



# University of Rajasthan Jaipur

## SYLLABUS

### M.A./M.Sc. GEOGRAPHY

(Annual Scheme)

M.A./M.Sc. (Previous) Examination 2023

M.A./M.Sc. (Final) Examination 2024

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# M.A./M. Sc. Geography (Annual Scheme)

(Regular/Non-Collegiate Candidates)

## SCHEME OF EXAMINATION

|  |                 |           |
|--|-----------------|-----------|
| Each Theory Paper                                    | 3 Hrs. Duration | 100 Marks |
| Dissertation if offered in lieu of an elective paper |                 | 100 Marks |
| Practical  |                 | 100 Marks |

N.B. Non-Collegiate candidate are not eligible to offer dissertation as per provisions of O. 170-A.

1. The number of papers and the maximum marks for each paper/practical shall be shown in the syllabus for the subject concerned. It will be necessary for a candidate to pass in the theory part as well as in practical part (wherever prescribed) of a subject/paper separately. *Each theory paper will have a length of 4 hrs per week*
2. A candidate for passing at each of the Previous and the Final Examination shall be required to obtain:

- (i) Atleast 36% marks in the aggregate of all the papers prescribed for the examination, and
- (ii) Atleast 36% marks in practical(s) wherever prescribed at the examination, provided that if a candidate fails to secure atleast 25% marks in each individual paper at the examination and also in the dissertation/survey report/field work, wherever prescribed, he shall be deemed to have failed at the examination notwithstanding his having obtained the minimum percentage of marks required in the aggregate for that examination. No division will be awarded at the Previous and the Final Examination. Division shall be awarded at the end of the Final Examination on the combined marks obtained at the Previous and the Final Examinations taken together, as noted below:

|                 |     |  |
|-----------------|-----|--|
| First Division  | 60% | } of the aggregate marks taken together of the Previous and the Final Examination. |
| Second Division | 48% |  |

All the rest will be declared to have passed the examination.

3. If a candidate clears any Paper(s) Practical(s)/Dissertation prescribed at the Previous and/or Final Examination after a continuous period of three years, then for the purpose of working out his division the minimum pass marks only viz. 25% (36% in the case of practical) shall be taken into account in respect of such Paper(s)/Practical(s)/Dissertation are cleared after the expiry of the aforesaid period of three years, provided that in case where a candidate requires more than 25% marks in order to reach the minimum aggregate as many marks in out of those actually secured by him will be taken into account as would enable him to make up the deficiency in the requisite minimum aggregate.
4. The Thesis/Dissertation/Survey Report/Field Work shall be type written and submitted in triplicate so as to reach the office of the Registrar atleast 3 weeks before the commencement of the theory examinations. Only such candidates shall be permitted to offer Dissertation/Field Work/Survey Report/Thesis (if provided in the

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scheme of examination) in lieu of a paper as have secured atleast 55% marks in the aggregate of all the papers prescribed for the previous examination in the case of annual scheme I and II semester examination taken together in the case of semester scheme irrespective of the number of papers in which a candidate actually appeared at the examination.

5. The Students are permitted to use simple calculator, Log Table & map stencils in the Examinations if needed.
6. Non-collegiate candidates both in previous and final year are required to attend a practical training camp of forty eight hours at the Department of Geography, University of Rajasthan, Jaipur on payment of fee fixed by the University from time to time. The candidate should contact the Head, Department of Geography, University of Rajasthan, Jaipur for practical caraps immediately after the filling the examination forms. Head, Department of Geography will issue a Certificate to each of the non-collegiate candidate for successful completion of the training camp. The candidate have to submit the Certificate at the time of practical examination.

### M.A./M.SC. Geography

There will be four theory papers and a practical each in Previous and Final Examination. Each of the theory papers will be 100 marks. Each theory paper will be of three hours duration. Candidate will be required to pass both in theory and practicals separately.

#### PREVIOUS

- Paper-I Evolution of Geographical Thought  
Paper-II Physical Basis of Geography  
Paper-III Principles and Theory of Economic Geography  
Paper-IV Any one of the following:  
(a) Advanced Geography of Monsoon Asia  
(b) Geography of Rural Development  
(c) Comparative Geography of U.S.A. and Russia  
(d) Geography of South Asian Countries (Bangladesh, Nepal, Pakistan, Srilanka)  
(e) Advanced Regional Geography of West Europe.  
(f) Man and Natural Environment.  
(g) Quantitative Techniques in Geography.  
Practicals

#### FINAL

- Paper-V Advanced Geography of India  
Paper-VI Any one of the following:  
(a) Population Geography  
(b) Agricultural Geography (Elements & Applied)  
(c) Industrial Geography

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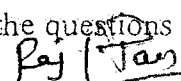
- (d) Transport Geography  
 (e) Geography of Settlements  
 (f) Advanced Geomorphology
- Paper -VII Any one of the following:  
 (a) Urban Geography  
 (b) Geography of Crimes  
 (c) Climatology and Oceanography  
 (d) Applied Geography  
 (e) Pedology  
 (f) Medical-Geography  
 (g) Fundamentals of Remote Sensing and Geographical Information System
- Paper -VIII Any one of the following:  
 (a) Political Geography  
 (b) Cultural Geography  
 (c) Bio-Geography  
 (d) Regional Planning and Development  
 (e) Meteorology  
 (f) Research Methodology  
 (g) Geography of water resources, their management and utilization

**Dissertation:** In lieu of any elective paper of M.A. / M.Sc. Final.

### Practical

#### Instructions for Geography Practical Examination (Both Regular and Non-collegiate)

1. The record work should have 50 sheets (1/6<sup>th</sup> of 20" x 30") and they should cover the total syllabus proportionately. The teacher should revise fresh exercises every time so that the student may not undertake tracing of old exercise. The work must be done in the class rooms and signed on the same date. This would discourage completing the whole work at the nick of the examination emphasis should be laid on ink; and color maps.
2. The Viva-voce Exam. be held to judge the real knowledge of the student and to examine the authenticity of the record work. The marking on the record work and its viva-voce be based on the original work of the candidate and not by merely producing the record work got done by any other agency. Marks be deducted for the syllabus not covered.
3. On an average about 20 students be examined in one batch in M.A. Previous. As far as possible practical exercise be set to judge the practical skill through the Practical exercise.
4. (a) The field Survey by instruments in M.Sc/M.A. Final be given 3 hours alongwith Viva-voce. Each students will have to do exercise on each instrument individually.  
 (b) The practical examination in M.Sc./M.A. (Final) will be conducted in batches of not more then 20 students.
5. The paper for written test in M.A. Final be so set that the questions are not duplicated with field exercise.

  
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6. The External examiner be provided detailed syllabus and detailed instruction before the commencement of examination.

## SYLLABUS

M.A./M.Sc. Previous

Paper- I Evolution of Geographical Thought.

### Section A

Definition, scope, nature, purpose and philosophy of geography, fundamental concepts of geography; ancient Indian geography during Vedic and Puranic periods, ancient classical age: contributions of Greeks (Herodotus and Eratosthenese) and Romans (Strabo and Ptolemy); medieval geography: contributions of Al Biruni, Al Masudi, Idrisi, Ibn-Batutta, Ibn Khaldun, Geography during the period of Renaissance: contributions of Sebastian Munster, Philip Cluverius, Nathanael Carpenter, Varenius, Anton Friedrich Bushing, Immanuel Kant and Conrad Malte Brun.

### Section B

Modern geography: geography in Germany-contributions of Humboldt and Ritter, Richthofen, Ratzel, Hettner and Schluter; geography as a chorological science, geography in France-Blache and Brunhes, geography in Anglo-American- Sauer and Schafer, geography as science of distribution and relationship, geography as chorological science, geography as science of landscape morphology, geography as spatial science and human ecology.

### Section C

Dualism in geography: physical and human geography, systematic and regional geography, environmental determinism and possibilism, qualitative and quantitative, reductionism and holism; quantitative revolution; philosophical pluralism- empiricism, logical positivism, humanistic geography and structuralism. Approaches in geography, behavioural, radical, feministic, Post modern and critical geography; Indian geography: development, problems, perspectives and prospects.

#### Recommended Readings:

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

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

Dickenson, R. E. 1967. The Makers 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).

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

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- जाट, सी. 2013: भौगोलिक चिन्तन का इतिहास। मलिक एण्ड कम्पनी, जयपुर।
- जैन, एस.एम. 2005: भौगोलिक चिन्तन एवं विधि तंत्र। साहित्य भवन पब्लिकेशन्स, आगरा।
- James, P.H.; 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. 5th 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. 2007. Evolution of Geographical Thought. Rawat Publications, Jaipur.
- Peet, Richard 1998: Modern Geographical Thought. Blackwell Publishers, USA.
- सक्सेना, एल.के. व तिवारी, ए.के. 2003, भौगोलिक चिन्तन। राजस्थान हिन्दी ग्रन्थ अकादमी, जयपुर।

## Paper- II: Physical Basis of Geography

### Section A

Meaning, scope and development of physical geography, approaches and recent trends in physical geography, zoning of the earth's interior and thermal state, isostasy, endogenetic and exogenetic forces, mountain building theories (Kober, Jeffreys, Daly, Joly, Holmes) plate tectonics, denudation: erosion and weathering: types and processes, models of landscape evaluation: Davis and Penck.

Erosional and depositional landforms formed by running water, underground, wind, glacial-periglacial; process of desertification, models of slope development (Wood, Davis, Penck, King).

### Section B

Atmosphere: composition and layers, air temperature, heat balance, adiabatic and non-adiabatic processes, stability and instability, evaporation, humidity and condensation, precipitation, world precipitation pattern.

Air pressure variations, pressure belts and planetary wind system; monsoon winds and local winds, air masses and fronts, secondary circulation: cyclones (Tropical and extra tropical) and anticyclones, world climatic classification: Koppen's and Thornthwaite's schemes.

### Section C

Oceanic bottom relief, oceanic deposits, horizontal and vertical distribution of temperature and salinity, oceanic water currents, tides and tidal theories, atolls and coral islands, theories of coral reef formation, marine resources biotic, mineral and energy resources and their utilization.

Soils: genesis, classification and distribution, biodiversity loss and measures for conservation, biotic succession and major biotic regions of the world with special reference to ecological aspects of savannah and monsoon biomes.

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## Recommended Readings:

- 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. Reinholdts, 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.
- जाट, बी.सी. 2013: भौतिक भूगोल। मलिक एण्ड कम्पनी, जयपुर।
- Ollier, C.D. 1979: Weathering. Longman, London.
- Pitty, A.F. 1971: Introduction to Geomorphology. Methuen, London.
- Sparks, B.W. 1960: Geomorphology. Longman, London.
- Sharma, H.S. (ed), 1980: Perspectives in Geomorphology. Concept, New Delhi.
- 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.
- Thornbury, W.D 1960: Principles of Geomorphology. John Wiley, New York.
- Young, A. 1972: Slopes. Longmans, London.

## Paper III: Principles and Theory of Economic Geography

### Section A

Meaning and scope of economic geography, simple model of economy and spatial structure of economy, environmental relations of economy, classification of the economies of the world (primary, secondary and tertiary), theories, concepts and models of development-developed, developing and under developed economies, agricultural typology with special reference to subsistence agriculture, plantation agriculture, Mediterranean agriculture, mixed farming, commercial grain farming, livestock rearing.

### Section B

Energy resources: conventional and non-conventional, spatial patterns and supply problems; manufacturing: factors of production, theories of industrial location: Weber, Hoover, Losch, Isard and Smith, major industries: iron and steel, aluminum, paper and pulp, cotton textile, chemical and fertilizers, world transport patterns: accessibility and connectivity.

### Section C

Decision making process: Location decision-behavioral view, spatial organization of landuse: Central place theory of Christaller Von Thunen's Agriculture location theory, emerging patterns of world trade, barriers to trade, dynamics of blocks, economic development, regional disparities in economic development, economic regionalization for area development and planning-economic regions of India.

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### Recommended Readings:

- Alexander, J.W. 2001. Economic Geography. Prentice Hall of India, New Delhi.
- 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.
- Gupta, P. Sen and Sydasuk, Galyna: Economic Regions and Regionalization in India.
- 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.
- जाट, बी.सी. 2014: आर्थिक भूगोल। पंचशील प्रकाशन, जयपुर।
- Hodder B.W. and Lee, R. 1974: Economic Geography. Methuen, 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.: Economic Geography, Prayag Pustak Bhawan, Allahabad.
- Smith, D. M. 1981. Industrial Location – an economic, geographical analysis. John Wiley, New York.
- Tyagi, B. P. 1998. Agricultural Economics and Rural Development. Jai Praksh Nath & Co., Merrut (sixth edition).
- Wheeler, J.O. and Muller, O.P. 1995: Economic Geography. John Wiley, New York.

### Paper IV Any one of the following:

#### Paper IV (a): Advanced Geography of Monsoon Asia

##### Section A

Unity in Diversity in Monsoon Asia, importance of location, geological structure, physiographic, drainage basins, climate regions, natural vegetation, mineral wealth, population and its characteristics, power resources, agricultural characteristic, importance of Monsoon lands with respect of food stuffs and raw materials, natural rubber lands with respect to good stuffs and raw materials, natural rubber and its world trade, tea, coffee spices, developments of transportation and accessibility.

##### Section B

Singapore-problems of industrial expansion, port developments, human resource, Philippines-population and food problem and development programme, Thailand-problem of urbanization and regional division and development programmes Indonesia-population

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densities and its trends, mineral resources, type of agriculture, sugar industry, Burma-regional divisions, agricultural, forest and mineral resources, Hong Kong-urban growth, changing trade pattern, industrial development, changing land use pattern, Korea-agricultural and industrial development.

### Section C

China state farms and people communes, population and food supply industrialization, changing pattern of industrial complex, Red Basin, the Hwango Ho, Yagize Kiang and Sikiang basins, Japan-Coal resources, water power, conservation of forest, copper production, tea, soyabean and rice culture, fishing industry, motor vehicle steel and industries, industrial belts.

### Recommended Readings :

- Hussain, M. 2004: World Geography. Rawat Publication, Jaipur.
- Johnson, D.L. et al 2012: World Regional Geography: A Development Approach. PHI Learning Pvt. Ltd., New Delhi.
- ममोरिया एवं अग्रवाल 2012: एशिया का भूगोल। साहित्य भवन, आगरा।
- राव, बी.पी. एवं सतपथी, डी.पी. 2002: एशिया की भौगोलिक समीक्षा। वसुन्धरा प्रकाशन, गोरखपुर।
- सतपथी, डी.पी. 1995: चीन की भौगोलिक समीक्षा। वसुन्धरा प्रकाशन, गोरखपुर।
- Shafi, M. 2000: Agricultural Geography of Asia. Macmillan, Delhi.
- सक्सेना, एच.एन. 2010-11: विश्व का प्रादेशिक भूगोल। रस्तोगी पब्लिकेशन्स, मेरठ।
- Tikkha, R.N. 1997: World Regional Geography. New Academic Publishing Company, Jalandhar.
- Wadia, D.N. 1919: Geology of India. Longman, London.

## Paper IV (b): Geography of Rural Development

### Section A

Geography and rural development, agricultural geography and rural development, agricultural location theory, rural land use, agricultural, pastoral, forestry and land use competition, land use and landscape, approaches to rural development, growth center approach, infrastructure reformist, rural settlement, housing, population and employment, rural transport service provision, 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, desertification monitoring and control

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## Section C

Rural development in Rajasthan: major tools and techniques, rural development schemes-Irrigation and land development schemes, drought prone areas schemes, desert development programme, integrated rural development in Rajasthan, tribal areas development, wasteland development.

### Recommended Readings:

- Association of Country Councils 1979: Rural Deprivation, London, ACC.
- Allan, J.A. 1980: Remote Sensing in Land Use Studies, Geography.
- Anderson, J.R.L.J. 1977: Harddarkar-Agricultural decision Analysis, Ames, Iowa State University Press.
- Andrease, B. 1981: Farming Development and Space-World Agricultural Geography, New York, Water Cryter.
- Bowler, I.R. 1948: Agricultural Geography, Progress in Human Geography 8.
- Grigg, D.B. 1974: The Agricultural Systems of the World, Cambridge University Press.
- Grigg, D.B. 1984: An Introduction to Agricultural Geography, London Hutchinson.
- Glig, A.W. 1985: An introduction to Rural Geography, Edward, Arnold, London.
- 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 and Homes (ed.), Oxford, Pergamon.
- Menab. A 1984: Integrated Rural Development, Gloucester Gloucester College of Arts.
- Morgan, W.B. and RJS Munon-Agricultural Geography, London Methuen.
- Newbury, Pa. 1980: Geography of Agriculture, Plymouth Macodonald and Evans.
- Pacione, M. 1981: Rural Geography, London, Pappur Clark, (ed.) and Row 1984-Register of Research in Rural Geography Leicester: Rural Geography Study Group.
- Tewari, A.K. (ed.) 1988: Desertification: Monitoring and Control, Scientific Pubs, Jodhpur.

## Paper IV (c): Comparative Geography of U.S.A. & Russia

### Section A

Strategic importance of location, geological structure, physical features and physiographic division, drainage pattern and river basins, climatic controls and climatic divisions, natural vegetation and vegetation divisions, demographic characteristics.

### Section B

Natural resources-forest, soil mineral, livestock, development of power resources, development of agriculture-agricultural crop regions (Belts).

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## Section C

Important industries, their location and distribution, transportation networks (rail, road, air, water and pipelines).

International trade.

Detailed study of important regions-economic and industrial programmes for future development.

### Recommended Readings:

- Alexander: The North Eastern United States : (D. Van Nostrand Co., New York).  
Barg, L.S.: Natural Regions of U.S.S.R. (Mac. Millian and Co., New York).  
Balzak, S.S.: Economic Geography of Soviet Union (Mac Millian and Co., New York).  
Hait: The South Eastern United Co., N.Y.  
Hodkins: Soviet Power, Energy, Resources, Production and Potentials (Prentice Hall, New York).  
Lames, P.E.: Latin America (Cassel and Co., London).  
Martin, M.C.: The United States at Work (George G. Harrp and Co., New York).  
McCarry, H.H.: Geographic Basis of American Economic Life (Harper and Co., London).  
Mirow, N.T.: Geography of Russia (John Willey and Sons, New York).  
Methn, Vendo: Soviet Economic Development and Structure, Sterling Publisher Pvt. Ltd., AB/9 Safdarganj Enclave, New Delhi.  
Osttolenk, B.: Economic Geography of the United States (Thomas Y. Crowell Co., New York).  
Russel, I.C.: North America (Oxford University Press).  
Robinson, H.: The U.S.S.R. (University Tutorial Press, Ltd.).  
Shaw, E.B.: Anglo-America, A, Regional Geography (John Willey and Co., New York).  
Smith, J.B. and Philip, M.G.: North America: (Harcourt Brace, New York).  
Shabad, T.: Geography of U.S.S.R. (Oxford University Press, Oxford).  
Schwartz, H.: Russia's Social Economy (Prentice Hall of India, Delhi).  
Turin, S.P.: The U.S.S.R. (Mathuen and Co., New York).  
T. Shabad: Industrial Resources of U.S.S.R.  
White, C.L.: Regional Geography of Anglo America (Prentice Hall, New York).

## Paper IV (d): Geography of South Asian Countries (Bangladesh, Nepal, Pakistan, Srilanka)

### Section A

Geographical realms of South Asia, homogeneity and diversity, study of Pakistan under the following heads-geographical and political units, climate and climatic regions, vegetation, agriculture, livestock, mineral resources, power resources, industries, trade population and natural regions, political relations.

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## Section B

Study of Bangladesh under the following heads-geographical and political units, climate and climatic regions, vegetation, agriculture, livestock, mineral resources, industries, trade, population, natural regions, political relations.

## Section C

Study of Nepal, Bhutan, Srilanka and Maldiv Islands under the following heads-geographical and political units, climate, vegetation, agriculture, livestock, industrial and economy, trade, population, political relations.

### Recommended Readings:

- Ahmed, N. 1958: Economic Geography of East Pakistan, Oxford University Press, London.  
Cooke: Ceylon.  
Johnson, B.L.C. 1975: Bangladesh, Heinemann Education Books, London.  
Johnson, B.L.C. 1970: Geography of South Asia.  
Karan, P.P.: The Himalayan, Kingdom.  
Kulshrestha, S.H. 1983: Simple Geography of Nepal, Educational Enterprise Pvt. Ltd., Kathmandu.  
Rashid, R.E. 1977: Geography of Bangladesh, University Press Ltd., Bangladesh.  
Spencer, J.E. 1952: Asia East by South, John Wiley and Sons, London.

## Paper IV (e): Advanced Regional Geography of West Europe

### Section A

Strategic importance of location, geological structure, physical features and physiographic divisions.

Drainage Pattern and river basins, climatic controls and climatic division, natural vegetation, vegetation division, demographic characteristics.

### Section B

Natural resources-forest, soil mineral livestock, development of power resources, development of agriculture - major agricultural crop regions (belts)

### Section C

Important industries: their location and distribution, transportation networks (Rail, road, air, water and pipe lines), international trade, detailed study of important regions-economic and industrial, programmes and plans for future development.

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### Recommended Readings:

- Houston J.M. 1963: Social Geography of Europe, Duckworth.  
वर्मा, एल.एन. 2001: प्रादेशिक भूगोल, राजस्थान हिन्दी ग्रन्थ अकादमी, जयपुर, तृतीय संस्करण  
Husain, M. 2012: world Geography, Rawat Publications, Jaipur  
Tikka, R.N. 1997: World Regional Geography, New Academic Publishing Company, Jalandhar  
अल्ला, एल.आर. व अन्य 1999: प्रादेशिक भूगोल। कुलदीप पब्लिकेशनस, अजमेर  
सक्सेना, एच.एम. 2010-11: विश्व का प्रादेशिक भूगोल। रस्तोगी पब्लिकेशनक, मेरठ।  
Johnson, D.C. et al 2012: World Regional Geography: A Development Approach, PHI Learning Private Limited, New Delhi, Edition

### Paper IV (f): 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.

### Recommended Readings :

- Agarwal, A. and Narain, S. 1997: Dying Wisdom: Rise, Fall and Potential of India's Traditional Water Harvesting System. Centre for Science and Environment, New Delhi.  
Detwyler, J.R. 1975: Man's Impact on Environment. John Wiley and Sons, New York.  
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. Rastriya Barh Ayog (Report-

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- National Commission of Floods. Vol. I & II, New Delhi).
- Govt. of India, 1972: Ministry of Agriculture Report of the Irrigation Commission. Vol. I to IV, New Delhi.
- गुर्जर, आर.के. एवं जाट, बी.सी. 2001: पर्यावरण भूगोल। पंचशील प्रकाशन, जयपुर।
- Gulhati, N.D 1972: Development of Inter-State Rivers: Law and Practice in India. Allied Pub., Bombay.
- Harvey, B. And Hallet, J.D. 1977: Environment and Society: An Introductory Analysis. Macmillan, London.
- 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. Ottawa.
- Matter, J.R., 1984: Water Resources Distribution, Use and Management. John Wiley, Marylane.
- Rao, 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 पब्लिकेशन्स, 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। वसुधरा प्रकाशन, गोरखपुर।
- Tebbutt, T.H.Y. (ed.) 1985: Advances in Water Engineering. Elsevier Applied Science Pub., London.
- Thomas, W.L. (ed) 1956: Man's Role in Changing the Face of the Earth; University of Chicago Press, Chicago.
- 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 IBH, New Delhi,

## Paper IV (g) 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.

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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, analysis of variance (ANOVA)

### Section B

Bivariate analysis: forms of relation and measuring the strength of association and relation-construction and meaning 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 and ANOVA-testing the overall significance of a regression auto correlation-multicollinearity basis principles and elements of factor analysis and principal 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 Thiessen polygons.

### Recommended Readings:

Gupta, S.P. 1979. Statistical Methods. Sultan Chand & Sons, New Delhi, (Twelfth thoroughly revised edition).

Mahmood, A. 1998. Statistical Methods in Geographical Studies. Rajesh Publication, New Delhi (fourth revised edition).

श्रीवास्तव एवं प्रसाद 2008, भूगोल की सांख्यिकी विधियाँ, वसुधरा प्रकाशन, गोरखपुर।

Kailash nath nagar, sankhiki ke mool tatva, 1992, Meenakshi Prakashan, Meerut.

David unwin, Introductory spatial Analysis, Methuen, London, 1981.

Gregory, S. Statistical Methods and Georapner, Longman, London, 1978.

Hammond R and P.S. McCullagh Quantitative Techniques in Geography: An Introduction, Clearendan Press, Oxford, 1974.

John P. Cole and Cuchlanie A.M. King, quantitative Geography, John Wiley, London, 1968.

Johnston R.J., Multivariate Statistical Analysis in Geography, Longman, London, 1973.

Kautsoniannis, Theory of Econometrics, Mcmillan, London, 1973.

Maurice Yeats, An Introduction to Quantitative Analysis in Human Geography, McGraw Hill, New York, 1974.

Peter Haggett, Andrew D. Cliff, & Allan Frey, Location Methods vol I and II, Edward Arnold, London, 1977.

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## Practicals

### Scheme of examination

| Min. Pass Marks: 36          | Non-collegiate candidate | Regular candidates | Max. Marks: 100 |
|------------------------------|--------------------------|--------------------|-----------------|
| Bifurcation of Marks         |                          |                    | Time            |
| Written test                 | 60 (6 questions)         | 40                 | 4 hrs.          |
| Record work and viva voce    | 30+10                    | 20+10              |                 |
| Project report and viva voce | --                       | 20+10              |                 |

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 and science of cartography, history of maps, materials, techniques and preparation of maps, enlargement, reduction and finding of area of maps, use of planimeter, Study of geological maps and preparation of their section and interpretation, interpretation of weather maps and weather forecast.

#### Section B

Map projections (mathematical construction): classification and characteristics of any three from each of the four classes of projections.

##### I. Conical Projections:

1. Equal area with the one standard parallel (Lambert's Projections)
2. Equal Area with two standard parallels (Albert's Projections)
3. Bonne's
4. Polyconic

##### II. Cylindrical Projections:

1. Cylindrical Equal Area
2. Mercator's
3. Gall's Stereographic

##### III. Zenithal Projections:

1. Gnomonic: (a) Polar Case (b) Eq. Case
2. Stereographic: (a) Polar Case (b) Eq. Case
3. Orthographic: (a) Polar Case (b) Eq. Case
4. Equal Area: (a) Polar Case (b) Eq. Case
5. Equidistant: (a) Polar Case (b) Eq. Case

##### IV. Conventional Projections:

1. Sinusoidal
2. Mollweide
3. Interrupted Sanson Flemstead (Homoclosine)

Choice of projections, used for maps produced in India.

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### Section C

Geographical maps and diagrams: computation of data, preparation of frequency tables, representation of data by histograms and ogives, finding skewness, computation of mean, median and mode, deviation-standard deviations and mean deviations, theoretical basis of nearest neighbor analysis, practical exercises of nearest neighbor analysis, location analysis of urban centers, coefficient variation, All these be computed from the Statistical data, preferably based on State, District, Tehsil and community Development Block as unit areas and the following types of maps and diagrams be prepared.

Maps and their interpretations: isopleths, choropleth and chorochromatic; choroschematic and isochronic map, population pyramids map.

Three dimensional diagrams of economic and social data, accessibility and flow maps, <sup>Transport</sup> Network analysis.

Diagrams: Polygraph semi-log and log graphs, trilinear chart, circular graph, climatograph, Hythergraph, climograph, annual water deficiency and water surplus graph.

Project Report: A regular candidate is to prepare project report of a village area. The candidate is free to select any supervisor amongst the staff members of the project. A supervisor can take only 5 candidates, the marking on the project report will be awarded by the external examiner in consultation with the supervisor concerned, the project should be based on primary data obtained by the candidates, the data should be represented by suitable cartographic methods.

N.B. Project Report is not applicable in case of non-collegiate candidates.

#### Recommended Readings:

चौहान, पी.आर. 2005: प्रयोगात्मक भूगोल, वसुधरा 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.

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

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

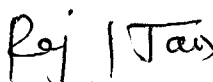
Robinson, A.H. et al. 2004: Elements of Cartography, John Wiley & Sons, Inc., New York (Sixth Edition)

Rampal, K.K. 1993: Mapping and Compilation: Methods and Techniques Concept Publishing Company, New Delhi (Reprint 2009)

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

Singh, R.L. and Singh RPB 1991: Elements of Practical Geography, Kalyani Publishers, New Delhi (Reprint 2002)

तेवारी, आर.सी. एवं सुधाकर, त्रिपाठी 2009: प्रयोगात्मक भूगोल, प्रयाग पुस्तक भवन, इलाहाबाद।

  
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M.A./M.Sc. Final

Paper V: Advanced Geography of India

Section A

Geological structure and its relation to distribution of minerals, physiographic divisions, climate: seasons and associated weather characteristics, mechanism of Indian monsoon, major climatic regions; soils: characteristics, distribution and major soil regions; drainage pattern, watersheds and river systems.

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 and regional economic disparities.

Recommended Readings:

Bansil, B.C. 1975: Agricultural Problems in India, Delhi.

चौहान, बी.एस. व गौतम, ए. 2012-13: भारत: भारतवर्ष का विस्तृत भूगोल। रस्तोगी पब्लिकेशन्स, मेरठ।

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.

इसनैन, रन. 2001: जनजातीय भारत। जवाहर पब्लिशर्स एण्ड डिस्ट्रीब्यूटर्स, नई दिल्ली।

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