



# University of Rajasthan Jaipur

## SYLLABUS

### M.Sc. GEOGRAPHY

(Semester Scheme)

I & II Semester Examination 2025-26

III & IV Semester Examination 2026-27

Rj JPL  
अतिरिक्त कुलसचिव  
राजस्थान विश्वविद्यालय, जयपुर  
[Signature]

## M.A. / M.SC. GEOGRAPHY

### First Semester

S.No.	Subject Code	Course Title	Course Category	Credit	Contact Hours Per Week			EOSE Duration (Hrs.)	
					L	T	P	THY	P
1.	Geo 101	Evolution of Geographical Thoughts (upto 1800 AD)	CCC	4	3	1	0	3	
2.	Geo 102	Structural and Dynamic basis of Geomorphology	CCC	4	3	1	0	3	
3.	Geo 103	Principles and Theory of Economic Geography	CCC	4	3	1	0	3	
4.	Geo 111	Practical	CCC	6	0	0	9	4	
5.		<b>Elective - I</b>	ECC	4	3	1	0	3	
	GEO A01	Man and Natural Environment							
	GEO A02	Cultural Geography							
6.		<b>Elective - II</b>	ECC	4	3	1	0	3	
	GEO B01	Population Geography							
	GEO B02	Quantitative Techniques in Geography							
7.		<b>Elective - III</b>	ECC	4	3	1	0	3	
	GEO C01	Geography of Rural Development							
	GEO C02	Geography of Soils							
8.		<b>Elective - Practical</b>	ECC						
	GEO D01	Practical		6	0	0	9	4	
	GEO D02	Practical		6	0	0	9	4	
		<b>Total Credit</b>		<b>36</b>					

*Pj / Jas*  
**Dy. Registrar (Acad.)**  
 University of Rajasthan  
 Jaipur

## I SEMESTER

Paper code: Geo 101: Evolution of Geographical Thoughts (upto 1800 AD)

### Section-A

Beginnings and geosophical nature of geography: ancient Indian geographical thought (the puranic geography), Ancient classical period: contribution of Greeks scholars (Herodotus and Eratosthenes), Greeko-Roman scholar (Posidonius), Romans scholars (Strabo and Ptolemy), and Chinese scholars.

### Section-B

Implications of dark age in Europe, development and nature of Geography during medieval period: Contributions of Al-Biruni, Al Muquaddassi, Al-Masudi and Al Idris, Ibn Battuta and Ibn Khaldun.

### Section-C

Impact of renaissance on geography: main inventions, discoveries and explorations, cosmographic tradition and position of geography among sciences: Sebastian Munster, Philip Cluverius, Nathanael Carpenter, Varenius, Anton Friedrich Bushing, Immanuel Kant and Conrad Malte Brun.

### Readings Recommended:

Adhikari, S. 2009: Fundamentals of Geographical Thought. Chaitanya Publishing House, Allahabad.

बंसल, सुरेश चन्द 2008: भौगोलिक चिन्तन के मूल तत्त्व। मीनाक्षी प्रकाशन, मेरठ।

Dickinson, R.E. 1967. The Markers of Modern geography. Routledge & Kegan Paul Limited. London.

Dear, M.J. and Flusty, S. (ed.) 2002: The spaces of Post modernity: Readings in Human Geography, Blackwell Publishers Ltd, Oxford.

Dikshit, R.D. 2004. Geographical Thought. A Critical History of Ideas. Prentice-Hall of India, New Delhi (in English and Hindi).

जैन, एस.एम. 2005: भौगोलिक चिन्तन एवं विधि तंत्र। साहित्य भवन पब्लिकेशन्स, आगरा।

Hartshorne, R. 1987: Perspective on the Nature of Geography Scientific Publishers, Jodhpur (Copyright 1959 by the Association of American).

Holt-Jensen, A. 1988. Geography: History and Concepts- A Student's Guide. Sage, Los Angeles (Fourth Edition)

James, P.E.: All Possible Worlds 1972: A History of Geographical Ideas: Odessey Press, 622 pages.

Johnston, R, Gregory D, Pratt G, Watts M. and Whatmore S. (2003): The Dictionary of Human Geography. Blackwell Publishers, Oxford, 5<sup>th</sup> Edition.

कौशिक, एस.डी. 2005-06, भौगोलिक विचारधाराएँ एवं विधि तंत्र। रस्तोगी पब्लिकेशन्स, मेरठ, आठवां संस्करण (पुनर्मुद्रित)।

मौर्य, एस.डी. 2007, भौगोलिक चिन्तन का इतिहास, प्रयाग पुस्तक भवन, इलाहाबाद।

Majid. H. 2004. Evolution of Geographical Thought. Rawat Publications, Jaipur (Reprinted 2007- Revised & Enlarged).

सक्सेना, एल.के. व तियारी, ए.के. 2003, भौगोलिक चिन्तन। राजस्थान हिन्दी ग्रन्थ अकादमी, जयपुर।

*Ps / Jais*  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

**Paper code: Geo 102: Structural and Dynamic Basis of Geomorphology**

**Section-A**

Interior structure of the earth, thermal state of the earth's interior, Isostasy: views of Airy, Pratt, Hayford and Bowie, Joly and Holmes, Origin of the continents and oceans, earth movements: epeirogenic and orogenic- Mountain building theories of Jeffreys, Kober, Joly, Daly, Holmes and Plate Tectonics.

**Section-B**

Definition, nature and scope of geomorphology, major concepts in geomorphology, Denudation: weathering, mass movements, erosion and sediment regimes, various models of landscape evolution: Davis, Penck, King, Hacks, Morisawa, Schumm.

**Section-C**

Topographies: fluvial, glacial-periglacial, Aeolian, karst and coastal, element of slope and various models of slope development: Wood, Davis, Penck, King, Strahler.

**Readings Recommended:**

- Chorley, R.J. 1972: *Spatial Analysis in Geomorphology*. Methuen, London.  
Cooke, R.U. and Doornkamp, J.C. (1974): *Geomorphology in Environmental Management-A introduction*. Clarendon Press, Oxford.  
Dury, G.H.; 1959: *The Face of the Earth*. Penguin Harmondsworth.  
Fairbridge, R.W. 1986: *Encyclopedia of Geomorphology*. Reinhold, New York.  
Garner, H.F. 1974: *The Origin of Landscape-A Synthesis of Geomorphology*. Oxford University Press, London.  
Goudie, A. 1993: *The Nature of the Environment*. Oxford & Blackwell, London.  
Mitchell, C.W. 1973: *Terrain Evaluation*. Longman, London.  
Ollier, C.D. 1979: *Weathering*. Longman, London.  
Pitty, A.F. 1971: *Introduction to Geomorphology*. Methuen, London.  
प्रदास, गायत्री 2004: भू-आकृति विज्ञान। शारदा पुस्तक भवन, इलाहाबाद।  
Sparks, B.W. 1960: *Geomorphology*. Longman, London.  
Sharma, H.S. (ed) 1980: *Perspectives in Geomorphology*. Concept Publishing Company, New Delhi (VOL I to IV).  
Skinner, B.J. & Porter, S.C. 1995: *The Dynamic Earth*. John Wiley, New York.  
Stoddart, D.R. (ed) 1996: *Process and Form in Geomorphology*. Routledge, New York.  
Singh, S. 1998: *Geomorphology*. Prayag Publication, Allahabad.  
Spark, B.W. 2004: *Geomorphology*. Longmans, London.  
Thornbury, W.D. 1960: *Principles of Geomorphology*. John Wiley, New York.  
Young, A. 1972: *Slopes*. Longmans, London.

*Raj (Jai)*  
**Dy. Registrar (Acad.)**  
University of Rajasthan  
JAIPUR

**Paper code: Geo 103: Principles and Theory of Economic Geography**

**Section-A**

Changing nature of economic geography, approaches to economic geography, agricultural typology-with special reference to: subsistence plantation agriculture, mediterranean agriculture, mixed farming, commercial grain farming, livestock rearing.

**Section-B**

Energy resources: detailed study of conventional and non-conventional energy resources, spatial patterns and supply problems, industries: iron & steel, aluminium industry, paper and pulp, cotton textile, chemical fertilizer and auto mobile.

**Section-C**

Decision making process: location decision-behavioural view, international trade: major regional trade and economic integration block, major trends and pattern, economic region: concept and methods of delineation, need of economic regionalization for area development and planning-economic regions of India.

**Readings Recommended:**

- Alexander, J.W. 2001: *Economic Geography*. Prentice Hall of India, New Delhi.
- Bengston, N.A. and Royen, M.V.: *Fundamentals of Economic Geography* (Prentice Hall New York).
- Boesh, H.: *A Geography of World Economy*.
- Chapman, K and Walker, D. 1991: *Industrial Location: Principles and Policies...* Blackwell Oxford.
- Grigg, D. 1995: *An Introduction to Agricultural Geography*. Second edition, Routledge, London.
- James, O. W. and Peter, O. M. 1986: *Economic Geography*. John Wiley and Sons, New York.
- Jarret, H. R. 1977: *A Geography of Manufacturing*. Trans-Atlantic Publishers, London.
- Leong, G.C. and Morgan, G.C. 1982: *Human and Economic Geography*, Oxford University Press, London.
- Lloyd, P.E. and Dicken, P. 1977: *Location in Space: A Theoretical Approach to Economic Geography*. Harper & Row, Publishers, London.
- Mandal, R. B. 1982: *Land Utilization - Theory and Practice*. Concept Publishing Company, New Delhi.
- Scott, A. J. 1988: *New Industrial Spaces*. Pion, London.
- Shafi, M. 2000: *Agricultural Geography of South Asia*. Macmillan, New Delhi.
- Singh J. and Dhillon, S.S. 2004: *Agricultural Geography*. Tata Mc-Graw-Hill, New Delhi.
- Singh, Kashi Nath and Siddiqui, A.R. 2012: *Economic Geography*, Prayag Pustak Bhawan, Allahabad.
- Smith, D. M. 1981: *Industrial Location - An Economic Geographical Analysis*. John Wiley, New York.
- Wheeler, J.O. and Muller, O.P. 1995: *Economic Geography*. John Wiley, New York.

*P. J. Jain*  
Dy. Registrar (Acad.)  
University of Rajasthan  
JALPUR

**Paper code: Geo 111: Practical**

<b>Minimum Marks: 36</b>	<b>Bifurcation of Marks</b>	<b>Max. Marks: 100</b>
Written Test on Lab.Work (4 Questions)	60	4 Hours
Record Work & Viva-Voce	25+15	
Total	100	

**N.B.:** In written test there shall be 2 questions from each section. Candidates have to answer 4 questions selecting at least one question from each section. All questions carry equal marks. Examination be conducted in batches of not more than 20 candidates in any case. 09 hours for teaching practicals be provided for a batch of 20 students per week.

**Section A**

Elementary trigonometry, classification of map projections and their specific uses. Mathematical construction of projections: cylindrical equal area, Mercator's and Gall's stereographic

**Section B**

conical (with one standard parallel, two standard parallels, Bonne's, polyconic and modified polyconic (international).

**Section C**

Mathematical construction of projections: zenithal (equidistant-polar and equatorial case, equal area-polar and equatorial case, Gnomonic-polar and equatorial case, stereographic-polar and equatorial case and orthographic-polar and equatorial case).

**Readings Recommended:**

- चौहान, पी.आर. 2005: प्रयोगात्मक भूगोल। वसुधैव कुटुम्बकम् प्रकाशन, गोरखपुर।  
Dickinson, G.C. 1973: Statistical Mapping and Mapping Statistics. London.  
Khullar, D.R. 2000: Essentials of Practical Geography. New Academic publishing Co., Jalandhar.  
Robinson, A.H. et al. 2004: Elements of Cartography. John Wiley & Sons, Inc., New York.  
Rampal, K.K. 1993: Mapping and Compilation: Methods and Techniques. Concept Publishing Company, New Delhi.  
शर्मा, जे.पी. 2010-11: प्रयोगात्मक भूगोल की रूपरेखा। उस्तोगी पब्लिकेशन्स, मेरठ।  
Singh, R.L. and Singh, R.P.B. 1991: Elements of Practical Geography. Kalyani Publishers, New Delhi.  
तिवारी, आर.सी. एवं सुधाकर, त्रिपाठी 2009: प्रयोगात्मक भूगोल। प्रयाग पुस्तक भवन, इलाहाबाद।

*Pg. 1 Jain*  
**Dy. Registrar (Acad.)**  
**University of Rajasthan**  
**JAIPUR**

## Paper code: Geo A01: Man and Natural Environment

### **Section-A**

Definition and scope of environmental geography, its relation with other subjects, elements of the environment, man and environmental relationships: environmental determinism, possibilism and neo determinism, biosphere and its components, concept of ecology and ecological succession, types of ecosystems, energy flow in the ecosystem, soil system, geobiochemical cycles, major biomes of the world.

### **Section-B**

Environmental degradation and natural disasters, environmental crises: ozone depletion, green house gas effects, El-Nino, global warming and climate change, water scarcity, acid rain, sea level change; desertification, environmental pollutions: water, air soil, noise and radioactive.

### **Section-C**

Environmental quality, sustainable development, environmental management, soil and forest resources management, water management, wildlife conservation, biodiversity and its conservation, environmental awareness and education, international efforts of environmental conservation.

### **Readings Recommended:**

- Agarwal, A. and Narain, S. 1977: Dying Wisdom: Rise, Fall and Potential of India's Traditional Water Harvesting System. Centre for Science and Environment, New Delhi.
- Economic and social commission for Asia and the Pacific United Nations 1989: Guidelines for the preparation of National Master Water Plans.
- Govt. of India, 1980: Ministry of Energy and Irrigation. Rashtriya Barh Ayog (Report-National Commission of Floods. Vol. I & II, New Delhi).
- Govt. of India, 1972: Ministry of Agriculture Report of the Irrigation Commission. Vol I & IV, New Delhi).
- Gulhati, N.D. 1972: Development of Inter-State Rivers: Law and Practice in India. Allied Pub., Bombay.
- International Water Resource Association and Central Board of Irrigation & Power, Water of Human Needs, 1975: Vols. I to V Proceedings of the Second World Congress on Water Resources, 12-16 December, New Delhi.
- Jones, J.A. 1997: Global Hydrology: Processes, Resources and Environmental Management. Longman.
- Kates, R.W. and Burton, I. (ed.) 1980: Geography, Resource and Environment Management, Ottawa.
- Krutilla, John V. and Eckstein, O. 1958: Multiple Purpose River Development: Studies in Applied Economic Analysis. John Hopkin's Press, Boston.
- Law, B.C. (ed.) 1968: Mountains and Rivers of India IGU. National Committee for Geography, Calcutta.
- Matter, J.R., 1984: Water Resources Distribution, Use and Management. John Wiley, Marylane.
- Michael, A.M. 1978: Irrigation: Theory and Practices. Vikas Publishing House pvt., New Delhi.
- Newson, M. 1992: Land, Water and Development River Basin systems and their Sustainable Management. Routledge, London.
- Pareira, H.D. 1973: Landuse and Water Resources. Cambridge University Press, Cambridge.

*Raj Jais*  
**Dy. Registrar (Acad.)**  
University of Rajasthan  
JAIPUR

- K. L. 1979: India's Water Wealth. Orient Longman, New Delhi.
- सिंह, जगदीश 2003: पर्यावरण एवं संविकास। ज्ञानोदय प्रकाशन, गोरखपुर।
- शर्मा, पी.डी. 2009: पारिस्थितिकी एवं पर्यावरण। रस्तोगी प्रकाशन, मेरठ।
- Singh, R.A. and Singh, S.R. 1979: Water Management: Principles and Practices. Tara Publication, Varanasi.
- Singh, Savindra 2006: Environmental Geography. Prayag Pustak Bhawan, Allahabad.
- Smith, K. 1972: Water in Britain. A Study in Applied Hydrology and Resource Geography. McMillan, London.
- श्रीवास्तव, वी.के. एवं राव, बी.पी. 2002: पर्यावरण और पारिस्थितिकी। वसुन्धरा प्रकाशन, गोरखपुर।
- Tideman, F.M. 1996: Watershed Management. Guidelines for Indian Conditions, Omega, New Delhi.
- Tebbutt, T.H.Y. (ed.) 1985: Advances in Water Engineering. Elsevier Applied Science Pub., London.
- Todd, D.K. 1959: Ground Water Hydrology. John Wiley, New York.
- U.S.D.A. 1955: The Year Book of Agriculture. Water. Oxford and I.B.H. Publishing Co., New Delhi.
- Verghese, B.G. 1990: Water of Hope: Integrated Water Resource Development and Regional Co-operation within the Himalayan-Ganga, Brahmaputra-Barak Basin, Oxford IBFI, New Delhi.
- White, G.F.L. 1977: Environmental Effects of Complex River Development. Westriver Press, Boulder, Colorado.

**Paper code: Geo A02: Cultural Geography**

**Section-A**

Definition, nature and scope of cultural geography, the evolutionary approaches and conceptual framework, evolution of man and human society from Palaeolithic to Pleistocene period, rise and dominance of *homo-sapiens* and their spatial distribution over the continents, distribution and characteristics of primary races of the world, zone and state theory.

**Section-B**

Beginning of plant domestication, animal domestication and their regions, evolution of civilization: Mesopotamian, Nile, Indus and Hwang Ho Valley with respect to racial, Ethnic, religious, linguistic, demographic and organizational characteristics. School of cultural determinism, cultural adaptation, assimilation, integration diffusion and Environmental perception. Major cultural hearths, realms and regions of the world, basic similarities and differences.

**Section-C**

Major linguistic families and their distribution in the world, bases of cultural diversity: race, religion, language and nationalism, culture and environment, human settlements-origin, types, pattern and distribution, westernization, sanskritization and cultural urbanization.

**Readings Recommended:**

- Anderson, J. 2009: Understanding Cultural Geography-Places and traces. Routledge, USA.
- Anderson, K., Domosh, M., Pilc, S. and Thrift, N. (eds.) 2003: Handbook of Cultural Geography. Sage Publications, London.
- Ahmad, Aijazuddin 1999: Social Geography. Rawat Publication, New Delhi.
- Crang, Mike 1999: Cultural Geography. Routledge, London.

Pg | 1/2  
 Dy. Registrar (Acad.)  
 University of Rajasthan  
 JAIPUR

- 11
- Capman, K. 1979: People, Pattern and Process-An Introduction to Human Geography. Edward Arnold Ltd., London.
- Dreze Jean, Sen, Amartya 1996: Economic Development and Social Opportunity. Oxford University press, New Delhi.
- Dubey, S.C. 199: Indian Society. National Book Trust, New Delhi.
- Haq, Mahbulul: Reflection on Human Development. Oxford University Press. New Delhi.
- Mitchell, D. 2000: Cultural Geography: A Critical Introduction. Blackwell Publishers, Inc. USA.
- Norton, W. 2006: Cultural Geography. Environments. Landscapes. Identities. Inequalities. Oxford University Press, Toronto. 2<sup>nd</sup> Edition.
- प्रसाद, गायत्री 1991: सांस्कृतिक भूगोल। शारदा पुस्तक भण्डार, इलाहाबाद।
- Robertson, Iain, and Penny Richards 2003: Introduction in Studying cultural landscapes, ed. Iain Robertson and Richards, 1-18.
- Rubenstein, J.M. and Becon, J.M. 1990: Cultural Geography, John Wiley and Sons Inc., New York.
- रजदी, मुनीरुद्दीन 2001: सांस्कृतिक भूगोल। उपस्थान (विश्व) पुस्तक भण्डार, मुंबई।
- Scott, A. J. 1997: The Cultural Economy of Cities. International Journal of Urban and Regional Research, 21(2), 323-339.
- Saberwal, Vasant K. 1996: Pastoral Politics: Gaddi grazing, degradation, and biodiversity conservation in Himachal Pradesh, India. Conservation Biology 10, no. 3: 741-749.
- Sen, Amartya and Dreze Jean 1996: Indian Development Selected Regional Perspectives. Oxford University Press.
- Sopher, D. 1980: An Exploration of India: Geographical Perspectives on Society and Culture. Cornell University Press, Ithaca, New York.
- Smith, D.M. 1977: Human Geography; A Welfare Approach. Edward Arnold Publication, London.
- Spencer, J.E. and Thomas, W.L. 1969: Cultural Geography. John Wiley and Sons inc., New York.
- Subb Rao. Personality of India 1958: Pre and Proto Historic Foundation of India and Pakistan. M.S. University, Baroda, Vadodara.
- Wagner, P.L. & Mikesell, H.W. (eds.) Readings in Cultural Geography.
- Miljerkee. A.B. and Aijazuddin, A. 1985: India-Culture, Society and Economy. Inter India publications, New Delhi.
- Broke, J.C. and Webb, J.W. 1978: A Geography of Mankind, McGraw Hill, New York.

**Paper code: Geo 801: Population Geography**

**Section-A**

Population Geography: definition, nature and scope and interdisciplinary study, theories of population growth – pre-Malthusian views, Malthus' theory, Marxist theory, Optimum population theory, demographic transition model, world population distribution, growth trends and determinants.

**Section-B**

Migration: history, theories, trends and patterns of international and internal migration, population dynamics: fertility and mortality- measurement, determinants and distribution, world population composition and characteristics, world population urbanization, trend pattern and challenges.

**Section-C**

India- population characteristics and relationship with development; population control movement and policies; urbanization and population explosion; post independence

Reg. / Jais

**Dy. Registrar (Acad.)**  
University of Rajasthan  
JAIPUR

development-reproductive and child health programme, contemporary issues- ageing of population; declining sex ration; hiv/aids.

**Readings Recommended:**

- Bhende, Asha, A. and Kanitkar, 2002: Principles of Population Studies. 14<sup>th</sup> Edition, Himalaya Publishing House, Mumbai.
- Chandna, R.C. 2013: Population Geography. Kalyani Publishers, Delhi.
- Chandna, R.C. 2006: Jansankhya Bhugol. Kalyani Publishers, Delhi.
- Garnier, J.B. 1978: Geography of Population, Longman, U.K.
- Hassan, M.I. 2005: Population Geography. Rawat Publication, Jaipur.
- Kundu, A. Lopamudra, R.S. 2012: Migration and Exclusionary Urbanisation in India. Economic & Political Weekly, XLVII (26/27): 219-227.
- Kundu, A. 2006: Trends & patterns of urbanization and their economic implications. India Publications, London.
- Newbold, K.B. 2010: Population Geography: Tools and Issues. Rowman & Littlefield Corporation, New Delhi.
- Premi, M.K. 1991: India's Population Heading Towards a Billion. B.R. Publishing Corporation, New Delhi.
- Rural Urban Dynamics and the Millennium Development Goals 2013: Global Monitoring Report.
- Woods, R. 1997: Theoretical Population Geography. Longman, U.K.
- Weeks, J.R. 1988: Population: An Introduction to Concepts and Issues. Springer, Wadsworth.
- [www.un.org/esa/population/publications/worldageing19502050/](http://www.un.org/esa/population/publications/worldageing19502050/)
- [www.who.int/ageing/en/](http://www.who.int/ageing/en/)
- [India.unfpa.org/drive/NationalPopulation-Policy2000.pdf](http://India.unfpa.org/drive/NationalPopulation-Policy2000.pdf)
- UNAIDS Report on Global AIDS Epidemic, 2010

**Paper code: Geo B02: Quantitative Techniques In Geography**

**Section-A**

Probability: theory of probabilities- law of addition and multiplication probabilities of distribution: normal, binomial, poisson-sampling: basic concepts, sample units and design, sampling frame and procedures, standard error and sample size, testing the adequacy of samples, hypothesis testing: needs and types of hypotheses, goodness of fit and significance and confidence levels-parametric and non-parametric procedures; contingency tables, chi-square test, binomial test, t-test, mann-whitney U test.

**Section-B**

Bivariate analysis; forms of relation and measuring the strength of association and relation-construction and meanings of scatter diagram simple linear and regression analyses-spearman's rank and product moment correlation coefficients-the ordinary least square method of fitting a regression line-construction of regression line: interpolation, prediction, explanation and residual-statistical tests of significance of the estimates; residuals and their mapping.

**Section-C**

Multivariate analysis; basics of multiple regression-partial correlation coefficient regression analysis, analysis of variance and anova-testing the overall significance of a regression auto correlation-multicollinearity-basis principles and elements of factor Analysis and principal

*10/1/2017*  
**Dy. Registrar (Acad.)**  
University of Rajasthan  
JAIPUR

component analysis, surface and models: gravity potential; model-spatial interpolation and trend surface analysis-simulation models: random walk and diffusion models-markov chain model similarity indices and region building-construction of thiesen polygons.

**Readings Recommended:**

- Gupta, S.P. 1979: Statistical Methods. Sultan Chand & Sons, New Delhi  
Mahmood, A. 1998: Statistical Methods In Geographical Studies. Rajesh Publication, New Delhi.  
Nagar, K.N. 1992: Sankhiki Ke Mool Tatva. Meenakshi Prakashan, Meerut.  
Unwin, D. 1981: Introductory spatial Analysis. Methuen, London.  
Gregory, S. 1978: Statistical Methods and Geographer. Longman, London.  
Hammond R. and McCullagh, P.S. 1974: Quantitative Techniques In Geography: An Introduction. Clearendan Press, Oxford.  
John, P. Cole and Cuchlanie, A.M King 1988: Quantitative Geography. John Wiley, London.  
Johnston, R.J. 1973: Multivariate Statistical Analysis in Geography. Longman, London.  
Kautsohianis 1973: Theory of Economics. London.  
Maurice Yeats 1974: An Introduction to Quantitative Analysis in Human Geography. McGraw Hill, New York.  
Peter Haggett, Andrew D. Cliff & Allan Frey 1977: Location Methods. Vol. I and II, Edward Arnold, London.

**Paper code: Geo C01: Geography of Rural Development**

**Section-A**

Geography and rural development; agriculture and rural development, rural land use; agriculture pastoral, forestry and land use competition. Landuse and landscape. Approaches to rural development, growth centre approach Infrastructure reformist. Rural settlement, housing, population and employment rural transport, service provision, derivation, recreation; health and nutrition.

**Section-B**

Rural planning and land management; resource development and Integrated rural development: crop and soil management live stock range and management; water management, ecological management.

**Section-C**

Rural development in Rajasthan; rural development schemes irrigation and land development schemes, drought prone areas schemes, desert development programme; integrated rural development in Rajasthan, MNREGA and tribal areas development; wasteland development.

**Readings Recommended:**

- Glig, A.W. 1985: An introduction to Rural Geography. Arnold London.  
Association of Country Councils 1979: Rural Deprivation, London ACC.  
Allan, J.A. 1980: Remote Sensing in Land in Landuse Studies, Geography 65.  
Tweari, A.K. (ed.) 1988: Desertification: Monitoring and Control, Scientific Pubs, Jodhpur.  
Anderson, J.R.L.J. 1977: Hardardar-Agricultural Decision Analysis, Ames, Lows State University Press.  
Andreas, B. 1981: Farming Development and Space-World Agricultural Geography, New York, Water Cryter.  
Morgan, W.B. and RJA 1971: Munon-Agricultural Geography. London Methuen.

  
**Dy. Registrar (Acad.)**  
University of Rajasthan  
JAIPUR

- Macione, M. 1981: Rural Geography London, Pappur Clark, (ed) and Row 1984-Register of Research in Rural Geography Leicester: Rural Geography Study Group.
- Bowler, I.R. 1948: Agricultural Geography-Progress in Human Geography-8. Newbury, Pa. 1980: Geography of Agriculture-Plymouth Macodonald and Evans.
- Grigg, D.B. 1974: The Agricultural Systems of the World, Cambridge University Press.
- Grigg, D.B. 1984: An Introduction to Agricultural Geography, London Hutchinson.
- Jones, A. 1975: Rural Housing. The Agricultural Tied College, London Bell.
- Lassey, W.R. 1977: Planning in Rural Environment, New York, McGraw Hill.
- Lavery, P. (ed.) 1974: Recreational Geography, Newton Abbot; David and Charles.
- Leasdale, R. 1981: Settlement systems in sparsely populated regions & Homes (ed.) and Oxford, Pergamon.
- Menab, A. 1984: Integrated Rural Development, Gloucester Gloucester College of Arts.

**Paper code: Geo 001: Geography of Soils**

**Section-A**

Soils: Definition, origin. Pedology, distinction between soil and sediment, Weathering and soils: soil formation: soil forming factors, soil profile. Soil taxonomy

**Section-B**

Physical properties of soils - texture, structure, colour, porosity and permeability, Chemical properties of soils - soil clays. Cation exchange, Humus, organic matter, pH, Soil biochemistry.

**Section-C**

Classification of tropical soils. Major soils in India - Black, soils and red soils - their characteristics and distribution. Soils and environmental problems - soil erosion, salinization, pollution

**Recommended Readings:**

- Miller, R. W. and Donahue, R. L. (1990): Soils, Prentice-Hall of India
- Pitty, A. F. (1978): Geography and soil properties, University Press.
- Bridges, E. M. (1986): Principles and Applications of Soil Geography, Halsted Press.
- Daji, J. A. (1970): A textbook of soil science, Asia Pub. House
- Bunting, B. T. (1976). The Geography of soils, Hutchinson, London
- Brikeland, P. W. (1984). Soils and geomorphology, Oxford University Press

*Raj Jais*  
**Dy. Registrar (Acad.)**  
 University of Rajasthan  
 JAIPUR

**Paper code: Geo D01: Practical**

<b>Minimum Marks: 36</b>	<b>Bifurcation of Marks</b>	<b>Max. Marks: 100</b>
Written Test on Lab.Work (4 Questions)	60	4 Hours
Record Work & Viva-Voce	25+15	
Total	100	

**N.B.:** In written test there shall be 2 questions from each section. Candidates have to answer 4 questions selecting at least one question from each section. All questions carry equal marks. Examination be conducted in batches of not more than 20 candidates in any case. 09 hours for teaching practicals be provided for a batch of 20 students per week.

**Section-A**

History of cartography, types of maps, enlargement and reduction and finding of area on map using planimeter.

**Section-B**

Study of geological maps and preparation of their cross sections and interpretation, interpretation of weather maps and weather forecast.

**Section-C**

Conventional: Projection Sinusoidal and Mollweide, map policy of India and projections used for map output in India.

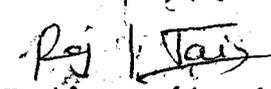
**Readings Recommended:**

- चौहान, पी.आर. 2005: प्रयोगात्मक भूगोल। बसुन्धरा प्रकाशन, गोरखपुर।  
Dickinson, G.C. 1973: Statistical Mapping and Mapping Statistics. London.  
Khullar, D.R. 2000: Essentials of Practical Geography. New Academic publishing Co., Jalandhar.  
Robinson, A.H. et al. 2004: Elements of Cartography. John Wiley & Sons, Inc., New York.  
Rampal, K.K. 1993: Mapping and Compilation: Methods and Techniques. Concept Publishing Company, New Delhi.  
शर्मा, जे.पी. 2010-11: प्रयोगात्मक भूगोल की कसरत। इलाहाबाद प्रकाशन, इलाहाबाद।  
Singh, R.L. and Singh, R.P.B, 1991: Elements of Practical Geography. Kalpal Publishers, New Delhi.  
तिवारी, आर.सी. एवं सुधाकर, त्रिपाठी 2009: प्रयोगात्मक भूगोल। प्रयाग पुस्तक भवन, इलाहाबाद।

**Paper code: Geo D02: Practical**

<b>Minimum Marks: 36</b>	<b>Bifurcation of Marks</b>	<b>Max. Marks: 100</b>
Written Test on Lab.Work (4 Questions)	60	4 Hours
Record Work & Viva-Voce	25+15	
Total	100	

**N.B.:** In written test there shall be 2 questions from each section. Candidates have to answer 4 questions selecting at least one question from each section. All questions carry equal marks. Examination be conducted in batches of not more than 20 candidates in any case. 09 hours for teaching practicals be provided for a batch of 20 students per week.

  
**Dy. Registrar (Acad.)**  
University of Rajasthan  
JAIPUR

**Section-A**

Elementary knowledge of computer, software & hardware, file format, graphic in computer.

**Section-B**

Elements of digital cartography, data input, data capture, scanning, digitization and map compilation.

**Section-C**

Map through autoCade, ArcGIS, GIS, QGIS, Erdas and Arcmap.

**Readings Recommended:**

- चुनियाल, डी.डी. 2004: दूरसम्बेदन तथा भौगोलिक सूचना प्रणाली। शारदा पुस्तक प्रकाशन, इलाहाबाद।  
Cromley, R.G. 1992: Digital Cartography, Prentice Hall, Englewood Cliffs, N.J.  
Demers, M.N. 1997: Fundamental of Geographical Information Systems. John Wiley & Sons, Inc., New York.  
Dickinson, G.C. 1973: Statistical Mapping and Mapping Statistics. London.  
Joseph, G. 2005: Fundamentals of Remote Sensing. Universities Press (India) Private Limited, Hyderabad.  
Khullar, D.R. 2000: Essentials of Practical Geography. New Academic publishing Co., Jalandhar.  
Nag, P. 1992: Thematic Cartography and Remote Sensing, Concept publishing company, New Delhi.  
Robinson, A.H. et al. 2004: Elements of Cartography. John Wiley & Sons, Inc., New York.  
Rampal, K.K. 1993: Mapping and Compilation: Methods and Techniques. Concept Publishing Company, New Delhi.

*Pg. (T)*  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

**M.A. / M.SC. GEOGRAPHY**  
**Second Semester**

S.No.	Subject Code	Course Title	Course Category	Credit	Contact Hours Per Week			EOSE Duration (Hrs.)	
					L	T	P	THY	P
1.	Geo 201	Modern and Contemporary Geographical Thought (19 <sup>th</sup> century onwards)	CCC	4	3	1	0	3	
2.	Geo 202	Principals of Climatology	CCC	4	3	1	0	3	
3.	Geo 203	Principles and Theory of Economic Geography	CCC	4	3	1	0	3	
4.	Geo 211	Practical	CCC	6	0	0	9	4	
5.		<b>Elective – I</b>	ECC	4	3	1	0	3	
	GEO A01	Geography of Rural Settlements							
	GEO A02	Plant Geography with Special Reference to Tropics							
6.		<b>Elective – II</b>	ECC	4	3	1	0	3	
	GEO B01	Geography of Tourism and Recreation							
	GEO B02	Geographical Perspectives on Sustainable Development							
7.		<b>Elective – III</b>	ECC	4	3	1	0	3	
	GEO C01	Geography of Tribes with Special Reference to Rajasthan							
	GEO C02	Geography of Crime							
8.		<b>Elective – Practical</b>	ECC						
	GEO D01	Practical		6	0	0	9	4	
	GEO D02	Practical		6	0	0	9	4	
		<b>Total Credit</b>		<b>36</b>					

Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

## II SEMESTER

Paper code: Geo 201: Modern and Contemporary Geographical Thought  
(19<sup>th</sup> century onwards)

### Section A

Definition, scope, purpose and philosophy of geography, themes and basic concepts in geography; impact of Darwinism on Geographical thoughts, Foundations of modern geography: German school (Humboldt, Ritter, Ratzel, Richtofen, Hettner, Schuster), French school (Blache, Brunhes) British school (Mackinder) and Russian scholars during the 19<sup>th</sup> century, focus on geography as a science of chorology and landscape morphology.

### Section B

Rise of Anglo American School of geography: (Sample and Hartshorne) implications of geography as spatial science, relationship between geography, economics and planning (regional science) paradigms and revolutions: quantitative revolution, behaviouralism, radical geography, approaches of integrated geography and modern synthesis.

### Section C

Philosophical pluralism: empiricism, positivism, humanistic geography (idealism, phenomenologism and existentialism) and structuralism, post-modernism and various paradigms/ schools of geographical thought during post-modern period, dualism in geography: physical and human geography, systematic and regional geography, environmentalism and possibilism, qualitative and quantitative, idigraphic and nomothetic, Indian geography: development, emerging trends and professional challenges.

### Recommended Readings:

- Dear, M.J. and Flusty, S. (ed.) 2002: The spaces of Post modernity: Readings in Human Geography. Blackwell Publishers Ltd, Oxford.
- Dikshit, R. D. 2004: Geographical Thought. A Critical History of Ideas. Prentice-Hall of India Private Limited, New Delhi.
- Doi, R. D. 2002: Geographic Thought: A Spectrum of Compilation to Coherence. University Book House (Pvt.) Ltd., Jaipur.
- Dikshit, R. D. 1994 (ed.): The Art and Science of Geography - Integrated Readings. Prentice-Hall of India Private Limited, New Delhi.
- Haggett, P. 2001: Geography: A Global Synthesis. Prentice-Hall Pearson Educational, New York.
- Hartshorne, R. 1987: Perspective on the Nature of Geography. Scientific Publishers, Jodhpur (Copyright 1959 by the Association of American Geographers).
- Holt-Jensen, A. 2009: Geography: History and Concepts - A Student's Guide, SAGE, Los Angeles, London.
- Haggett, P. 1983: Geography: A Modern Synthesis. Harper and Row, New York.
- Harvey, D. 1969: Explanation in Geography. Arnold, London.
- डॉ. एस.एम. 2005: भौगोलिक विचार एवं विधि: प्रारंभिक चरण परिलक्षणा, उत्तर।
- Johnston, R. J. 1983: Philosophy and Human Geography. Edward Arnold (Publishers) Ltd, London.
- Johnston, R. J. and Sidway, J. D. 2004: Geography and Geographers. Arnold, London.
- Johnston, R., Gregory D., Pratt G., Watts M. and Whatmore S. (2003): The Dictionary of Human Geography. Blackwell Publishers, Oxford.
- Johnston, R.J. 1985: The Future of Geography. Methuen and Company Ltd., New York.
- Kapoor, A. 2001: Voice of Concern. The Concept Publishing Company, New Delhi.
- Mince, C. 2001 (ed): Postmodern Geography. Blackwell Publishers Ltd, Oxford.
- डॉ. एस.एम. 2007: भौगोलिक विचार का इतिहास। प्रारंभिक चरण, इलाहाबाद।
- Peet, R. 2003: Radical Geography. Rawat Publishers, Jaipur.
- Peet, R. 1998: Modern Geographical Thought. Blackwell Publishers Ltd, Oxford.
- Soja, E. (1989): Post-modern Geographies. Verso Press, London. Reprinted 1997: Rawat Publications, Jaipur and New Delhi.
- Taylor, G. 1960: Geography in the Twentieth Century. Methuen & Co. Ltd, London.

16

Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

**Paper Code: Geo 202: Principles of Climatology**

**Section A**

Earth-atmospheric system: components, characteristics and interactions, Current trends in climatology, Recent concerns – climate change and its impact, Microclimatology – influencing factors – forest and urban climates, Agro climatology – soil-plant-climate relationship.

**Section B**

Air masses: origin, classification, types, Fronts: Frontogenesis and Frontolysis – classification of fronts, Extra-tropical cyclones: formation, impact, Weather forecasting: traditional and modern techniques

**Section C**

Basis of climatic classification, Koppen's system of climatic classification – salient features, distribution of types, Thornthwaite's scheme of climatic classification – application, Comparative analysis of Koppen and Thornthwaite classifications, The Monsoon: characteristics, economic importance, A Origin of monsoon: classical and recent views, Prediction of monsoon: problems and prospects.

**Recommended Readings:**

Barry, R.S. & Chorley, R.J. (1971): Atmosphere, Weather and Climate, ELBS, Methuen & Co. Ltd., U.S.A.

Griffiths, J.F.(1966): Applied Climatology-An Introduction, Oxford University Press, London.

Harp, H.J. and Trinidad, O.D. (eds) (1990): Climate and Development, Springer Verlag, U.S.A.

Lal, D.S.(1997):Climatology, Sharda Pustak Bhawan, Allahabad.

Mather, J. R.(1974): Climatology: Fundamentals and Applications, McGraw Hill Book Co. New York.

McBoyle, G.(1973): Climate in Review, Houghton Mifflin Co., Boston.

Oliver, J.E. and Hidose, J.J. (1984): Climatology - An Introduction, Charles and Merrill, U.S.A.

Robinson, P.J. and Hendersen-Sellers, A.(1999): Contemporary Climatology, Pearson Education, London

Subrahmanyam, V.P.(ed)(1983):Contribution to Indian Geography, Heritage Publishers, New Delhi , a) Vol. III - General Climatology b) Vol. IV- Applied Climatology

**Further Reading:**

Bhutani, Smita, Our Atmosphere, Kalyani Publishers, Ludhiana, 2000.

Critchfield, H.J., General Climatology, Prentice Hall, N.J., 1975.

Frederick K. and Edward J. Tarbuck, The Atmosphere: An Introduction to Meteorology, Prentice Hall of India Pvt. Ltd., New Delhi, 1995.

Lydolph, P.E., The Climate of the Earth, Rowman Nad Allanheld, Totowa, New Jersey, 1985.

Rumney, G.R., Climatology and the World Climates, Macmillan, London, 1968.

17

*P. J. Jain*  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

Strahler, A.N., Modern Physical Geography, John Wiley and Sons, New York, Singapore, 1987.  
 Thompson Russell D., Applied Climatology - Principles & Practice, John Willey, New York, 1997.  
 Trewartha, G.T., An Introduction to Climate, McGraw Hill, New York, 1980, Fifth Edition (International Student Edition).

**Paper code: Geo 203: Principles and Theory of Economic Geography**

**Section A**

Simple model of economy, environmental relations of the economy, spatial structure of economy, geographical basis of economic activities, evolution of world economic system.

**Section B**

Manufacturing: factors of production, theories of plant location: Weber's Least cost theory, Losch's economics of location, Isard's space economy, Smith's spatial margins, webber's uncertainty effect, industries-iron & steel, aluminium, paper and pulp, cotton textile, chemical industries-fertilizer, spatial variation in transport costs: location of transport routes and structure of transport costs.

**Section C**

Spatial organisation of land use: laws of return, concept of rent, Vonthunen's general theory of landuse, dynamic agricultural location theory, Thunian location theory in the late 20<sup>th</sup> century world, classical central place theory: range of good, threshold, central place system and hierarchy, Christaller's hexagonal trade areas, loss and uniform plain, modification of Christaller's model.

**Recommended Readings :**

- Alexander, J.W. 1988: Economic Geography. Prentice Hall, India, New Delhi.  
 Berry, B.J.L. et al 1976: Geography of Economic System. Prentice hall, Englewood, Cliff.  
 Ghosh and Chatterjee 1989: A New Approach to Economic Geography.  
 Huntington, Ellsworth 1940: Principles of Economic Geography. New York: John Wiley and Sons, Inc.  
 Hartshorn, T.A. and Alexander, J.W. 2000: Economic Geography. Prentice Hall, New Delhi.  
 Hooper B.W. and Lee, R. 1974: Economic Geography. Methuen, London.  
 Leong, G.C. and Morgan, G.C. 1982: Human and Economic Geography. Oxford University Press, London.  
 Libyod, P.B. and Dickon, P. 1977: Location in Space: A Theoretical Approach to Economic Geography. Harper & Row, Publishers, London.  
 Ramesh, A. 1984: Contributions to Indian Geography. Volume V, Resource Geography, Heritage Publishers, New Delhi.  
 Siddhartha, K. 1999: Economic Geography. Kislaya Publication Pvt. Ltd., Patna.  
 Sihag, M.S. and Sihag, Savita, 2011: Resource Geography. Gautam Book Company, Jaipur.  
 Wheeler, J.O. et al 1995: Economic Geography. John Wiley, New York.  
 Zimmernan, E.W. 1951: World Resources and Industries. Harper & Co. New York.

**Paper Code: Geo 211: Practical**

Minimum Marks: 36	Bifurcation of marks	Max. Marks: 100
Written Test on Lab. Work (4 Questions)	32	4 hours
Record Work & Viva-Voce	16+08	
Project Report & Viva-Voce	16+08	
Internal Assessment	20	
Total	100	

N.B. In written test there shall be 2 questions from each section. Candidates have to answer 4 questions selecting at least one question from each section. All questions carry equal marks. Examination be conducted in batches of not more than 20 candidates in a case. 12 hours of teaching practicals be provided for a batch of 20 students per week.

**SYLLABUS**

**Section A**

Preparation of frequency table, graphical representation of data: histogram, frequency polygon, frequency curve and cumulative frequency curve or ogive, finding skewness, computation of mean, median and mode, dispersions: mean and standard deviation and computation of correlations: Karl Pearson's and Spearman's rank, coefficient of variability, theoretical basis of nearest neighbour analysis and exercises.

**Section B**

Locational analysis of urban centres, measurement of disparities, using latest data base: state district, tehsil and development block level, preparation of choropleth, isopleths and isochrone map, population potential surface map, population pyramids map and cartograms.

**Section C**

Three dimensional diagrams: spherical and block pile, drawing of polygraphs, semi-log and log graphs, network analysis, trilinear chart, circular graph, climatograph, annual water budget graphs (surplus and deficiency).

Project Report: A candidate is to prepare project report of a village area for one week away from the Headquarter of the institution. The marking on the project report will be awarded by the external examiner in consultation with the internal examiner concerned. The project should be based on primary data obtained by the candidate. The data should be represented by suitable cartographic methods.

**Books recommended**

Dickinson, G.C. 1973: Statistical Mapping and Mapping Statistics. London.

Lawrence, G.R.P. 1971: Cartographic Methods. Methuen, London.

Mahmood, A. 1998: Statistical Methods in Geographical Studies. Rajesh Publications, New Delhi.

Robinson, A.H. et al. 2004: Elements of Cartography. John Wiley & Sons, Inc., New York.

Rampal, K.K. 1993: Mapping and Compilation: Methods and Techniques. Concept Publishing Company, New Delhi.

शर्मा, जे.पी. 2010-11: प्रयोगात्मक भूगोल की रूपरेखा। रस्तोगी पब्लिकेशन्स, मेरठ।

Singh, R.T. and Singh RPB 1991: Elements of Practical Geography. Kalyani Publishers, New

(5)

**Paper code: Geo A01: Geography of Rural Settlements**

**Section A**

Significance and scope of settlement geography; Development of settlement geography. Methodological advances in the study of settlement geography; Approaches to the study of settlements: Evolutionary, spatial, and ecological; Types of settlement: Clustered and dispersed.

**Section B**

Rural Settlements: Definition and characteristics; Site and situation. The evolution of field boundaries and field patterns. Types and materials of farm fencing; Folk housing and folk architecture; Traditional building materials.

**Section C**

Indian Village: Nature and characteristics; A model of Indian village by Spate; Study of rural settlements in India with special reference to their morphological characteristics; Approaches to the morphogenesis of Indian villages. Orientation and segregation of castes in villages; Dichotomy in built environment: Mohammad Habib and Budha Prakash Debate; Study of landscape as a text.

**Recommended Readings:**

Ahmad, E. 1979. Social and Geographical Aspects of Geography of Human Settlements. New Delhi: Classical Publications.

Ambrose, P. 1970. Concepts in Geography; Settlement Patterns. London: Longmans. Census of India, 1961. House Types and Settlement Patterns of Villages in India. New Delhi.

Chisholm, M. 1969. Rural Settlements and Land Use. London: Hutchinson.

Christaller, C. W. 1966. Central Places in Southern Germany. Englewood Cliffs N. J: Prentice Hall. Cleat, H. D. 1972. Rural Geography: Introductory Survey. Oxford: Pergamon.

Cox, K. R. 1972. Man, Location and Behavior: An Introduction to Human Geography. New York: John Wiley and Sons.

Duncan, J. S. 1990. The City as Text: The Politics of Landscape Interpretation in the Kandya Kingdom. Cambridge: Cambridge University Press.

Eidt, R. C., K. N. Singh, and R. P. B. Singh, 1977. Man, Culture and Settlement. Varanasi: Kalyani Publishers.

Hudson, R. S. 1970. A Geography of Settlements. Estover, Plymouth: Macdonald and Evans.

James, P. E. and C. F. Jones, 1954. American Geography: Inventory and Prospects. Syracuse: Syracuse University Press.

John E. Bush. 1962. The Morphology of Indian Cities. In Roy Turner (Ed.) India's Urban Future. Bombay: Oxford University Press.

King, A. D. (ed.) 1980. Building and Society: Essays on the Social Development of the Built Environment. London: Routledge and Kegan Paul.

Mayer, H. M. and C. F. Kohn. 1959. Readings in Urban Geography. Chicago: University of Chicago Press.

- Mukherji, A. B. 1976. Rural Settlements of the Chandigarh Siwalik Hills (India): A Morphogenetic Analysis. *Geografiska Annaler*, 58(2): 95-115.
- Mukherji, A. B. 1984. Progress in Rural Settlement Geography. In *A Survey of Research in Geography 1972 - 75*. New Delhi: Concept Publishing Company.
- Mukherji, R. K. 1968. *Man and His Habitation: A Study in Social Ecology*. Bombay: Popular Prakashan.
- Noble, W. A. 1969. Approaches toward an Understanding of Traditional South Asian Peasant Dwellings. *Professional Geographer*, 21(4): 264-272.
- Noble, A.G. 2007. *Traditional buildings: A Global Survey of Structural Forms and Cultural Functions*. London: I.B. Tauris
- Rapoport, A. 1965. *House, Form and Culture*. Englewood Cliff NJ: Prentice Hall.
- Rav. A. 1964. *Villages. Towns and Secular Buildings in Ancient India*. Calcutta: Firma K. L. Mukhopadhyaya.
- Singh, J. P. and Khan, M. 2002. *Mystical Space, Cosmology and Landscape: Towards a Cultural Geography of India*. New Delhi: Manak Publication.
- Singh, K. N. 1968. The Territorial Basis of Medieval Town and Village Settlement in Eastern Uttar Pradesh. *Annals of the Association of American Geographers*, 58(2):218-226.
- Singh, R. L. and K. N. Singh (eds.) 1975. *Readings in Rural Settlement Geography*. Varanasi: The National Geographical Society of India, B. H. U.
- Smailes, A. E. 1969. The Indian City: A Descriptive Model. *Geographische Zeitschrift*. September, pp181 - 182.
- Spate, O. H. K. 1952. The Indian Village. *Geography*, 37: 142-152.
- United Nations Centre for Human Settlements (HABITAT), 1966. *An Urbanising World, Global Report on Human Settlements*. Oxford: Oxford University Press.
- Verma, L. N. 2008. *Adhiwas Bhugol (4<sup>th</sup> Edition)*. Jaipur: Rajasthan Hindi Granth Academy.
- Wagner, P. L. and Mikesell, M. W. (Eds.). 1962. *Readings in Cultural Geography*. Chicago: University of Chicago Press.

**Paper code: Geo A02: Plant Geography with Special Reference to Tropics**

**Section A**

Evolution as a discipline, scope and content, Links with other disciplines, Relevance to Geography, Recent trends and need for phytogeographical research, Distinguishing characteristics. Indigenous and exotic flora, Bio-diversity of the tropics.

**Section B**

Terrestrial - forests, grasslands, deserts, Marine and aquatic - mangroves, coastal, Vegetation types of India.

**Section C**

Degradation and depletion of tropical vegetation, Need for conservation and management, Methods - protected area network - effectiveness, Green belts and zones in urban areas.

**Recommended Readings:**

- Akin, W.E. (1991): *Global patterns - Climate, vegetation soils*, University of Oklahoma Press, U.S.A.
- Ewusie, J.Y. (1980): *Elements of Tropical Ecology*, Heinemann Educational Books Inc. London.
- Furley, P.A. and Newey, W.N. (1983): *Geography of the biosphere*, Butterworth & Co. Ltd., London.
- Kellman, M.C. (1975): *Plant Geography*, Methuen & Co. Ltd., London.
- Mani, M.S. (1974): *Ecology and Biogeography in India*. The Hague: Dr. W. Junk Publishers

21

*Raj Jais*  
**Dy. Registrar (Acad.)**  
 University of Rajasthan  
 JAIPUR

Cars. N. (1985): Basic Biogeography. Longman, London.  
Slaymaker, O. and Spencer, T. (1998): Geography and Global Environment Change. Addison Wesley Longman Ltd., UK.  
Smithson, P. et al (2002): The Fundamentals of The Physical Environment, Routledge, London.

**Books for further reading:**

Ali, S. (1990): Notes on National Forest Policy 1988, *Encology*, 5(3), August, 1990, 20—22.  
Bharucha, F.R. (1983): A text-book of the plant geography of India, Oxford University Press, Bombay.  
Dikshit, K.R. (1991): Environment, Forest Ecology and Man in the Western Ghats – The Case of Mahabaleshwar Plateau, Rawat Publ., New Delhi.  
Forest Survey of India (1987-1999): The State of Forest Reports, Dehradun.  
Ganeshaiah, K. N. et al (ed) (2001): Tropical Ecosystems – Structure, Diversity and Human welfare. Oxford & IBH Publ. Co., New Delhi.  
Geethakrishnan, K.P. (1994): National Forest Policy, 1988, *Encology*, 5(3), 15-20.  
Meher-Homji, V.M. (1987): Vegetation types of Peninsular India in relation to environment conditions, in *Explorations in the Tropics*, Prof. K.R. Dikshit Fel. Vol. Comm., Pune, 3-19.  
Meyers, A.A. and Giller, P.S. (1988): *Analytical Biogeography – An Integrated Approach to the Study of Animal and Plant Distribution*, Chapman and Hall, London, New York.  
O’riordan, T. et al (2002): *Biodiversity, Sustainability and Human Communities Protecting beyond the Protected*, Cambridge Univ. Press, U.K.  
Puri, G.S. (1980): *Indian Forest Ecology*, Vols.2, New Delhi: Oxford.  
Sharma, N.P. (ed.) (1992): *Managing World’s Forests*, Kendall Hunt Publ. Co., Iowa.  
Walter, H. (1973): *Vegetation of the Earth in relation to climate and eco-physiological conditions*, English Univ. Press Ltd., London.

Paper code: Geo B01: Geography of Tourism and Recreation

**Section A**

Leisure, recreation and tourism - definitions and relationships- Tourist Mobility and Gazes-Space and Place Context, Evolution of Tourism- historical origins- modernisation- mass tourism- Globalisation and Tourism- opportunities, risks and constraints, Contemporary world patterns- core regions in Global North and South, Tourism and Tourism Spaces- Approaches- areas of research- Role of tourism in development.

**Section B**

The nature of tourism production- Tourism capitalist relationships and regulation theory Dynamics of globalization, Organisation – Models of production- micro firms and MNCs- Spatial fixity and factors of, Supply- Infrastructure, services and marketing, Tourism labour process-flexibilisation- spatio-social context, Tourism consumption-motivational factors- commodification of tourists’ experiences, typologies of tourists’ consumptions- Spatial context.

**Section C**

Impact of tourism- Changing perspective- Commodification of places- Environmental dimension, Economic impact-Employment, labour, Sectoral linkages and hierarchy, Social construction of tourism places- Commodification of culture- Stages; Structuring of tourists’ gazes and place image- Tourists- community relationships, Tourism impact assessment, Tourism development in Rajasthan: Policy and perspective.

22

  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

**Recommended Readings:**

- Banerjee-Guha, S. (2003): Contemporary Tourism Policy and Coastal Districts of Maharashtra: A Critique, unpublished report, Equations. Bangalore, on project conducted at the Department of Geography, University of Mumbai.
- Bhardwaj, D. S. and Chaudhary, M. (1997): Contemporary issues in Tourism, Himalaya, Mumbai
- Bhatia, A.K. (1989): Tourism Development, Principles and Practices, Sterling, Bangalore.
- Bhatia, A.K. (1991): International Tourism: Fundamentals and Practices, Sterling, New Delhi.
- Chris Ryan. (1991): Recreational Tourism, a Social Science Perspective, Routledge, London.
- Cosgrove, I. And Jackson, R. (1972): The Geography of Recreation and Leisure, Hutchinson, London.
- Garg, N.K. (1996): Tourism and Economic Development. Avishkar, Jaipur.
- Hall, C.M. and Page, S. J. (1999): The Geography of Tourism and Recreation, Environment, Place and Space, Routledge, London.
- Hall, C.M. and Page, S.J. (2001): Tourism in South and South-east Asia: Issues and Cases, Butterworth, Heinemann, Oxford.
- Hunter, C. and Green, H. (1995): Tourism and the Environment, A Sustainable Relationship.
- Kaul, R.K. (1985): Dynamics of Tourism and Recreation, Inter India, New Delhi.
- Pearce, D. (1987): Tourism Today-- A Geographical Analysis, Longman Scientific and Technical, New York.
- Pearce, D. (1989): Tourist Development, Longman Scientific and Technical, New York.
- Robinson, H. (1976): Geography of Tourism, Macdonald and Evans, London.
- Shaw, G. and Williams, A.M. (1994): Critical Issues in Tourism, a Geographical Perspective, Blackwell, Oxford, U.K.
- Shaw, G. and Williams, A.M. (2004): Tourism and Tourism Spaces, Sage.
- Sinha, P.C. (1997): International Encyclopedia of Tourism Management, Vol. 1-12, Anmol, New Delhi.

**Books for further reading:**

- Baggio R. and Klobas J. (2011): Quantitative Methods in Tourism, A Handbook. Aspects of Tourism. Channel View Publications, UK, USA, Canada.
- Batra, G.S. and Donghal, R.C. (2002): Tourism promotion and Development, Deep and Deep, New Delhi
- Becken, S. and Hay J., (2012): Climate Change and Tourism, From Policy to Practice, Earthscan. Routledge, Tourism Environment and Development Series, London and New York.
- Chattopadhyay, K. (1995): Economic Impact of Tourism Development, Avishkar, Jaipur.
- Foster, D. (1986): Travel and Tourism Management, Macmillan, Hampshire.
- Fullagar S., Markwell K., Wilson E., (2010): Slow Tourism, Experiences and Mobilities, Aspects of Tourism. Channel View Publications, Bristol, Buffalo, Toronto.
- Holder A and Fennell D. (ed.) (2013): The Routledge Handbook of Tourism and the Environment, Routledge. Taylor and Francis Group, London and New York.
- Kaiser, C, Jr., Helber, L.E. (1977): Tourism Planning and Development, CBI Publishing Co. Inc. Boston.
- Kaur, J.(1985):Himalayan Pilgrimages and New Tourism, Himalayan Books, New
- Kumar, R.B. (1995): Coastal Tourism and Environment, Avishkar, Jaipur.
- Lavery, P. (1971): Recreational Geography, Douglas David and Charles Ltd., Vancouver

23

*Reg. / Jas*  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

- (113)
- Hill R.C. and Morrison, A.M. (1985): The Tourism System: An introductory Text, Prentice Hall International Englewood Cliff, New Jersey.
- Modi, S (2002): Tourism and Society, Rawat, Jaipur.
- Neumeyer, M.H. and Neumeyer, E.S. (1949): Leisure and Recreation, A. S. Barner and Company, New York.
- Newsome D and Dowling R. (ed.) (2010): Geotourism: The Tourism of Geology and Landscape, Goodfellow Publishers Ltd, Oxford.
- Singh, S.(1995): Profile of Indian Tourism, Avishkar, Jaipur
- Singh, S.N.(1986):Geography of Tourism and Recreation, Inter India, New Delhi
- Yadav, Hrishikesh, (ed.) (1995): Sangati Sahyadrichai, Sahyadri Prakashan, Murnbai.
- Yeoman I, et. al. (2012): 2050 – Tomorrow's Tourism, Aspects of Tourism, Channel View Publications, Bristol, Buffalo, Toronto.

**Paper code: Geo B02: Geographical Perspectives on Sustainable Development**

**Section A**

Sustainable Development: Definition, concept and historical developments; difference between economic growth, economic development and sustainable development; economic theories of sustainable development, reconciliation between political and theoretical discourses.

**Section B**

Geography and Sustainable Development: Sustainable development in disciplinary perspective, sustainable development and geographical agenda, geography and the pursuit of sustainable development. Sustainable Development and the Spatial Scale and Spatial Interaction : Structuring global scale, achieving sustainable development at local, regional, national and global scales, sustainable development and open economies, interaction between different spatial scales.

**Section C**

Climate change, Energy, and Sustainable Development: Climate change as a threat to sustainable development, current and future climate regimes, mitigating climate change. Sustainable Development and International Relations: International relations theories, climate change and global discourse, discourses in conflict at international forums. Future Perspectives : Existing strategies for sustainable development, consensus and contest, challenge of sustainable development, sustainable development and societal change.

**Recommended Readings:**

- Adams, W.M. (2001), Green Development : Environment and Sustainability in Developing Countries, 2<sup>nd</sup> edition, Routledge, London.
- Barbier, E.B. (1987), The Concept of Sustainable Development, Environmental Conservation, 14(2), 101-110.
- Daly, H.E. (1999), "Towards Some Operational Principles of Sustainable Development", Ecological Economics, 2(1), 1-6.
- World Commission on Environment and Development (1987), Our Common Future, Oxford University Press. Oxford.
- Purvis, M. and Alan Grainger (2004), Exploring Sustainable Development : Geographical Perspectives, Earthscan, London.

**Further Readings:**

- Bhoovigyan Vikas Foundation (2001), International Conference on Sustainable Life Styles

24

Raj / Jas

**Dy. Registrar (Acad.)**  
University of Rajasthan  
JAIPUR

and Sustainable Development, Contributory Papers, New Delhi.

World Development Report (2003), Sustainable Development in a Dynamic World, Oxford University Press, Delhi.

**Paper code: Geo C01: Geography of Tribes with Special Reference to Rajasthan**

**Section A**

**Tribes and tribal communities- Perspectives in time and space.: (A Historical Perspective)**

Race, Ethnicity and Tribes – Contemporary Global Distribution of Tribes, Differentials in tribal living Location, environment, economy, society and culture of tribes, Social organisation and control.

**Section B**

**Tribes in Rajasthan**

Tribes of Rajasthan- Locational and environmental, – Demography of tribes : Major and minor areas of concentration – Characteristics and classification. Differentials in characteristics - Economic activities and associated status Occupational characteristics of tribals in Rajasthan – Social mobility – Case studies. Issues of integration and marginalization – Analysis of development projects and the placement or Displacement and resettlement of tribals.

**Section C**

**Tribals and mainstream development**

Study of scheduled and non scheduled tribes, Tribals in various sectors of economy and society, Tribal movements – Historical perspectives – Social, economic, political and ecological issues. Tribal Development Policies in India- Colonial and post- colonial policies: Nature, parameters and objectives - Impact of such policies on tribals- A Review.

**Recommended Readings:**

Bhange, N.P.(1993): Tribal Commission and Committees in India, Himalaya Publishing House, Bombay.

Boss, N.K.(1971): Tribal life in India, National Book Trust, New Delhi.

Chkravarty, M. Mukherjee, D.(2009), Indian Tribes, Saraswat library, Calcutta.

Chaudhury, B.(1982): Tribal Development in India: problems and Prospects,

Chaudhary SN (ed) (2012), Tribal Health and Nutrition, Rawat Publication, Jaipur

Pati, R. N. and Jena B (1989) Tribal Development in India, Ashish Publishing House, New Delhi.

T. Prasad (1979): Tribal Geography. An Introductory Bibliography, Classical Publications, New Delhi.

Ramaswami, VS (1988): Tribal Economy; Problems and Prospects, Chugh Publications, Allahabad.

Singh, K.S.(1982): Tribal Movement in India, Manohar Publications, New Delhi.

Singh, S.(1969): Tribal Situation in India, Indian Institute of Advanced Study, Simla

Vivelo, F.R. (1978): Cultural Anthropology, McGraw Hill, New York.

Waterlow, C. (1967): Tribe, State and Community, London

Vyas, N.N. and Mann, R.S.(2008), Indian Tribes in Transition, Rawat Publications, Jaipur

Vyas, N.N. and Mann, R.S.(2008). Indian Tribes of Northern Mato Grosso Brazil, Rawat Publications, Jaipur

25

*Rj / Tai's*  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

**Section A**

**Spatio-Social Perspectives on Crime:**

Crime as a socially constructed and spatially embedded act – Concept, Definitions  
Typologies of Crime- Interrelation with social inequality and underdevelopment.  
Teleological bases- Dynamics of value system and morality -institutional regulation of  
criminality and deviance, Evolution of political, legal and judiciary systems - Democracy  
and secularisation – Social justice, human rights and Crime. Capitalist modes of  
production – Flexibilisation of economy – Time and space convergence and post-  
modernity- Neoliberalism – spatial dimension of crime – Contemporary trends. Theories  
of Crime and space-Anomie; Cultural transmission, Crowding; labeling and conflict  
theory; Power differential, A Critical review.

**Section B**

**Place and Space in Crime**

Emplacement in Crime- The built environment, Local subculture and locales of crime -  
Mobility conditions and places of crime and criminals – regional patterns of crime in  
India. Systemic violence- implications of sex, age, religion, race, caste and class:  
illustrations of sexual violence, child abuse, racist violence; homophobic violence, elder  
abuse – World trends. Geographies of crime and fear- Use of space; Place, space and  
social identity – socio-spatial exclusion. Gender and crime- patriarchy and sexual  
violence- Femininity, masculinity and spatial expression of fear of violence – Rapes,  
domestic violence, - homosexuality and crime.

**Section C**

**Scale, Power, Social Space and Crime; Inter-relations**

International Order and Crime- Patterns of flesh trade, drug trafficking – Geopolitics, war and  
crime- Partition and violence. World patterns of terrorism – terrorism and violence in India.  
Ethnic strife in South Asia – Communal riots in India - State Oppression, peoples'. Protest  
and violence Indian examples. Crime, Justice and the state – Police, prosecution, Judiciary,  
legislation and administration efficacy in space and society- Indian context.

**Recommended Readings:**

Pain Rachel, Barke Michael, Fuller Duncan, et. al., (2001), 'Introducing Social Geographies',  
London, Arnold.

Clinard Marshall B. and Abbott, D. J. (1973), 'Crime in Developing Countries: A  
Comparative Perspective, Wiley International, 1973.

Herbert, D. (1982): The Geography of Urban Crime, Longman London.

Humpheries, D. and Wallace, Don (1980): Capital Accumulation and Urban Crime, Social  
Problems, Vol. 28, No. 2, pp. 179-193.

Newman, O. (1973): Defensible Space, Crime Prevention Through Urban Design,  
Architectural Press, London.

Ahmad, A. (1999): Social Geography, Rawat Publishers.

Daniel, S and Lee, R. (eds.) (1996): Exploring Human Geography, Arnold.

Castells, M., (1996): The Rise of the Network Society, Basil Blackwell, 1996.

Dear, M.J. and Flusty, S. (2000): The Spaces of Postmodernity, Blackwell.

Vincent J. Del Casino, (2009): Social Geography- Critical Introduction to Geography, Wiley-  
Blackwell

26

*Reg | [Signature]*  
**Dy. Registrar (Acad.)**  
University of Rajasthan  
JAIPUR

- Chris Hamnett (ed.), (1996): *Social Geography A Reader*, Arnold.
- Shaban Abdul, 2010, 'Mumbai Political Economy of Crime and Space', Hyderabad, Orient Blackswan Further Reading
- Crawford. A. (1998). 'Crime Prevention and Community Safety', London, Longman
- Evans. D. Fyfe. N R. and Herbert, D. T., (eds.)(1992) *Crime. Policing and Place*', London Routledge
- Munae. J and McLaughlin, E, (eds.) (1996), 'The Problem of Crime', London Sage
- Pain, R, (2000), 'Place, social relations and the fear of crime, a review', *Progress in Human Geography* 24(3)
- Yarwood. R, and Gardner. G, (2000) Fear of crime, cultural threat and the countryside *Area* 32(4). 403- 12
- Clinard. Marshall B. (1961): *Sociology of Deviant Behaviour*, Holt, Rinehart and Winston, New York
- United Nations Interregional Crime and Justice Research Institute (1990): *Essays on Crime and Development*, Publication No. 36, Rome.
- Radzinowicz J. (1966): *Development of Crime* ...
- Wilson, J. and Keating, G. (1997): Broken Windows, in Dunham, R. and Alper, G. (eds.), *Critical Issues in Policing*, Waveland Press, Illinois, pp. 424-437.
- Shaban, Abdul (2007): Mumbai: Space, Crime and its Political Economy, Project Report submitted to BRS, TISS, Mumbai. - Theories of Crime, Entire report.
- Mal'cu, L. (1995): *Social Movements and Social Classes*, Sage
- J. O'Loughlin and Friedrichs, J. (1996): 'Social Polarization in Post- Industrial Metropolises', Water de Gruyter.
- Peet, R. (1977): 'Radical Geography', Maaroufa Press.
- Harvey, D. (1996): 'Justice, Nature and the Geography of Difference', Basil Blackwell.
- Thoms, D.C. (1992): 'Fragmenting Societies', Routledge,
- Babcock. B (1984): 'Unfairly Structured Cities ', Basil Blackwell.
- Castells. M. (1988): 'Information Technology: Economic Restructuring and Urban Development', Basil Blackwell.
- Harvey. D. (1989): 'The Condition of Post Modernity', Basil Blackwell.
- Harvey D. 2001, 'Spaces of Capital Towards a critical Geography', Edinburgh University Press
- Sibley. D. (1995): 'Geographies of Exclusion', Routledge.
- David Atkinson, Peter Jackson, David Sibley and Neil Washbourne, (2005): *Cultural Geography: A Critical Dictionary of Key Concepts*, I.B. Taurus
- Steve, P. and Michael, K. (1993): *Places and the Politics of Identity*, Routledge, U.K.
- Herod Andrew and Wright Melisa, (eds.), 2002, 'Geographies of Power-Placing Scale', Blackwell
- Bagchi Amiya Kumar (1982), 'The Political Economy of under-development', Cambridge University Press, Cambridge.
- G. S. Bajpai (ed.), 2002. 'Development without disorders: Criminological view points, Vishwavidyalaya prakashan.
- Websites:
- [www.istor](http://www.istor) - article by W. Lawrence Neuman and Ronald J. Berger 1988.
- Competing perspectives on cross-National Crime: An Evaluation of Theory and Evidence - source *Sociological Quarterly*. 1988. 29(2). Pgs. 281-313.
- [www.google](http://www.google) (Crime and Development in Africa by I amin Sesay

27

*[Signature]*  
 By: Registrar (Acad.)  
 University of Rajasthan  
 JAIPUR

**Paper code: Geo D01: Practical**

<b>Minimum Marks: 36</b>	<b>Bifurcation of Marks</b>	<b>Max. Marks: 100</b>
Written Test on Lab. Work (4 Questions)	60	4 Hours
Record Work & Viva-Voce	25+15	
Total	100	

**N.B.:** In written test there shall be 2 questions from each section. Candidates have to answer 4 questions selecting at least one question from each section. All questions carry equal marks. Examination be conducted in batches of not more than 20 candidates in any case. 09 hours for teaching practicals be provided for a batch of 20 students per week.

**Section A**

**Design of questionnaire (Field based):** Types: closed and open-ended, Planning, designing and constructing questionnaire for field work- quantifiable data based and perceptual qualitative data based, ethnographic survey method,

**Section B**

Data recording – codification for computer based analysis, Data compilation and analysis.  
**Settlement Hierarchy:** Population and functional – rank-size and primacy: distinction- Construction- Interpretation, Use of NATMO maps for understanding settlement hierarchy – applications.

**Section C**

**Network Analysis:** Topological graphs -Connectivity- Calculations of Alpha, beta and gamma indices, Mapping of relative accessibility and connectivity – Matrices- point of minimum aggregate travel distance.

**Recommended Readings:**

- Gregory, S. (1971): Statistical Methods and Geographer, Longman, London.  
King, C. A. M. (1978): Techniques in Geomorphology, Edward Arnold, London. Taylor,  
Peter J. (1977): Quantitative Methods in Geography, Houghton and Mifflin co., Boston  
Monkhouse, F.J. and Wilkinson, H.R. (1971): Maps and Diagrams, Methuen, London  
Cole, J.R and King, C.A.M. (1968): Quantitative Geography, John Wiley And Sons, London.  
Goudie, A. (1981): Geomorphological Techniques, George Allen And Unwin, London.  
Hammond, R. And McCullagh, P.S., (1974): Quantitative Techniques in Geography: An Introduction, Oxford University Press, London.  
Yeates, M, (1974): An Introduction to Quantitative Analysis in Human Geography, McGraw Hill Book Co., New York.  
Mahmood Aslam, (1977): Statistical Methods in Geographical Studies, Rejesh Publication, New Delhi.  
Rogerson P.A. (2010). 3<sup>rd</sup> Ed. Statistical Methods for Geography, a Students Guide, Sage.  
Ebdon, David, (1985): Statistics in Geography: A Practical Approach, Wiley-Blackwell, New York.

28

Reg / Jais  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

Hotheringham, A.S., Brunson, C., Charlton, M : (2000) Quantitative Geography: Perspectives on Spatial Data Analysis, Sage Publication Ltd, London,  
 Baily, T.C., and Gatrell, A. C, (1995): Interactive Spatial Data Analysis, Prentice Hall, London  
 Griffith, D. A., Layne, L.J., (2002): A Casebook for Spatial Statistical Data Analysis: A Compilation of Analyses of Different Thematic Data Sets, Amazon.com  
 Chen, Y.Q. and Lee Y.C., (ed.) (2003): Geographical Data Acquisition, New York  
 Vallentine G. Clifford, N. (2010), Key Methods in Geography, Sage.  
 Delyser D., Herbert S., Aitken S. (eds.) (2010), The Sage Handbook of Qualitative Research, Sage. 19.  
 Cloke, P., Cook, I, Crang, P., et.al. (2004), Practising Human Geography, Sage.

**Paper code: Geo D02: Practical**

<b>Minimum Marks: 36</b>	<b>Bifurcation of Marks</b>	<b>Max. Marks: 100</b>
Written Test on Lab.Work (4 Questions)	60	4 Hours
Record Work & Viva-Voce	25+15	
Total	100	

**N.B.:** In written test there shall be 2 questions from each section. Candidates have to answer 4 questions selecting at least one question from each section. All questions carry equal marks. Examination be conducted in batches of not more than 20 candidates in any case. 09 hours for teaching practicals be provided for a batch of 20 students per week.

**Section-A**

**Network Analysis:** Topological graphs -Connectivity- Calculations of Alpha, beta and gamma indices, Mapping of relative accessibility and connectivity – Matrices- point of minimum aggregate travel distance.

**Section-B**

**Mental Maps and diagrams:** Typology of distance and direction of space- Construction of Maps, Imagining Place and space: Perception – mapping and interpretation, Interpreting political context of maps, cartographic techniques, diagrams, pictures and cartoons.

**Section-C**

**Techniques Regionalization and Patterns:** Identification of regional boundaries, Boundary girdle technique and synthetic mapping, Index of concentration: location quotient and concentration, Index of similarity and dissimilarity and inequality- Construction and applicability of Lorenz curve- Interpretations – Calculation of Ginni's coefficient of concentration

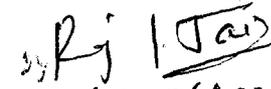
**Recommended Readings:**

- Gregory, S. (1971): Statistical Methods and Geographer, Longman, London.  
King, C. A. M. (1978): Techniques in Geomorphology, Edward Arnold, London. Taylor.  
Peter J. (1977): Quantitative Methods in Geography, Houghton and Mifflin co., Boston  
Monkhouse. F.J. and Wilkinson, H.R. (1971): Maps and Diagrams, Methuen, London  
Cole, J.R and King, C.A.M. (1968): Quantitative Geography, John Wiley And Sons, London.  
Gcudie, A. (1981): Geomorphological Techniques, George Alien And Unwin, London.  
Hammond, R. And McCullagh, P.S., (1974): Quantitative Techniques in Geography: An Introduction, Oxford University Press, London.  
Yeates, M, (1974): An Introduction to Quantitative Analysis in Human Geôgraphy, McGraw Hill Book Co., New York.  
Mahmood Aslam, (1977): Statistical Methods in Geographical Studies, Rejesh Publication, New Delhi.  
Rogerson P.A. (2010), 3<sup>rd</sup> Ed. Statistical Methods for Geography, a Students Guide, Sage.  
Ebdon, David, (1985): Statistics in Geography: A Practical Approach, Wiley-Blackwell, New York.

*Pg 1 (T)*  
**Dy. Registrar (Acad.)**  
**University of Rajasthan**  
**JAI PUR**

**M.A. / M.SC. GEOGRAPHY**  
**III Semester**

S.No.	Subject Code	Course Title	Course Category	Credit	Contact Hours Per Week			EOSE Duration (Hrs.)	
					L	T	P	THY	P
1.	Geo 301	Advanced Geography of India	CCC	4	3	1	0	3	
2.	Geo 302	Fundamentals of Natural Hazards and Disaster Management	CCC	4	3	1	0	3	
3.	Geo 303	Urban Geography	CCC	4	3	1	0	3	
4.	Geo 311	Practical	CCC	6	0	0	9	4	
5.		Elective - I	ECC	4	3	1	0	3	
	GEO A01	Research Methodology							
	GEO A02	Political Geography							
6.		Elective - II	ECC	4	3	1	0	3	
	GEO B01	Advanced Geomorphology							
	GEO B02	Contemporary Issues in Human Geography							
7.		Elective - III	ECC	4	3	1	0	3	
	GEO C01	Marketing Geography							
	GEO C02	Social Geography							
8.		Elective - Practical	ECC						
	GEO D01	Project Work		6	0	0	9	4	
		<b>Total Credit</b>		<b>36</b>					

  
**Dy. Registrar (Acad.)**  
 University of Rajasthan  
 JAIPUR

### III SEMESTER

\*Paper code: Geo 301: Advanced Geography of India

#### Section A

Geological structure and its relation with distribution of minerals, physiographic divisions; climate - various seasons and weather associated with these seasons, mechanism of Indian monsoon, major climatic regions; soil: characteristics, distribution and major soil regions; drainage system and watersheds.

#### Section B

Resource potential and evaluation, water resources & Multi-purpose irrigational projects, vegetational resources, agriculture: typology, major crops, changing pattern of crops and green revolution, animal resources, mineral resources, human resources & population policies.

#### Section C

Resources development and utilization: power, industries and transport, river basins of India, riverine problems of sharing water and their planning, industrial regions and economic regions of India, regional problems.

#### Recommended Readings:

- Bansil, B.C. 1975: Agricultural Problems in India, Delhi.  
Deshpande, C.D. 1992: India-A Regional Interpretation. Northern Book Centre, New Delhi.  
Gopal Krishnan, R. 2001: Geography of India. Jawahar Publishers & Distributions, New Delhi.  
Govt. of India: National Atlas of India, NATMO Publication, Calcutta.  
Govt. of India 1965: The Gazetteer of India, Vol. I & II Publication Division, New Delhi.  
India 2004, Ministry of Information and Broad Casting. Govt. of India, New Delhi.  
Khullar, D.R. 2006: India a comprehensive Geography. Kalyani Publishers, New Delhi.  
Krishna, D. 1971: The New Agricultural Strategy. Delhi.  
Kurdue, A. & Raza, Moonis: Indian Economy the Regional Dimension.  
मन्वरिया, सी. 1999: आधुनिक भारत का वृहत् भूगोल। साहित्य भवन प्रकाशक, आगरा।  
Mahesh Chand and V.V. Puri, Regional Planning in India.  
Mz. Noor., Perspectives in Agricultural Geography. New Delhi.  
Misra, R.P., Regional Planning: Concepts, Techniques and Policies

*Pj / Tar*  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

Paper Code: Geo 302: Fundamentals of Natural Hazards and Disaster Management

Section-A

Concept of Hazards, Risk, Vulnerability and Disaster. Types of Hazards : Natural, man-made. Natural Disasters : Floods, drought and desertification, earthquakes, landslides, avalanches, cyclones, forest fires.

Section-B

Regional Dimension of Hazard : Occurrence and trends with special reference to northwest India. Case Studies : Floods in Delhi, Major Fires in Kolkata, Earthquakes in Bhuj, Rail Accidents in India.

Section-C

Disaster Management : Concepts relating to the Pre-disaster phase, emergency phase, post-disaster phase. Disaster Management Mechanism in India : Agencies, Plans and Policies.

Recommended Readings :

- Allan, S., Adam, B. and Carter, C. (eds.) (2000), Environmental Risks and the Media, Routledge, London.
- Ambala-Bertrand, J.M. (1993), Political Economy of Large Natural Disasters : With Special Reference to Developing Countries, Clarendon Press, Oxford.
- Diaikie, P and Others (1994), At Risk : Natural Hazards, People's Vulnerability and Disasters, Routledge, London.
- Burton, I., Kates, R.W. and White, G.F. (1993), Environment as Hazard, 2nd edition, Guilford Press, New York.
- Hewitt K. (1997), Regions of Risk : A Geographical Introduction to Disasters, Longman, London.
- Kasperson, J.X., Kasperson, R.E. and Turner, B. L. (1995), Regions at Risk : Comparisons of Threatened Environments, United Nation University Press, Tokyo.
- Mitchell, J.K. (ed.), (1999), Crucibles of Hazard : Mega-Cities and Disasters in Transition, United Nations University Press, New York.
- Quarantelli, E.L. (ed.), (1998), What is a Disaster? Perspective on the Question, Routledge, London.
- Schneid, T. and Collins, L. (1998), Disaster Management and Preparedness, Lewis Publishers, Washington, D.C.
- Godschalk, D.R. et.al. (1999), Natural Hazard Mitigation: Recasting Disaster Policy and Planning, Island Press, Washington, D.C.
- Paraswamam, S. and Umikrishnan, P.V. (2000), India : Disaster Report, Oxford University Press, New Delhi.
- Kapur, Anu and Others (2005), Disasters in India : Studies of Grim Reality, Rawat, Jaipur.
- Gupta, M.C., Gupta, L.C., Tamini, B.K., Sharma, Vinod, K. (2000), Manual on Natural Disaster Management in India, National Disaster Management Centre, New Delhi.

Rg Jain  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

## Paper Code: Geo 303: Urban Geography

### Section A

Meaning, aims, importance and scope of urban geography, factors affecting recent trends the growth of town cities different historical periods during neolithic period, greek and roman period. dark ages, medieval period renaissance period, industrial revolution. and modern times, chief characteristics of the towns, trends of urbanisation in the world, urbanisation in india since 1901 and its problems, definitions of urban centres, chief characteristics of modern town, city conurbation metropolian and megalopolis, spatial pattern and distribution of urban centres origin and evolution of urban settlement, types of cities-central placed, urban transportation.

### Section B

Functions and functional classification of towns, urban rank-size relationship, concept of urban economic functions and its urban hierarchy based on functions law of promate city, urban morphology, unplanned growth of towns, urban master plans, morphology of indian cities, functional structure of towns, characteristics of C.B.C. residential area, and other functional areas central place theory (christaller and losch) and models of urban structure theori of urban structure (burgess, hoyt, harris & ullman, mann, white).

### Section C

Centrifugal and centripetal forces in urban geography. development of suburbs, rural, urban fringe, satellite towns, ring towns, sphere of urbae influence (umland) and its delimitation control of urban problems: environmental, urban poverty, slums, transportation, housing, crime, principles of town planning, preparation of a master plan, study of master plan of Jaipur city, principles of regional planning.

#### Recommended Readings:

- A.E. Smailes: The Geography of Towns. Hutchinson, University Library, London.  
Abercrombie: Town and Country-Planning. Oxford University Press, London.  
बंसल, एस.सी. 2010: नगरीय भूगोल, सीनरसी प्रकारान्, मेरठ।  
Carter, Harold 1995: The Study of Urban Geography, Arnold (Publisher) Pvt. Ltd., London.  
Dickinson, R.F.: City Region and Regionalism. Routledge and Kegan Paul London.  
Herrold M. Mayer: Readings in Urban Geography, Central Book Depot, Allahabad.  
N.V. Sovani: Urbanization and Urban India. Asia publishing House, Bombay.  
P.C. Malhotra: Survey of Bhopal City and Bafraagarh (Asia publishing Bombay)  
R.L. Singh: Bangalore as Urban Survey. National Geographical Society of India, B.H.U., Varansi.  
Shah Manzoor Alam: Hyderabad and Secuderabad, Twin City Studies in Urban Geography. Allied Published, Delhi.  
Singh, R.L.: Banars A study in Urban Geography. Student Friends, Allahabad.  
Taylor G.: Urban Geography. Muthuen and Co., London.  
V.K.R.V. Rao: Socio-Economic survey of Greuter Delhi. Asia Publishing Bombay.  
V.L.S. Prakash Rao: T Gowns of Mysore state. Statistical Publishing House, Calcutta.

34

Raj / Jas  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

Paper code: Geo 311: Geography Practicals

Minimum Marks: 36	Bifurcation of marks	Max. Marks: 100
Written Test on Lab. Work (4 Questions)	48	4 hours
Record Work & Viva-Voce.	20+12	
Internal Assessment	20	
Total	100	

N.B. In written test there shall be 2 questions from each section. Candidates have to answer 4 questions selecting at least one question from each section. All questions carry equal marks. Examination be conducted in batches of not more than 20 candidates in any case. 12 hours of teaching practicals be provided for a batch of 20 students per week.

**SYLLABUS**

**Section A**

Methods and techniques of representation of relief: methods and techniques of depicting relief Profile, gradients and calculation of slope, Block diagrams, field sketching, hypsographic curves, altimetric frequency graphs.

**Section B**

Interpretation of topographical maps: a brief history of topographical maps of the world with special reference to India and their interpretation, detailed study of such topographical sheets which depict typical geomorphological and cultural landscapes, scanning and digitization of maps (Raster- Vector Image).

**Section C**

Calculation of scale, number of runs/strips and aerial photographs in a strip, knowledge of stereoscopic vision and use of stereoscope, Air photo interpretation and exercise on the determination of height on Air photo using Parallax Bar.

**Recommended Readings:**

- Robinson, A.H. et al. 2004: Elements of Cartography. John Wiley & Sons, Inc., New York.  
Singh, R.L. and Singh RPB 1991: Elements of Practical Geography. Kalyani Publishers, New Delhi.  
Rampal, K.K. 1993: Mapping and Conflation: Methods and Techniques. Concept Publishing Company, New Delhi.  
Monkhouse, F.J. and Wilkinson, H.R. 1971: Maps and Diagrams. Methuen, London.  
Sharma, J.P. 2011: Practical Geography. Rastogi Publications, Meerut.  
Tiwari, R.C. 2009: Practical Geography. Prayag Pustak Bhawan, Allahabad.

Raj / Jain  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

## Paper Code: Geo A01: Research Methodology

### Section A

Research: meaning, objectives, significance, types of research, research approaches, problems of geographical research, relevant and applied research, hypothesis and its basic concepts, testing of hypothesis, models and paradigm, formulation of research proposal and research design, types of research projects and report writing.

### Section B

Sources of data, methods of data collection, processing, analysis and results, observation and interview questionnaire and field schedule, sampling theory, sample size, sampling techniques, selected techniques of spatial analysis, concentration and dispersal of economic activities, interaction theories, scaling techniques, measurements of disparities and inequalities, methods of delimitation of economic, industrial, agricultural and planning regions.

### Section C

Regional population analysis, population projections, network analysis, delimiting spheres of city influence, core and marginal area, morphometric analysis, drainage basin analysis and slope analysis, biogeochemical cycles, integrated area development planning, use of software for quantitative geographical analysis, introduction to remote sensing and geographical information system in land use analysis.

### Recommended Readings:

- आहुजा, राम 2010: सामाजिक अनुसंधान। रावत पब्लिकेशन्स, नई दिल्ली।  
डी.डी. चौनियाल 2006: सुदूर संवेदन एवं भौगोलिक सूचना प्रणाली। शारदा पुस्तक भवन, इलाहाबाद।  
Guthrie, G. 2010: Basic Research Methods—An Entry to Social Science Research. SAGE Publications, India Pvt Ltd., New Delhi.  
Gupta, S.P. 1979: Statistical Methods. Sultan Chand & Sons, New Delhi.  
Harvey, D. 1969: Explanation in Geography. Arnold Heinemann, London.  
Har Prasad 1992: Research Methods and Techniques in Geography. Rawat Publication, Jaipur.  
K.R. Sharma 2004: Research Methodology. National Publishing House, Jaipur.  
Kothari, C.R. 1990: Research Methodology—Methods and Techniques. Wishwa Prakashan, New Delhi.  
Mishra, H.N. and Singh, V.P. 1998: Research Methodology in Geography. Rawat Publication, Jaipur.  
Mahmood, A. 1998: Statistical Methods in Geographical Studies. Rajesh Publication, New Delhi.  
Mishra, R.P. 1989: Research Methodology. Concept Publishing Company, New Delhi.  
Pal, S.K. 1998: Statistics for Geoscientists – Techniques and Applications. Concept Publishing Company, New Delhi.  
Sharma, P.R. and Yadav, R.S. 2011: Research Methodology: Concepts and Studies. R.K. Books, New Delhi.  
श्रीवास्तव एवं प्रसाद 2008: भूगोल की सांख्यिकी विधियाँ। यमुना प्रकाशन, गोरखपुर।  
श्रीवास्तव प्रकाश शर्मा 2001: विस्तृत भूगोलशास्त्र। पंचशील प्रकाशन, दिल्ली।

## Paper Code: Geo A02: Political Geography

### Section A

Definition, scope nature and importance of political geography: its relation with other social sciences, history and development of political geography: pre-modern phase (before 19<sup>th</sup> Century), geopolitics and German school of thought. Global strategic views: views of Mackinder, Spykman, Meinung, Hooson, De Seversky, World's geostrategic regions, types of approaches, trends of politics in the world modern phase (19<sup>th</sup> to 2000 AD).

### Section B

State and nation, idea of state: elements of the state: territory, population, organization and power, concept of nation, nationalism, heart of the state: core areas, the focus: capital city, frontiers and boundaries: definitions, classification and concepts, boundaries as economic barriers, Indias, borders and their problems, buffer zones, the concept of territorial sea and maritime boundaries. Landlocked states: problem of access, growth of nations and disintegration of empires: unitary and federal states, the dying colonialism and resurgent nationalism, supernationalism: form state of blocks.

### Section C

Extending dimensions of political geography, politics and transportation, geography of foreign aid & economic development, emergence of third world block, politico-geographical study of India, political geography of administration, politico-geographical implications of space research, function, methods and trends of electoral geography: voter's participation before voting prediction, conceptual model of the voting decision, operationalisation of conceptual decision, garrymending in relation to India.

### Recommended Readings:

- Adhikari, S. 2004: Political Geography. Rawat Publications, Jaipur.  
Alexander I.M. 1966: World Political Patterns. John Murray and Co., London.  
De Blij, H.J. and Glasner, Martin 1968: Systematic Political Geography. John Wiley, New York.  
Deshpande, C.D. 1992: India- A Regional Interpretation. Northern Book Centre, New Delhi.  
Dikshit R.D. 1982: Political Geography: A Contemporary Perspective. Tata McGraw-Hill Publishing Co., New Delhi.  
East, W.G. and Spate, O.H.K. 1966: The Changing Map of Asia. Methuen, London.  
Fellmann, J., Getis, A. and Getis, J. 1995: Human Geography: Landscapes of Human Settlements. WCB Brown Publishers, Dubuque.  
Gunn, J.L. and Chatterj, P.R.: A New Approach to Economic Geography. World Press, Kolkata.  
Pounds, N.J.G. 1972: Political Geography. McGraw Hill, New York.  
Short, J.R. 1982: Political Geography of the 20<sup>th</sup> Century A Global Analysis. New York.  
सर्वसेना, एम.एम.: राजनैतिक भूगोल के सिद्धान्त। रस्तोगी प्रकाशना।  
Taylor, P. 1985: Political Geography. Longman, London.

Raj / Tar  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

## Paper Code: Geo B01: Advanced Geomorphology

### Section A

Fundamental concepts of geomorphology; schools in geomorphology, recent trends in geomorphology, earth movements; epeirogenic, orogenic types and classification of weathering, mass movement erosion, plate tectonics, seismicity, vulcanicity, orogenic structures with reference to the evolution of Himalaya, various models of landscape evolution (Davis, Penck, King, Haaks, Morisawa, Schumm, polyeylic evolution of landscapes.

### Section B

Geomorphic processes, dynamics of fluvial, glacial, Aeolian, marine, and karst processes and resultant landforms, polyeylic landforms, various models of slope development (Wood, Davis, Penck, King, R. Savigear, Strahler, Fisher-Lehmann, Young), concept of morphogenetic region. Systems in geomorphology; Models in geomorphology, erosion surfaces-techniques of identification and correlation.

### Section C

Terrain evaluation, geomorphic mapping, geomorphic hazards and mitigation measures; Digital Elevation Model (DEM) and Triangulated Irregular Network (TIN) unit, land capability and land suitability classification, hydro-geomorphology, urban geomorphology, environmental geomorphology, geomorphic hazards.

### Recommended Readings:

- Ahmed, E. 1985. *Geomorphology*. Kalyani Publishers, New Delhi.  
Bloom, A. L. 1998/2001: *Geomorphology*. Prentice Hall of India, New Delhi.  
Chorley, R.J., Schumm S A and Sugden D E. 1984: *Geomorphology*. Methuen and Company Ltd., London  
Cooke, R.U. and Doornkamp, J.C. 1974: *Geomorphology in Environmental Management-A introduction*. Clarendon Press, Oxford.  
Chorley, R.J. 1972 *Spatial Analysis in Geomorphology*. Methuen, London.  
Dayal, P. 1994: *A Text Book of Geomorphology*. Kalyani Publishers, New Delhi.  
Dury, G.H. 1959: *The Face of the Earth*. Penguin Harmondsworth.  
Fairbridge, R.W. 1986: *Encyclopedia of Geomorphology*. Reinholdts, New York.  
Goudie, A. 1993: *The Nature of the Environment*. Oxford & Blackwell, London.  
Garner, H.E. 1974: *The origin of landscape-A Synthesis of Geomorphology*. Oxford University Press, London.  
Jog, S. R. (ed.) 1995: *Indian Geomorphology (2 vols.)*. Rawat Publications, Jaipur.  
Kale, V. and Gupta, A. 2001: *Introduction to Geomorphology*. Orient Longman, Hyderabad.  
Mitchell, C.W. 1973: *Terrain Evaluation*. Longman, London.  
Ollier, C.D. 1979: *Weathering* Longman, London.  
Pitty, A.P. 1971: *Introduction to Geomorphology*. Methuen, London.  
Singh, S. 2004: *Geomorphology*. Prayag Pustak Bhawan, Allahabad.  
Stoddart, D.R. (ed) 1996: *Process and Form in Geomorphology*. Routledge, New York.  
Sparks, B.W. 1986: *Geomorphology*. Longmans, London.  
Thornbury, W.D. 2005: *Principles of Geomorphology*. John Wiley and Sons, New York.  
Thornbury, W.D. 1960: *Principles of Geomorphology*, John Wiley, New York.

**Paper Code: Geo B02: Contemporary Issues in Human Geography**

**Section-A**

Human Geography : Changing nature or perspectives, issues and debates, critical understanding of social theory and human geography. Conceptualizing Space and Place : Structure and dynamics of space; relational framework of space and place; social construction of space and time; ethics of space and place.

**Section-B**

Geography of Difference and Exclusion : Geographies of identity and difference related to class, religion, caste, gender and location; social justice and political geography of difference. Geographical Organisation of Power : Spatial meaning and definitions of power; dynamics of spatio-social interactions and power; geopolitics of power-territoriality and globalization.

**Section-C**

Geography of Development : Meaning, definitions and approaches; construction of development indicators; linking globalisation and new forms of development; local initiatives towards development. Geography of social action and movements : Reasons and approaches to social movements; aspects of social security; social-environmental movements in India.

**Recommended Readings :**

- Agnew, J.A. and Corbridge, S. (1995), *Mastering Space : Hegemony, Territory and International Political Economy*, Routledge, London.
- Benko, G. and Strohmayr, U. (1997), *Space and Social Theory : Interpreting Modernity and Postmodernity*, Blackwell Publishers, Oxford, London.
- Bhabha, H. (1994), *The Location of Culture*, Routledge, London and New York.
- Corbridge, S., Martin, R. and Thrift, N. (1997), *Money, Power and Space*, Blackwell, Oxford.
- Derek, G., Martin, R., and Smith, G. (1994), *Human Geography : Society, Space and Social Science*, Macmillan Publishers, Cambridge.
- Johnston, R.J. (1991), *A Question of Place : Exploring the Practice of Human Geography*, Blackwell Publishers, Cambridge.
- Harvey, D. (1996), *Justice, Nature and Geography of Difference*, Blackwell Publishers, Cambridge.
- Massey, D. (1998), *Space, Place and Gender*, Polity Press, Cambridge.
- Massey, D., Allen, J., and Sarre, P. (1999), *Human Geography Today*, Blackwell Publishers, Cambridge.
- Morley, D. and Robins, K. (1995), *Spaces of Identity : Global Media, Electronic Landscapes and Cultural Boundaries*, Routledge, London.
- Redcliff, M. and Benton, T. (1994), *Social Theory and Global Environment*, Routledge, London and New York.
- Rogers, A. and Vertovec, S. (1995), *The Urban Context*, Berg, Oxford.
- Sack, R.D. (1997), *Homo Geographicus : A Framework for Action, Awareness, and Moral Concern*, The John Hopkins University Press, London.
- Sibley, D. (1995), *Geographies of Exclusion : Society, and Difference in the West*, Routledge, London.
- Werlen, B. (1993), *Society, Action and Space : An Alternative Human Geography*, Routledge, London.

**Paper Code: Geo C01: Marketing Geography**

**Section-A**

**Marketing Geography:** Definition, scope and significance. Growth and development. Approaches of study: Commodity, Spatial, Social, Economic, Behavioural. Application of Planning: Market, Urban, Agriculture.

**Section-B**

**Markets:** Classification, structure and hierarchy, Markets participants, Market Channel and Trade Area, Theoretical Framework for Study of Market Centres: Christaller and Losch Model of Market Locations; B.J. Berry's Model and Reilly's Models of interaction and trade area delimitation.

**Trade,** Classification and structure: Local, Regional, National, and International. Historical Development of Trade, Factors of Development of Trades.

**Section-C**

**Indian Agricultural Marketing:** Definition, Types and Structure, Formal Marketing: Regulated, Government Purchase Centres. Informal Marketing: Local, Regional, Private Traders, Processing Units. Marketing Channels, Foodgrains and Vegetables, WTO and Agricultural Marketing: Its impact on agriculture, environment, Food Security and Society.

**Recommended Readings:**

- Acharya, S.S & Agarwal, N.L (1987) Agricultural Marketing in India, Oxford & IHB Publishing Co, New Delhi.  
Berry, B.J.L. (1967) Geography of Market centers and Retail Distribution. Prentice Hall, Englewood cliffs, N.J  
Davis, R.L. (1976) Marketing Geography, Methuen, London,  
Dixit, R.S. (1984) Marketing Centers and their spatial development in the Umland of Kanpur, Allahabad  
Garnier, B, J and Delobéz. A (1977) Geography of Marketing, Longman, London.  
Khan, N (1991) Agriculture development and Marketing, H.K. Publisher, New Delhi  
Losch, A (1954) Economics of Location. Yale University press, New Heaven,  
N.C.A.E.R (1983) Market towns and Spatial Development in India, NCAER, N.D.  
Saxena, H.M (1984) Geography of Marketing. Concepts and Methods, New Delhi.  
Saxena, P. Marketing and Sustainable Development. Rawat Publication, New Delhi.  
Singh, G.N. (1987) Agricultural Marketing in India. Hugh Publication, Allahbad.  
Rajgopal (2001) Rural Marketing. Rawat Publication, New Delhi

*P. J. [Signature]*  
Registrar (Acad.)  
University of Rajasthan  
Jaipur

**Paper Code: Geo C02: Social Geography**

**Section-A**

Definition, nature and scope of social geography. Social geography in the realm of social sciences. Concepts and themes in social geography : Social space. Social segregation. Social justice. Social well-being. Ethnicity.

**Section-B**

Evolution of socio-cultural regions in India : Evidence from classical literature. Core and peripheral regions. Attributes of spatial distribution of : Tribes. Religion. Language. Casta.

**Section-C**

Social transformation and change in India : Modernization and sanskritization. Role of rural-urban interaction. Problems of social transformation. Social and ethnic diversity of India and national integration. Cultural pluralism and development.

**Recommended Readings :**

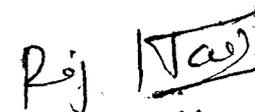
- Ahmad, Aijazuddin : Social Geography, Rawat Publications, New Delhi, 1999.  
Jones, Emrys and John Eyles : An Introduction to Social Geography, Oxford University Press, London, 1977.  
Jones, Emrys (ed.) : Readings in Social Geography, Oxford University Press, London, 1975.  
Khare, R.S. : Cultural Diversity and Social Discontent, Sage India, New Delhi, Sage India, 1998.  
Mandelbaum, David G. : Society in India, University of California Press, Berkeley, 1970.  
Rao, M.S.A. : Urbanisation and Social Change, Orient Longmans, New Delhi, 1970.  
Sareer, T.R. and S.R. (ed.) : Castes and Tribes of India, Anmol, New Delhi, 1993.  
Singer, Milton and B.S. Cohn (ed.) : Structure and Change in Indian Society, Aldine, Chicago, 1968.  
Singh, K.G. : Tribal Situation in India, Indian Institute of Advanced Studies, Shimla, 1972.  
Sopher, David E. : An Exploration of India, Longman, London, 1980.  
Srinivas, M.N. : Social Change in Modern India, Orient Longman, 1966.  
Srinivas, M.N. (ed.) : Caste : Its Twentieth Century Avatar, Penguin India, New Delhi, 1997.  
Atreya, B.L. et. al. (ed.) : Indian Culture, Universal Publications, New Delhi, 1956.  
Dubey, S.C. : Indian Society, National Book Trust, New Delhi, 1991.  
Sen, Amartya, and Dreze Jean : Indian Development : Selected Regional Perspectives, Oxford University Press, Delhi, 1996.

**Paper Code: Geo D01: Project Work**

*P. J. / J. A. S.*  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

**M.A. / M.SC. GEOGRAPHY**  
**IV Semester**

S.No.	Subject Code	Course Title	Course Category	Credit	Contact Hours Per Week			EOSE Duration (Hrs.)	
					L	T	P	THY	P
1.	Geo 401	Geography of Rajasthan	CCC	4	3	1	0	3	
2.	Geo 402	Agricultural Geography	CCC	4	3	1	0	3	
3.	Geo 403	Applied Geography	CCC	4	3	1	0	3	
4.	Geo 411	Practical	CCC	6	0	0	9	4	
5.		<b>Elective - I</b>	ECC	4	3	1	0	3	
	GEO A01	Bio Geography							
	GEO A02	Industrial Geography							
6.		<b>Elective - II</b>	ECC	4	3	1	0	3	
	GEO B01	Regional Planning and Development							
	GEO B02	Geography of Water Resources							
7.		<b>Elective - III</b>	ECC	4	3	1	0	3	
	GEO C01	Oceanography							
	GEO C02	Principles and Applications of Remote Sensing and Geographical Information System							
8.		<b>Elective - Practical</b>	ECC						
	GEO D01	Dissertation		6	0	0	9	4	
		<b>Total Credit</b>		<b>36</b>					

  
**Dy. Registrar (Acad.)**  
 University of Rajasthan  
 JAIPUR

## IV SEMESTER

### Paper Code: Geo 401: Geography of Rajasthan

#### Section-A

Physical aspects of Rajasthan: geological structure, relief, climate, drainage, natural vegetation, environmental pollution-causes and types, drought, desertification, soils, soil erosion and conservation, availability, problems and conservation of water resources.

#### Section B

Economics aspects: irrigation, sources, types, irrigation intensity, crop wise irrigation, quality of irrigation water, problems, irrigation projects: detailed study of Indira Gandhi canal project, Chambal valley project, Mahi bafaj sagar project on physical and socio-economic aspects.

Agriculture: development under five year plans, problems of agriculture development, general land use: live-stock and dairy development, minerals, industries: textiles, sugar, cement, marble and granite, fertilizer, zinc and copper smelting, power & energy: hydro-electricity, coal, petroleum, solar energy, bio-energy, transport & trade, development of tourism, desert development programme, tribal areas development programme, Aravalli hill development programme.

#### Section C

Cultural and development aspects: population-number, growth, distribution and density, rural and urban, male and female population, literacy status, occupational structure, schedule castes and schedule tribes, population problems, study of Bhil, Meena and Garasia, settlement: types, building materials and house types and factors affecting settlements in Rajasthan.

#### Recommended Readings :

- Bhalla L.R. 1996-97: Geography of Rajasthan. Kuldeep Publications, Ajmer.  
Dhillon, S.S. 1988: Desert Spread and Desertification. Environmentals, Jaipur.  
Govt. of Rajasthan Techno-Economics Survey Of Rajasthan. Govt. of Rajasthan Publication.  
Gujar, R.K 1992: Geography of Indira Gandhi Canal. Rajasthan Hindi Granth Academy.  
Lodha, R. & Maheshwari, D. 2001: Geography of Rajasthan. Shahitya Bhawan Publication, Hospital Road, Agra.  
Maheshwari, D. 2008: Geography of Rajasthan. Shahitya Bhawan Publication, Hospital Road, Agra.  
Mishra, V.C. 1967: Geography of Rajasthan. National book trust of India, New Delhi.  
Sharma H.S. and M.L. Sharma 2014: Geography of Rajasthan. Panchcil Puplicher, Jaipur.  
Singh. Atur 1992: Flood Prone Areas of India. Aviskar Publishers Jaipur.  
Sharma B. L. 1984: Agricultural Typology of Rajasthan.  
Sing, R.J. 1977: Regional Geography of India.

Raj / Jas  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

Paper Code: Geo 402: Agricultural Geography (Elements & Applied)

Section A

Agriculture geography: nature and development, origin dispersal and development of agriculture, field survey and mapping in agriculture geography, geographical determinants of agricultural land use: relief and climate, soils, human determinants of agriculture.

Section B

Models in agricultural geography, diffusion of agriculture innovations, land use and land capability classification, agricultural efficiency productivity, agricultural evaluation, techniques, crop ranking intensity, crop diversification and crop combination regions.

Section C

Agricultural regionalization, agricultural typology, green revolution, agricultural scenario in India, agro-climatic zones: India and Rajasthan, agricultural policy in India.

Recommended Readings:

- Ali Mohammad 1981: Situation of Agricultural Geography. Rajesh Publication, New Delhi.  
Ali Mohammad : Situation of Agricultural, Food and Nutrition in Rural India. Concept Publishing Co., Delhi.  
Ali Mohammad : Dynamics of agriculture Development in India. Concept Publication Co., Delhi.  
ICAR (1956-71): Soil and Water Conservation Research.  
ICAR : Soil Conservation of India.  
Kostowickie, Z. : Agricultural Typology. Polish Academy, Warsaw.  
Symon Lesia 1967: Agricultural Geography. G. Gell and Sons Ltd., London.  
Singh, R.L. (Ed.) : Applied Geography. BHU Press, Varanasi.  
Singh P.P. Govind Raju, K.C. and others : new Seeds Adoption and Yield, Sterling Publication Pvt. Ltd., New Delhi.  
Singh, Jasbir : Agricultural Atlas of India. Vishal Publishers.  
Singh, Jasbir : Agricultural Geography of Haryana.  
Noor Mohammad : Agricultural Land use in India. Inter-India Public, Delhi.

Raj / Tai  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

(36)

**Paper Code: Geo 403: Applied Geography**

**Section A**

Meaning, nature and scope, principles and approaches, application of geographical methods of survey and geospatial tools in analysis of resource base, its appraisal, micro, regional planning and demographic attributes.

**Section B**

Delineation of resource regions, regional divisions according to variations in levels of socio-economic development, special purpose regions-river valley regions, national capital region, problem regions- hilly regions, tribal regions, regions of drought and floods.

**Section C**

Planning for a region's development, state capital region (Jaipur), indicators of development and their data sources, measuring levels of regional development and disparities-case study of Rajasthan, land use policy implications in India with special reference to India, review of policies related to decentralized planning formulation at national, state, district, block and grass root level.

**Recommended Readings:**

- Bhat, L.S. et al 1976: Micro-Level planning: A Case Study of Karnal Area, Haryana, K.B. Publications, New Delhi.
- Blair, J. P. and Carroll, M. C. 2009: Local Economic Development - Analysis, Practices, and Globalization. SECOND EDITION, SAGE PUBLICATIONS, INC.
- Chandna, R. C. 2008: Regional Planning and Development. Kalyani Publishers, Ludhiana.
- Dutta, A.K., Mishra, H.N. and Chatterjee, M. 2008 (eds.): Explorations in Applied Geography. Pratiche-Hall of India Private Limited, New Delhi.
- Friedmann, J. 1992: Empowerment: The Politics of Alternative Development. Blackwell, Oxford.
- Gosal, G.S. and Krishan, G. 1984: Regional Disparities in Levels of Socio-Economic Development in Punjab. Vishal Publications, Kurukshetra.
- Gupta, P. and Senayak, G. 1968: Economic Regionalization of India: Problems and Prospects. Census of India, New Delhi.
- Johnson, E.A.J. 1970: The Organisation of Space in Developing Countries. Harvard University Press, Cambridge.
- Khandu, A. and Raza, M. 1982: Indian Economy, The Regional Dimension. Spectrum Publishers, New Delhi.
- Mishra, R. P. (ed.) 1992: Regional Planning: Concepts, Techniques, Policies and Case Studies. Concept Publishing Company, New Delhi.
- Nangia, S. 1976: Delhi Metropolitan Region. Rajesh Publication, Delhi.
- Pacione, M. 2009 (ed.): Applied Geography: Principles and Practices. Routledge, London.
- Pathak, C. R. 2003: Spatial Structure and Processes of Development in India. Regional Science Association, Kolkata.
- Raza, M. 1988: Contributions to Indian Geography. Volume X, Regional Development. Heritage Publishers, New Delhi.
- शारदा, श्री. 1997: प्रदेशीय नियोजन और समृद्धि विचार। राष्ट्रीय प्रकाशन, भुवनेश्वर।
- Sundaram, K. V. 2004: The Trodden Path: Essays on Regional and Micro Level Planning. Ananya Publications, New Delhi.

Pg. 1/1  
Tae

Tty. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

## Paper Code: Geo 411: Practical

Minimum Marks 36	Bifurcation of Marks	Max. Marks 100
Written Test (Four Hours)	32 Marks	
Record Work and Viva-Voce.	12+04	
Field Survey and Viva-Voce. 2 hours	12+04	
Camp Work and Viva-Voce.	12+04	
Internal Assessment	20	
Total	100 Marks	

N.B. In written test there shall be 2 questions from each section. Candidates have to answer 4 questions selecting at least one question from each section. All questions carry equal marks. Examination be conducted in batches of not more than 20 candidates in any case. 12 hours of teaching practicals be provided for a batch of 20 students per week.

### SYLLABUS

#### Section A

The art of surveying, history of surveying, scope and utility, problems and classification of surveying, use of plane table survey, types of traversing, resectioning in plane table survey: two and three point problems, use of Indian pattern clinometer.

#### Section B

Use of dumpy level, practical contouring cross sectioning; use and application of alby level, theodolite: its parts and their functions, use, traverse and traverse computation, independent coordinates.

#### Section C

Use of total station and GPS, interpretation and identification of cultural and physical features on aerial photographs, photo interpretation of land use and settlements in the field.

Camp Work: A topographical survey of about 100 hectares in a settlement for one week away from the headquarter of the institution. Survey reports of the same will be prepared with the help of computer technology (word programme & AutoCAD). The marking on the survey report will be awarded by the external examiner in consultation with the internal examiner concerned.

#### Recommended Reading:

- B.C. Punmia 1988: Surveying and Field Work, Vol. I, Laxmi Publications, New Delhi.  
Breed, C.B. and Hosmier, G.L.: The Principle of Surveying, Vol. I and II, New York.  
Devis, R.E. and Foot, F.S.: Surveying theory and practice. Mc-Graw Hill Book Co., New York.  
Gautam, N.C.: Urban Land use studies through Airphoto Interpretation, Roorke Engineering College: Manual of Surveying.  
T.R. Tracy: Surveying theory and practice. John Willey and Sons, Inc., New York.  
Thrillfall, H.S., A.: Text Book of surveying and Levelling. Charles Griffin, London.  
Techniques: Pink Publishing House, Mathura.

*P. J. Jais*  
Dy. Registrar (Acad.)  
University of Rajasthan  
JALPUR

46

**Paper Code: Geo A01: Bio Geography**

**Section A**

Definition, scope and significance nature, approaches, history, recent trends and developments, plant and animal ecology forms and functions of eco system, ecosystem with special reference to mountain and desert factors influencing distribution of flora, taxonomical and ecological classification of plant, ecological succession, ecotone and community, patterns of distribution of world vegetation.

**Section B**

Nature and classification of animals, dispersal and migration of animals: type and causes – case studies, geographical isolation, the zoo-geographical region, biogeography of the seas: island biogeography.

**Section C**

Conservation and management of forest and wild life with reference to India, process of desertification, its consequences and management principals, projecting into the future: climate change: biogeographical consequences of global change: changing communities and biomes, effect of climate change on biological diversity, environmental hazards and problems of pollution.

**Recommended Readings:**

- Anjuneysulu, Y. 2002: Environmental Impact Assessment Methodologies. B.S. Publications, Hyderabad.
- Anjuneysulu, Y. 2004: Introduction to Environmental Science. B.S. Publications, Hyderabad
- Beakie, P. Carmon, T. and Davis, I (eds.) 2004: At Risk: Natural Hazards Peoples Vulnerability and Disasters. Routledge, London
- Clarke, J.I. Curson, P. Kayastha, S.L. and Nag, P. (eds.) 1991: Population and Disaster. Basil Blackwell, U.S.A.
- Cox, C.B. Moore, P.D. 2010: Biogeography- An Ecological and Evolutionary Approach. John Wiley and Sons, U.S.A.
- Huggett, R.J. 1998: Fundamental of Biogeography. Routledge, London.
- Ladle, R.J. and Whittaker, R.J. 2011: Conservation Biology. Blackwell Publications Co., U.S.A.
- Mathur, H.S. 1988: Essentials of Biogeography. Pointer Publishers, Jaipur.
- Macdonald, Geen, 2002: Biogeography: Introduction to Space-Time and Life. John Wiley, New York.
- Odum, E.P. 1975: Ecology. Rowman and Littlefield. Lanhan U.S.A.
- Robinson, H. 1982: Biogeography. Else, Mc. Donald and Evans London.
- Singh, A.K., Kamra, V.K. and Singh, J. 1986: Forest Resource: Economy and Environment. Concept Publishing Company, New Delhi.
- सिंह, एच. 2013: जीव भूगोल। प्रकाश पुस्तक भवन, राजस्थान।

*Raj Kaur*  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

## Paper Code: Geo A02: Industrial Geography

### Section A

Evolution of industrialization (India and World), location factors of industries, theories: least cost school, transport cost school, market areas school, marginal location school and behavioural school, new trends in industrial geography, concept of entrepreneur, significance of enterprise and firm, significance of cost and price.

### Section B

Formation and delineation of industrial regions, industrial complexes, industrial regionalization, industrial regions in India: Hooghly side industrial regions, Damodar valley industrial regions, Delhi-Mumbai industrial corridor, industrial policies of India, liberalization, privatization and globalization (special reference of India); special economic zones, industrial regions of World: Ruhr basin industrial region, Great lakes industrial region.

### Section C

Industries: cotton, jute, textile, iron and steel, aluminium, fertilizer, paper and pulp, copper, chemical and pharmaceutical, ship building, automobile, cottage and agro-based industries, tourism industry, concept of optimum location, geographical inertia, multi-location industries, market oriented industries, foot loose industries, raw material oriented industries, manufacturing industries, processing industries.

#### Recommended Readings:

- Lloyd and Dicken: Location in Space: A theoretical Approach to Economic Geography.  
M.C. Cart and Lindberg Holder and Lee Economic Geography: A proface to Economic Geography  
Smith, D.E. Cox K.P. Man: Industrial Location. A Economic, Geographical Analysis  
Location and Behavior-An Introduction to Human Geography.  
Riley, R.C. 1973: Industrial Geography. Chalco and windus, London.  
Bengston, N.A.: Fundamentals of Economic Geography. Prentice Hall, New York.  
Besoh, H.: A Geography of world Economy, D. Van Nostrand.  
Britton, John. N.H.: Regional Analysis and Economic Geography. G. Bell and Sons, London.  
Estall, R.C. and Buchanan, R.O.: Industrial Activity and Economic Geography. Hutchinson and Co., London.  
Ghose, B.C.: Industrial London.  
Hoover, E.M.: The Location of Economic Activity. McGraw Hill Books Co. New York.  
Saxena, Economic Geography.

Raj (Taj)  
Dy. Registrar (Acad.)  
University of Rajasthan  
@JAIPUR

## Paper Code: Geo B01: Regional Planning and Development

### Section A

Conceptual and theoretical framework of regional planning, principles and determination of regional planning, multi-level planning and inter-regional stresses, regional hierarchy, role of geography in preparation of a regional plan, significance of the term integration (political, economic and spatial) for regional planning.

### Section B

The process of regional development: indicators of development; levels of regional development and disparities, strategies for development. regional planning in India: concept and indicators of development; regional imbalances; type of regions and methods of regionalization, growth pole and growth centers, environmental issues in regional planning for sustainable development, demarcation and planning regions of India.

### Section C

Role of remote sensing, global positioning systems (GPS) and geographic information system (GIS) in modern regional planning, case studies from selected countries: regional planning in USA (TVA), regional planning in India (DVC and NCR) regional planning in Netherlands, Principles of town and country planning.

#### Recommended Readings:

Dube K. N. (ed) 1990: Planning and Development in India. Asia Publishing House, New Delhi.

Govt. of India 1986: Regional Plan 2001 - National Capital Region. NCRPB, Ministry of Urban Development, New Delhi.

Bhat, L. S. 1973: Regional Planning in India. Statistical Publishing Society, Kolkata.

Blair, J. P. and Carroll, M. C. 2009: Local Economic Development - Analysis, Practices, and Globalization. SECOND EDITION, SAGE PUBLICATIONS, INC.

Chandna, R. C. 2008: Regional Planning and Development. Kalyani Publishers, Ludhiana.

Journal of Geography and Regional Planning (JGRP) is an open access.

Hufschmidt, M.M. 1969: Regional Planning: Challenges and Prospectus. Praeger and Company, New York.

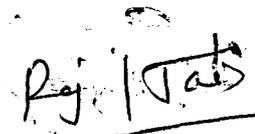
Mishra, R.P. 1978: Regional Planning and National Development. Vikas Publications, New Delhi.

Mishra R.P. (ed) 1992: Regional Planning: Concepts, Techniques, Policies and Case Studies. Concept Publications, New Delhi.

श्रीवास्तव, रमण एवं चौहान 2008: प्रादेशिक नियोजन और सतुलित विकास। वसुधैव कुटुम्बकम् प्रकाशन, गोरखपुर।

[www.academia.edu/Papers/in/Economic\\_Geography](http://www.academia.edu/Papers/in/Economic_Geography)

[www.jstor.org/stable/143805](http://www.jstor.org/stable/143805)

  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

## Paper Code: Geo B02: Geography of Water Resources

### Section A

Definition and scope of water resource geography, inventory and distribution of world's water resources, water resources of India, groundwater, hydrological cycle, demand and use of water, irrigation methods.

### Section B

Salinity, alkalinity, overexploitation of groundwater and arsenic problem, water pollution, river water pollution, demand and water supply in industries, flood management, drought and dry land farming.

### Section C

Water conservation/participatory approach, traditional methods of water conservation in India and Rajasthan, integrated basin planning, watershed management, river water disputes, water management by remote sensing technology, environmental disasters and water crisis.

### Recommended Readings:

- Agarwal, Anil 2001: Drouht: Try Capturing the Rain, Briefing paper. Down to Earth. Centre for Science and Environment, New Delhi.
- Agarwal, Anil and Narain Sunita, 1998, (eds.): Dying Wisdom: Rise, Fall and Potential of India's Traditional Water Harvesting System. Centre for Science and Environment, New Delhi
- Black, Magic, 2005: The No-Nonsense Guide to Water. Rawat Publications, Jaipur.
- Black, Magic, 2004: A Matter of Life and Health. OUP, New Delhi.
- Barlow and Clark Tony, 2002: Blue Gold: The Battle Against Corporate Theft of the World's Water. Earthscan, London
- भारती, वाराणसी, 1998: भारत की नदियाँ। नेशनल बुक ट्रस्ट ऑफ इण्डिया, नई दिल्ली।
- Climate Change, 2001: International Pannel on climate Change. Cambridge University Press.
- Clarke, Robin 1991: Water: The International Crisis. Earthscan, London.
- Dams and Development 2000: Report of the World Commission on Dams. November.
- Das, P.K. 1996: The Monsoon. National book Trust, India, New Delhi.
- Dhruv Narain, V.V., Shastry, G. and Patnaik U.S. 1990: Watershed Management. ICAR, New Delhi
- Dakshinamurti, C., Michael, A.M. and Mohan, S., 1972: Water Resources of India and their Utilization in Agriculture. IARI Monograph No. 3, New Delhi.
- Gujjar, R.K. 1990: Geographical Perspectives on Irrigation. Rawat Publications, Jaipur.
- Gouldie, A., 1997: The Nature of the Environment, Blackwell, London.
- Kimmerley, David, 1988: Troubled Water: River, Politics and Pollution. Hilen Shipman, London.
- Mahool, N.C. and Singh, P.C. 1993: Soil and Water Conservation. Interooperation Coordination Office, Jaipur.
- Narain, Sunita, 2004: Down to Earth, February 29, 2004.
- Park, C., 1997: The Environment. Principles and Application. Knowledge, London /
- Rao, K.L., 1975: India's Water Wealth. Orient Longman, New Delhi.
- Singh, Gopal, 2004: A Geography of India. Alms Ram & Sons, New Delhi.
- Shiva, Vandana, 2002: Water Wars: Privatization, Pollution and Profit. Pluto Press, London.
- Some Water Resources Plan, 1992: Volumes, I, II, III : Tahal consulting Engineer. Ltd. Tel Aviv, Israel.
- Sidhartha, K., 1996: Flood in India: A Model for Generating Pastors. Cendor Patna.
- Sidhartha, K., 1989: Drought in India: Spatio Temporal Variations. H.T. Patna.
- Sligh, R.L., 1971: India: A Regional Geography. NAGI, New Delhi.
- World, C., 1997: Refreshed in Water: A Crisis of Resoul Respo,ability. Cassell London.

Dr. Raj / Jain  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

**Paper Code: Geo C01: Oceanography**

**Section - A**

Oceanography – nature, scope and development, distribution of land and water, Ocean bottom topography, bottom relief of Pacific, Atlantic and Indian Ocean.

**Section - B**

Characteristics of Ocean water: temperature – distribution, salinity – composition, source and distribution, density of sea level. Movement of ocean water: currents - causes and character, currents of Atlantic, Indian and Pacific Ocean; Waves, tides and theories of origin.

**Section - C**

Ocean deposits and coral reefs: sources, types and distribution of ocean deposits, coral reefs –formation, condition of growth, type and theories of origin.

**Recommended Readings:**

- Davis, R.J.A. 1986. Oceanography – An Introduction of the Marine Environment, Win C. Brown, Iowa.  
King, C.A., Oceanography for Geographers, Edward Arnold Pub.  
Murray, S.J., 1913, Ocean, A General account of the Science of the sea, Thorton Butter Worth, London.  
Siddhartha, K. 1999, Oceanography, A Brief Introduction, Kisalaya Pub. Pvt. Ltd., New Delhi..  
Singh, S. 2002, Physical Geography, Prayag Pub., Allahabad.  
Stahler, A. N. Stahler A.M., 1997, Geography and man's Environment, John Wiley and Sons, New York.  
Thurnman, H.V., 1978, Introduction to oceanography, Charles E. Merrill Pub. Co., London.  
Weyl, P.K. 1970, Oceanography an Introduction of the Marine Environment, John Wiley and Sons Ltd., London.

*Pij / Jas*  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

Paper Code: Geo C02: Principles and Applications of Remote Sensing and Geographical Information System

Section A

Remote sensing: definition and scope of remote sensing, elements of remote sensing: electromagnetic radiation and interaction with earth surface features, data products and users, atmospheric windows, remote sensing systems: platforms, sensors, resolution and radiometric characteristics, elements of image interpretation and keys, types of aerial photographs, aerial cameras types of mosaics, relief displacement and parallax, Satellites: Landsat- Mss & Tm, Spot, Noaa-Avhhrr, Irs, Modis, Radarsat, Ikonos, Quickbird & Cartosat.

Section B

Digital image processing and classification: pre-processing and image enhancement techniques- rectification and restoration, contrast manipulation, density slicing, spatial filtering and band ratio, classification- supervised and unsupervised, post-classification analysis and accuracy assessment, microwave remote sensing, advantages over optical, unique capabilities of microwave, SAR & SLAR.

Section C

RS applications: mapping and monitoring of land use and land cover, forestry and desertification, soil and water resources, remote sensing and hazard mapping and environmental monitoring, introduction to GIS, fundamentals of GIS- geospatial databases data structure and formats, projections and coordinate system, raster and vector data infrastructure and analysis, integration of remote sensing and GIS.

Recommended Readings:

- American society of Photogrammetry 1983: Manual of Remote sensing. ASP, Falls Church, V.a.
- Barrett E.C. and L.F. Curtis, 1992: Fundamentals of Remote sensing and Air photo interpretation. Mcmillan, New York.
- Compbell J. 1989: Introduction to Remote Sensing. Guilford, New York.
- Curran, Paul J. 1985: Principles of Remote Sensing. Longman, London.
- दुनियाल, जी.डी. 2004: दूरसन्धेदन तथा भौगोलिक सूचना प्रणाली। सारदा पुस्तक प्रकाश, इलाहाबाद।
- Herd R.M. 1989: Digital Image Processing of Remotely Sensed Data. Academic, New York.
- Lillesand, T., Kiefer, R.W. and Chipman, J. 2007: Remote Sensing and Image Interpretation. John Wiley & Sons, New York.
- Jalan, Seema 2010: Image Processing. Sahityaagar, Jaipur.
- Luder D. 1959: Aerial photography Interpretation: Principles and Application. McGraw Hill, New York.
- Pratt W.K. 1978: Digital Image Processing. John Wiley & Sons, New York.
- Rao D.P.(ed.) 1983: Remote Sensing for Earth Resources. Association of Exploration Geophysicist, Hyderabad.
- Thomas M. Lillesand and Ralph W. Kefer 1994: Remote Sensing and image interpretation. John Wiley & Sons, New York.

Paper Code: Geo D01: Dissertation

52

Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR