives, Macmillan India, 2000
14. Siriwardarna, A. Mahinda, The Impact of Trade Liberalisation on the Rice Sector in SAARC Countries: the Case of Bangladesh, ICFAI Books, 2006
15. Spate, O.H.K., India and Pakistan: A General and Regional Geography, Methuen,
16. Spear, Percival, India, Pakistan and the West, Read Books Publishers, 2007
17. Weightman, Barbara A., Dragons and Tigers: a Geography of South, East and Southeast Asia, 2nd edition, John Wiley & Sons, 2005
18. Yasmeen Niaz Mohiuddin, Pakistan: a Global Studies Handbook, ABC-CLIO Publishers, 2007

M.A./M.Sc. Geography
Fourth Semester
Paper – IV (44364 C) Geography TSP Region

Unit – I

Tribal sub plan area of Rajasthan: Delimitation of TSP by planning commission, Geology, physical divisions, drainage pattern, soil structure, vegetation, agricultural production, Irrigational sources

Unit – II

Natural resources: water resources, underground water level, surface water resources, Irrigation projects, Jhakham, Som Kamla Amba and case study of Mahi Bajaj Sagar project

Mineral resources: Distribution and environmental planning

Unit – III

Population distribution; density; literacy: Geographical variation in Rural-urban, male-female literacy; occupational structure: primary occupation, Fishing Mining, Cottage Industries, Forest based Industries, Bio product Industries

Unit – IV

Tribal area development scheme: central government and state government scheme, development of social amenities, Education, Medical, drinking water, transport network

Unit – V

Urban growth and urbanization, development of service centre, growth centre, tribal area planning, ecological planning and future planning

References:

1. Bhalla. L. R.., Rajasthan ka Bhugol, Kuldeep Publication, Ajmer (Hindi)
2. Census of India, Rajasthan Series, General Population Tables of 1961 to 2001
3. DST (Govt. of Rajasthan), Resource Atlas of Rajasthan, Jaipur
4. Govt. of Rajasthan, Statistical Abstract (Latest edition) Jaipur
5. Mishra, V. C. Geography of Rajasthan, National Book Trust, New Delhi
6. NCEAR, Techno- economic survey of Rajasthan, Volume I and II New Delhi
7. Publication Division, Govt. of India, (Latest edition) New Delhi
8. Spate, O.H.K., India and Pakistan, Methuen, 1960
9. Dissertations of MA / M. Phil and Ph. D
10. Bhattacharya, A. N., Geography of Mewar, Himanshu Publication, Udaipur
11. चौहान, तेजसिंह : राजस्थान का भूगोल, विज्ञान प्रकाषन, जोधपुर
12. लोढ़ा, राजमल एवं माहेष्वरी, दीपक : राजस्थान का भूगोल, हिमांषु पब्लिकेषन, उदयपुर
13. मामोरिया, चतुर्भुज व जैन शेषमल : राजस्थान का भूगोल, साहित्य भवन पब्लिकेषन, आगरा
14. सक्सेना, एच. एम. : राजस्थान का भूगोल, राजस्थान हिन्दी ग्रन्थ अकादमी, जयपुर
15. विजयवर्गीय, राम रक्षपाल : राजस्थान का भू–विज्ञान एवं खनिज सम्पदा, राजस्थान हिन्दी ग्रन्थ अकादमी, जयपुर

M.A./M.Sc. Geography
Fourth Semester
Paper – IV (44364 D) Social Geography

Unit – I

a) Nature, scope and development of social geography, philosophical bases of social geography
b) Positivist, structuralist and radical
c) Humanist, post-modern, and post-structuralist
d) Social geography in the realm of social sciences

Unit – II

a) Space and society
b) Understanding society and its structure and processes
c) Geographical bases of social formations; power relations and space
d) Contribution of social geography to social theory

Unit – III

a) Towards a social geography of India; nature and problems of social geographic data
b) Social differentiation and region formation; evolution of socio-cultural regions in India
c) Bases of social region formation; role of caste, ethnicity, religion, dialect and languages
d) Indian unity and diversity; social transformation and change in India.

Unit IV

a) Concepts of social well-being and physical quality of life
b) Human development: concept, components, indices and measurement
c) Patterns and bases of rural and urban society; rural-urban deprivation with respect to shelter, health and education
d) Social exclusion, deprivation and discrimination issues relating to women and underprivileged groups

Unit – V

a) Spatial distribution of social groups: tribes, castes, religious and language groups
b) Social groups and power relations in India
c) Review of five-year plans and area plans towards social policy in India
d) Strategies to improve social well-being in tribal, hill and drought prone areas; social and environmental impact assessment of development projects

References:

1. Ahmad, Aijazuddin, Social Geography, Rawat Publication, New Delhi, 1999
2. Casino, Vincent J. Del, Social Geography: A Critical Introduction, Wiley-Blackwell, 2009
3. Churye, B. S., Caste and Class in India, Popular Prakashan
4. Davis, K., Population of India and Pakistan, Princeton University Press
5. de Blij, H. J., Human Geography, John Wiley and Sons, New York
6. Dreze, Jean and Amartya Sen, Economic Development and Social Opportunity, Oxford University Press, New Delhi, 1996
7. Dubey, S. C., Indian Society, National Book Trust, New Delhi, 1991
8. Geddes, A. and A. T. A. Learmonth (eds.), Man and Land in South Asia, Concept Publishing Co., New Delhi
9. Government of India, Economic and Socio-Cultural Dimensions of Regionalization, Census of India, Census Centenary Monograph No.7, 1974
10. Government of India, Report on Development of Tribal Areas, Planning Commission, 1981
11. Gregory, D and J. Larry, (eds.) Social Relations and Spatial Structures, McMillan, 1985
12. Guha, B. S., Racial Elements in India's Population, Oxford University Press, London
13. Haq, Mahbubul, Reflections on Human Development, Oxford University Press, New Delhi
14. Jones, E. (ed.), Readings in Social Geography, Oxford University Press, London
15. Jones, E. and J. Eyles, An Introduction to Social Geography, Oxford University Press, London
16. Maloney, Clarence, People of South Asia, Winston, New York, 1974
17. Rao, M. S. A., Urban Sociology in India, Orient longman, 1970
18. Rao, M. S. A., Urbanisation and Social Change, Orient Longman
19. Rao, Subba, Personality of India: Pre and Proto Historic Foundation of India and Pakistan, M. S. University Baroda, Vadodara, 1958
20. Risley, H., The People of India, Reprint Corporation

21. Schwartzberg, Joseph, An Historical Atlas of South Asia, University of Chicago Press, Chicago, 1978
22. Sen, Amartya and Dreze Jean, Indian Development: Selected Regional Perspectives, Oxford University Press, London, 1996
23. Singh, K. S., Tribal Situation in India, IIAS, Shimla
24. Smith, David, Geography: A Welfare Approach, Edward Arnold, London, 1977
25. Sopher, David: An Exploration of India, Cornell University Press, 1980

M.A./M.Sc. Geography
Fourth Semester
Paper – IV (44364 E) Geography of Tourism

Unit – I

a) Nature and meaning of geography of tourism: scope of tourism geography study approaches: early approaches, holistic, epistemological and technical
b) Elements of tourism: tourism as an industry
c) Factors influencing tourism: natural, historical, socio-cultural and economic
d) Pilgrimages and its motivating factors; leisure; recreation

Unit – II

a) Historical perspective of movement: curiosity and exploration
b) The development of modern tourism and its conceptual framework
c) Types of tourism: cultural, ecological, ethno, coastal and adventure tourism; national and international tourism, globalization and tourism
d) Classification of travelers/tourists: bases and characteristics

Unit –III

a) Types of resorts: natural, cultural and historical
b) The structure and problems of tourism industry: Accommodations, food, travel organizations – local, national and international
c) The economic and social significance of tourism; Local and global impacts of tourism - environmental, economic and socio-cultural
d) Demand for tourism: the system of equation approach, almost ideal demand system (AIDS), the single equation approach

Unit – IV

Tourist industry in India:

a) History of travel in India
b) Physical attributes and cultural heritage of India as tourist destination
c) Types of tourists; origin and destination of tourists
d) Problems associated with accommodation, transportation and food; impact of tourism; role of ITDC and other agencies in promotion of tourism; current trends

Unit – V

Tourist industry in Rajasthan:

a) Salient features of tourism in Rajasthan
b) Physical attributes and cultural heritage of Rajasthan as tourist destination
c) Types of tourists; origin and destination of tourists
d) Problems associated with accommodation, transportation and food; impact of tourism; role of RTDC and other agencies in promotion of tourism; current trends

References:

1. Ananad, M. M., Tourism and Hotel Industry in India, Prentice Hall of India, New Delhi.
2. Archer, B. H., Demand Forecasting in Tourism, Cardiff University of Wales Press.
3. Archer, B. H., The Impact of Domestic Tourism , Cardiff University of Wales Press.
4. Bhatia A. K., Tourism Development: Principles and Practices, Sterling Publishers, New Delhi 1996.
5. Bhatia, A. K. International Tourism: Fundamentals and Practices, Sterling Publishers, New Delhi, 1991.
6. Bhatia, A. K., Tourism Development: Principles and Practices, Sterling Publishers, New Delhi, 1996.
7. Bhatia, A. K., Tourism in India: History and Development, Sterling Publishers, New Delhi.
8. Boniface, G. B. and C. P. Cooper, The Geography of Travel and Tourism, Heinemann.
9. Brunel, Francis, Rajasthan, UBS Publishers.
10. Bryden, John M., Tourism and Development, Cambridge University Press, London.
11. Burkert, A. J. and S. Medlik, Tourism: Past, Present and Future, Heinemann.
12. Chandra, R. H., Hill Tourism: Planning and Development, Kanishka Publishers, New Delhi, 1998.
13. Cooper C. P. et al, Progress in Tourism, Recreation and Hospitality Managerment, Vol I, II and III, CBS Publishers.
14. Deaton, A. and J. Muelbauer, Economics and Consumer Behaviour, Cambridge University Press, London.
15. Gandhi, Indira and Jean-Loveis Nov, Eternal India, B. L. Publications.
16. Gearing, C. E. et al, Planning for Tourism Development: Quantitative Approach, Praeges.
17. Government of India, Tourist Arrival in India: Highlights, Ministry of Tourism and Civil Aviation, New Delhi.
18. Government of Rajasthan, Progress Report, Department of Tourism, Art and Culture, Jaipur.
19. Government of Rajasthan, Theme Papers, Department of Tourism, Art and Culture, Jaipur.
20. Hunter, C. and H. Green, Tourism and the Environment: A Sustainable Relationship Routledge, London, 1995.
21. Hyzler, Stephen, Village India, Harry N. Abrams Inc. Publishers.
22. Inskeep, E., Tourism Planning: An Integrated and Sustainable Development Approach, Van Nostrand and Reinhold, New York, 1991.
23. Kadt, E. de (ed.), Tourism: Passport to Development, Oxford University Press, London.
24. Kaul, R. K., Dynamics of Tourism and Recreation, Inter-India, New Delhi, 1985.
25. Kaur, J., Himalayan Pilgrimages and New Tourism, Himalayan Books, New Delhi, 1985.
26. Lea, J., Tourism and Development in the Third World, Routledge, London, 1988.
27. Milton, D., Geography of World Tourism, Prentice Hall, New York, 1993.
28. Morae, Dom and Gopi Ajwani, A Journey Through India, Lustre Press.
29. Morae, Dom and Gopi Ajwani, A Passage through India, Lustre Press.
30. Morae, Dom and Gopi Ajwani, Delhi, Agra and Jaipur: The Golden Tringle, Lustre Press.
31. Morae, Dom and Gopi Ajwani, Rajasthan: Splendour in Wilderness, Himalayan Books.
32. Morae, Dom and Gopi Ajwani, The Himalaya, Lustre Press.
33. Nogi, J. N., Tourism and Hotelering: A Worldwide Industry, Gitanjali Publishers.
34. Pearce, D. G., Tourism To-day: A Geographical Analysis, Harlow, Longman, 1987.

35. Robinson, H., A Geography of Tourism, Macdonald and Evans, London, 1996.
36. Robinson, H., Geography for Business Studies, Macdonald and Evans, London.
37. Sharma, B. N., Festivals of India, Thomas and Gudsons.
38. Sharma, J. K. (ed.), Tourism Planning and Development: A New Perspective, Kanishka Publishers, New Delhi, 2000.
39. Shaw, G. and A. M. Williams, Critical Issues in Tourism: A Geographical Perspective, Oxford, Blackwell, 1994.
40. Sinha, P. C. (ed.), Tourism Impact Assessment, Anmol Publishers, New Delhi, 1998.
41. Theobald, W. (ed.), Global Tourism: The Next Decade, Oxford, Butterworth, Heinemann, Oxford, 1994.
42. Voase, R., Tourism: The Human Perspective, Hodder and Stoughton, London, 1995.
43. Wacziarg, F. and A. Path, Rajasthan: The Painted Walls of Shekhavati, Vikas, New Delhi.
44. Williams Stephen, Tourism Geography, Contemporary Human Geography, Routledge, London, 1998.
45. Williams, A. M. and G. Shaw (eds.), Tourism and Economic Development: Western European Experiences, Belhaven, London.

M.A. /M.Sc. Geography
Fourth Semester
Practical - I (44365 A): Digital Cartography & Model Making

Section-A (Digital Cartography)

Unit-I:

a) Nature, Scope and Concepts in Digital Cartography ,
b) Cartographic Visualization&; Geo-visualisation;
c) Analytical cartography;& virtual 3D web cartography;
d) Cartographic communication – virtual, cognitive, temporal and permanent maps,

Unit II:

a) Mapping Techniques Preparation of dot, Choropleth and isopleths map of cultural landscape. and symbol maps
b) Construction of diagrams and cartograms:- Construction of simple, comparative, compound line and deviated bar graphs.
c) Preparation of maps using proportional squares, circles and spheres and construction of value area cartograms.
d) Map composition: Symbolization, Map layout, Labeling and Annotation

Unit –III:

a) Over view to GIS and cartographic Packages – ARC GIS, ILWIS, GEOMEDIA, IDRISI;
b) Digital Cartographic Modelling Cartographic modelling and its type;
c) Habitat modelling; Modelling transport route for hazardous waste;
d) Modelling location of malls, hospitals, schools, airports etc; 3D modelling; TIN, DEM and GRID.

Section-B(Model Making)

Unit - IV

a) Concept and history of model making
b) Definition of topographic model
c) Relation of relief models with block diagrams
d) Methods of model making: peg method, contour layer method, positive and negative method

Unit – V

a) Media of model making: permanent and temporary (Sand, sawdust, pappier machie (pulp), plaster-of-Paris, plastic sheets, wax, hardboard etc.)
b) Everlasting media cement concrete, metal and acrylic transparent sheets, etc
c) Casting of relief models
d) Mould making techniques and media

Workshop practice/lab work/session work

Preparation of 10 jobs of relief features with the help of toposheet, aerial photographs and satellite imagery including one composite relief model (group work)

Lab exercises

a) Preparation and editing of data in Microsoft excel
a) Preparation and editing of data in SPSS
b) Generation of vector point, line, polygon map and cartographic symbolization
c) Map composition

Reference:
DIGITAL REF.

1. Allpress, J.D., Visual geography, Part-I [George Harrap]
2. Bagrew,L.: History of Cartography, C.A.Watts and Co., London, 1964.
3. Barrett,E.C. and Curtis,L.F.: Introduction to Environmental Remote Sensing, Chapman and Hall Ltd., London, 1976.
4. Bernhardsen, Tor, Geographic Information Systems, Viak IT, Longum Park, Norway, 1992
5. Bharadwaj, D. C., Pratiroop Nirman [Raj. Hindi Granth Academy, Jaipur]
6. Bharadwaj, D. C., Sthularekh [Raj. Hindi Granth Academy, Jaipur]
7. Lobeck, A.K. and Tellington, W.J., Military Maps and Air-Photographs [Mc Graw Hill]
8. Lobeck, A.K., Block Diagrams [John Wiley]
9. Mather, Paul M., 1991: Computer Applications in Geography, John Wiley & Sons, Inc., New York.
10. Monkhouse, F.J. and Wilkinson, H.R., Maps and Diagrams [Methuen]
11. Raisz, E., Principles of Cartography [Mc Graw hill]
12. Robinson, A.H., Elements of Cartography [John Wiley]
13. Rub, M.K., Casthkala Parichaya [Kitab Mahal]
14. Stamp. L.D., Models
15. Sylvester, D., Maps and Landscape [George Philip and sons] Allpress, J.D., Visual geography, Part-I [George Harrap]

Modal Ref.

1. Allpress, J.D., Visual geography, Part-I [George Harrap]
2. Bernhardsen, Tor, Geographic Information Systems, Viak IT, Longum Park, Norway, 1992
3. Bharadwaj, D. C., Pratiroop Nirman [Raj. Hindi Granth Academy, Jaipur]
4. Bharadwaj, D. C., Sthularekh [Raj. Hindi Granth Academy, Jaipur]
5. Lobeck, A.K. and Tellington, W.J., Military Maps and Air-Photographs [Mc Graw Hill]
6. Lobeck, A.K., Block Diagrams [John Wiley]
7. Monkhouse, F.J. and Wilkinson, H.R., Maps and Diagrams [Methuen]
8. Raisz, E., Principles of Cartography [Mc Graw hill]
9. Robinson, A.H., Elements of Cartography [John Wiley]
10. Rub, M.K., Casthkala Parichaya [Kitab Mahal]
11. Stamp. L.D., Models

Distribution of Marks **Total Marks 100**

A Part – Digital Cartography& Modal Making, (40 marks)

Practical paper of three hours duration will be held along with main theory paper examination.

Section – A Objective type- 5 marks. Asked 10 questions, attempt all questions.

Section – B Short Answers – 20 marks, Asked 10 questions, one question from each unit and attempt five questions.

Section-C Descriptive type-15 marks, Asked 5 questions, one question from each unit and attempt two questions

Practical – Assessed by External Examiner

B Part – **Digital Cartography& Modal Making** , (60 marks)

A Test paper Lab exercise – 30marks , asked 6 questions,Section A-Digital Carto.4 Quest.&Section B-Modal making-2 Quest. attempt three questions ,at least one question in each section and duration 3 hours

B -Record work – 15 marks

C -Viva-voce – 10 marks

M.A./M.Sc. Geography
Fourth Semester
Practical – II (44365 B) Geographical Techniques for Applied Geographical Research

GEO-SPATIAL TECHNIQUES FOR APPLIED GEOGRAPHICAL RESEARCH

The paper is divided into two Sections – A & B. Section A will comprise class room teaching and associated laboratory work of total 30 hrs. The students will be introduced to analytical techniques in remote sensing data processing and GIS, and their applications for applied geographical research. Subsequently, students will be required to take up a small case study lasting 30 hrs as Section -B, essentially applying the geospatial tools for decision making and analysis. The case study will be carried out under supervision of internal faculty of the department. Time allotted to Section B will comprise of preparation of proposal, execution of project and preparation of project report. The project report will be of approximately 30-50 pages.

SECTION –A

Unit I:

Digital Image Processing for Thematic Map Generation

a) Data preparation: Geometric and Radiometric corrections
b) Contrast Enhancement techniques, Manual Digitization
c) Digital Image Classification: Supervised and Unsupervised Classification
d) Accuracy assessment of classified maps

Unit II:

GIS Analysis

a) Methods of spatial Interpolation; Extraction of topographic attributes and landscape features using DEM

b) Pattern Analysis: Global indicators
c) Spatial Auto-correlation: Local indices
d) Spatial indices

Unit III:

Application of Remote Sensing and GIS

a) Natural resource evaluation and management
b) Urban planning and management
c) Land use planning and management
d) Environmental management & Hazard mapping

SECTION –B

Unit IV:

a) Selection of theme of project
b) Preparation of project proposal
c) Presentation of synopsis
d) Execution of Project

Unit V: Writing of project report

Theme of project may be selected from any of the fields outlined in Unit III or any other problem of student's/ supervisor's choice with a geographical perspective analysed using geo-spatial methodology. The theme may range from methodological issues to real world geographical applications. Students will be required to get the selected theme approved by the concerned supervising faculty by way of presentation of synopsis in a class seminar.

*** Laboratory Practical Exercises to be covered under Unit I ,II.**

1 Geo-referencing of Toposheets
2 Image to map rectification
3 Radiometric Correction of satellite images
4 Contrast Enhancement
5 Thematic Map Generation using Supervised Classification and accuracy assessment
6 Thematic Map generation using Unsupervised Classification and accuracy asessment
7 Spatial interpolation of point data using IDW, Krigging, Theissen Polygon methods and evaluation of results
8 Settlement Pattern Analysis- Nearest Neighbor technique
9 Computation of Geary's *c,* Global Moran's I & Getis-Ord General G Index and interpretation of results
10 Computation of Local Moran's I & Getis- Ord Gi * index and interpretation of results
11 Analysing distribution: spatial indices

Exercises will be implemented in ERDAS, ENVI, Illwis, QGIS, TNT Mips, Arc View, ArcGIS or any other DIP and GIS Software as per availability.

Distribution of Marks **Total Marks 100**

A Part – Geographical Techniques for Applied Geographical Research., **(40 marks)**

Practical paper of three hours duration will be held along with main theory paper examination.

Section – A	Objective type- 5 marks. Asked 10 questions, attempt all questions.
Section – B	Short Answers – 20 marks, Asked 10 questions, one question from each unit and attempt five questions.
Section-C	Descriptive type-15 marks, Asked 5 questions, one question from each unit and attempt two questions

Practical – Assessed by External Examiner

B Part – **Geographical Techniques for Applied Geographical Research. (60 marks)**

Project Report: Evaluation by External Examiner on examination day	40
Presentation &viva (Project + Record)	10
Record	10

References:

1. American Society of Photogrammetry, 1983. Manual of Remote Sensing, ASP, Falls Church, VA
2. Barrett, E. C. and L. F. Curtis, 1992. Fundamentals of Remote Sensing and Air Photo Interpretation, Macmillan, New York
3. Campbell, J., 1989. Introduction to Remote Sensing, Guilford, New York
4. Chang, Kang-tsung, 2003: Introduction to Geographical Information Systems. Tata McGraw Hill Publ. Co., New Delhi
5. Chauniyal, D.D., 2004. Remote Sensing and Geographical Information Systems (**in Hindi)**, Sharda Pustak Bhawan, Allahabad
6. Curran, Paul J., 1985. Principles of Remote Sensing, Longman, London
7. Dobesch Hartwig, Dumolard Pierre & Dyras Izabela, 2007. Spatial Interpolation for Climate Data (Ed.), Geographical Information Systems Series, ISTE Ltd., USA
8. Goodchild, M.F., Park, B.O. and Steyaert, L.T. (Ed.) 1993, Environmental Modelling with GIS. Oxford University Press, Oxford.
9. Jenson J.R., 1996. Introductory Digital Image Processing: A Remote Sensing Perspective, Prentice Hall, New Jersey
10. Jenson, J.R., 2000. Remote Sensing of the Environment: An Earth Resource Perspective. Perason Education
11. Lillesand, T.M., Keifer R.W. & Chipman, J.W., 2008. Remote Sensing and Image Interpretation, John Wiley & Sons, New Delhi
12. Lloyd, Christopher D., 2010. Spatial Data Analysis: An Introduction for GIS Users, Oxford University Press
13. Longley, P. And Batty, M. (eds.) 1996. Spatial Analysis: Modelling in a GIS Environment. Geo-Information International, Cambridge
14. Longley, P., Goodchild, M.F., Maguire, D. and Rhind, D. 1999. Geographic Information Systems. Principles, Techniques, Management, Applications. John Wiley, New York.
15. Maguirre, David J.; Michael F. Goodchild and David W. Rhind 1999. Geographical Information Systems: Principles and Application. Geo Information International, Vol.2, Longman Pub., N.Y.

16. Martin, D. 1996, Geographic Information Systems: Socio-economic Applications. Routledge, London
17. Mitchell Andy, 1999. The ESRI Guide to GIS Analysis (Volume I) Geographic Patterns and Relationships. ESRI Press, California.
18. Mitchell Andy, 2009. The ESRI Guide to GIS Analysis (Volume II) Spatial Measurements and Statistics. ESRI Press, California.
19. Pratt W.K., 1978. Digital Image Processing. Wiley, New York

WEB RESOURCES

1. *Ebook on Remote Sensing Applications,* www.**nrsc**.gov.in/Learning_Centre_**EBook**.html
2. *E-Tutorial on Fundamentals of Remote Sensing*, Canada Centre for Mapping and Earth Observation, Natural Resources Canada, accessible at http://www.nrcan.gc.ca/earth-sciences/geomatics