Syllabus and Course Scheme
Academic year 2019-20

M.A./M.Sc – Geography

Exam.-2020

UNIVERSITY OF KOTA
MBS Marg, Swami Vivekanand Nagar,
Kota - 324 005, Rajasthan, India
Website: uok.ac.in

A brief note on the Innovation and the Employability -

1. Now a days Geography has become a very useful subject in various competative examinations including Civil Services and Rajasthan Administrative Services.
2. Geography not only deals with the physical, economic and social conditions of the World, India, Rajasthan but now its nature has become applied and it is helpful in solving the environmental and urban problems.
3. Geography provides a background for the regional planning in development and help in sustainable development.
4. The modern techniques of Geographical analysis such as Remote Sensing, GIS, GPS etc. are helpful in Resource and Environmental Management and Disaster Management.
5. Geography provide an opportunity of employment in various fields. The important are :
    a. Teaching and Research ;
    b. Town Planning Departments ;
    c. Regional Planning ;
    d. Remote Sensing ;
    e. Statistical Departments ;
    f. Urban / Rural / Agricultural Planning ;
    g. Water Resource Departments ;
    h. Demographic Study Departments &
    i. Administrative Services – Central and State Governments.

M.A./M.Sc. (GEOGRAPHY)
SCHEME OF EXAMINATION - 2020

Each Theory Paper 3 Hrs. duration Max. Marks:100 marks

Dissertation / Thesis / Survey Report / Field work, if any 100 marks

1. The number of paper 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 the practical part (wherever prescribed) of a subject/Paper separately.

2. A candidate for a pass at each of the Previous and the Final Examination shall be required to obtain (i) at least 36% marks in the aggregate of all the papers prescribed for the examination and (ii) at least 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 work, wherever prescribed. He shall be deemed to have failed at the examination not with standing his having obtained the minimum percentage of marks required in the aggregate for that examination. No division will be awarded at the Previous Examination; Division shall be awarded at the end of the Final Examination on the combined marks obtained at the Previous and the Final Examination taken together, as noted below :
   First Division 60% of the aggregate marks taken together of
   Second Division 48% the Previous and the Final Examination.
   Rest will be declared to have passed the examinations.

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 year, provided that in case where a candidate require more than 25% marks in order to reach the minimum aggregate as many marks out of those actually secured by him will be taken into account as would enable him to make the deficiency in the requisite minimum aggregate.

4. The Thesis/Dissertation/Survey Report : Field Work shall be typed & written and submitted in triplicate so as to reach the office of the Registrar at least 3 weeks before the commencement of the theory examination. Only, such candidates shall be permitted to offer dissertation/Field work/Survey report. Thesis (if provided in the scheme of examination) in lieu of a paper as have secured at least 55% marks in the aggregate of all scheme, irrespective of the number of papers in which a candidate actually appeared at the examination.

N.B. (i) Non-Collegiate candidates are not eligible to offer dissertation as per provision of 0.170-A.

(ii) A Candidate failing in previous examination may be provisionally admitted to the final class, provided that he pass in at least 50% papers, as per provisions of 0.235.

(iii) A candidate may allow grace marks in only one theory paper up to the extent of 1% of the total marks prescribed for the examination.

M.A./M.Sc. GEOGRAPHY- 2020

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

Note : A weekly seminar is to be arranged for M.A. Previous and Final Students.

M.A. / M.Sc. (Previous) Geography

Paper-I - Evolution of Geographical Thought
Paper-II - Advanced Physical Geography
Paper-III - Principles and Theory of Economic Geography
Paper-IV - (a) Geography of Environment, or
(b) Quantitative Techniques in Geography

Practical :

Distribution of marks will be as follows:

1.	Laboratory and Map work test (4 hours duration)	40 marks
2.	Record Work	25 marks
3.	Viva-Voce	10 marks
4.	Project Report & Viva-Voce (20+05)	25 marks
	Total	**100 marks**

N.B. : 12 hours of teaching practical be provided per batch of 10 students per week.

M.A. / M.Sc. (Final) Geography

Paper-V - Advanced Geography of India
Paper-VI - Any one of the following -
(a) Agricultural Geography
(b) Industrial Geography
(c) Geography of Transport and Marketing
Paper-VII - Any one of the following -
(a) Urban Geography

(b) Population and Settlement Geography
(c) Bio-Geography

Paper-VIII - Any one of the following -
(a) Political Geography
(b) Research Methodology
(c) Regional Planning and Development
(d) Remote Sensing and GIS

Dissertation in lieu of VI or VII or VIII papers.

Practical :

The distribution of marks in the Practical will be as follows:

1.	Laboratory work of three hours duration	40 marks
2.	Record work and Viva-Voce (15+05)	20 marks
3.	Field Surveying and Viva-Voce (15+05)	20 marks
4.	Survey Camp Report and Viva-Voce (15+05)	20 marks
	Total	**100 marks**

N.B. : 12 hours of teaching practical be provided per batch of 10 students per week.

Instruction for Geography Practical Examination:

1. The record work should have 50 sheets ($1/6^{th}$ of 20"×30") and they should cover the total syllabus proportionately. The teacher should give fresh exercise every time so that the students may not undertake tracing of old exercise. The work must be done in the class room and signed on the same date. This would discourage completing the whole work at the nick of the examination.
2. Viva-Voce Examination be held to judge the real knowledge of the students and to examine the authenticity of the record work. The marking on record work and its Viva-Voce be based on the original work of the candidate and not merely producing the record work get done by any other agency. Marks be deducted for the part of the syllabus not covered.
3. On an average about 20 students be examined in one day. In M.A. Previous as far as possible in one practical exercise be set to judge the practical skill.
4. The External Examiners, be provided syllabus and detailed instructions at the time of obtaining his consent. For M.A./M.Sc. Final a minimum of two days be fixed to conduct the examination.

Note : A copy of the instructions be sent to the examiners for their information.

M.A. / M.Sc. (Prev.)-2020
Paper – I Evolution of Geographical Thought

Duration : 3 hours Max. Marks – 100

Note : The question paper will contain three sections as under –

Section-A : One compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. Total marks : 10

Section-B : 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. Total marks : 50

Section-C : 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type, answer in about 500 words, 2 questions to be attempted. Total marks : 40

UNIT – I

Definitions, scope, nature and purpose of Geography (including concepts) and its relation with other social sciences. Post War trends, Inter-disciplinary Trends, Recent trends in Geography. Development of Geography in India.

UNIT – II

Pre-Scientific Geographical ideas in Ancient and Medieval times : Indian influences. Geography of the Vedic Age and Geography of the Purana's (First four chapters of Geography of Purana's by S.M. Ali).

UNIT – III

Contribution by Greek, Roman and Arab Geographers (Al-Baruni and Ibn-I-Batuta). The Emergence of scientific Geography in the 18^{th} and 19^{th} centuries.

UNIT – IV

Founders of modern Geography-Humboldt, Ritter, Leaders of the first generation after Ratzel, Richthofen, Hettner, Contribution of Vidal-de-la-Blache and Brunhes.

UNIT – V

Dichotomies in Geography : Physical and Human Geography, Determinism and Possibilism, Regional and Systematic Geography, Qualitative and Quantitative Geography. Theoretical and Applied Geography, Analytical and Synthetical Geography, Positivism, Functionalism, Idealism and Realism in Geography.

Books Recommended :

1. Minshull, Roger : The Changing Nature of Geography.
2. Hartshorne, Richard : Perspectives on the Nature of Geography. The Association of American Geographers, Hutchinson University Library, London.
3. Dikshit, R.D. : Geographical Thought A Contextual History of Ideas, Prentice Hall of India Pvt. Ltd.
4. Wooldridge & East : The Spirit and Purpose of Geography, Hutchinson University Library, London.
5. Dikshit, R.D. : The Arts Science of Geography, Integrated Readings. Prentice Hall of India, New Delhi, 1994.
6. Saxena, D.P. : Regional Geography of Vedic India, Granthan Rambag, Kanpur.
7. Harvey & Holly : Themes in Geographic Thought, Rawat Publications, Jaipur.
8. Husain, Majid : Evolution of Geographical Thought, Rawat Publications, Jaipur.

9 Haggett, P. – Geography : A Modern Synthesis, Harper International Ed.

10. हुसैन, माजिद : भौगोलिक विचारधाराओं का इतिहास, रावत पब्लिकेशन्स, जयपुर।
11. कौशिक, एस.डी. : भौगोलिक विचारधारायें एवं विधि तंत्र।
12. जैन, एस.एम. : भौगोलिक चिन्तन व विधि तंत्र, साहित्य भवन, आ गरा।

Paper – II Advanced Physical Geography

Duration : 3 hours Max. Marks – 100

Note : The question paper will contain three sections as under –

Section-A : One compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. Total marks : 10

Section-B : 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. Total marks : 50

Section-C : 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type, answer in about 500 words, 2 questions to be attempted. Total marks : 40

UNIT – I

Geomorphology: Fundamental concepts; Factors controlling landform development; Endogenetic and Exogenetic forces; Denudation process:Weathering and Erosion. Geosynclines; Mountain Building; Continental Drift and Plate Tectonics.

UNIT – II

Concept of Geomorphic Cycle ; Landforms associated with fluvial, glacial, arid, coastal and Karst topography. Slope-forms and processes; Environmental and Applied Geomorphology.

UNIT – III

Climatology : Composition and Structure of the Atmosphere; Insolation; Heat budget of the earth; Distribution of temperature; Atmospheric pressure and general circulation of winds; Monsoons and jet streams.

UNIT – IV

Stability and instability of the atmosphere; Air-masses; Fronts; Temperate and Tropical cyclones; Types and distribution of precipitation; Classification of world climates: Kopen's and Thornthwaite's schemes; Hydrological Cycle; Climate change and Global warming.

UNIT – V

Oceanography : Origin of ocean basins; Ocean Bottom relief of Indian, Atlantic and Pacific Oceans; Ocean deposits; Coral reefs; Temperature and Salinity of the Oceans; Density of sea water; Tides and ocean currents; Sea – level changes; Ocean's Mineral wealth.

Books Recommended :

1. Ahmad, E.: Coastal Geomorphology of India, New Delhi.
2. Wooldridge & Morgan : An Introduction to Geomorphology, Longmans, Green and Co., London.
3. Steers, J.A. : Unstable Earth, Methuen & Co., London.
4. Strahler, A.N. : Earth Sciences, Harper and Row Publishers, New York.
5. Strahler, A.N.: Modern Physical Geography, John Willey and Sons Inc., New York.
6. Dayal, P. : A Text Book of Geomorphology.
7. Kale, V.S. & Gupta, A. : Elements of Geomorphology.
8. Khan, M.Z.A.& Gangawala Sonal : Global Climate Change, Rawat Publications, Jaipur, 2011.
9. Singh, S. : Geomorphology, Prayag Publication, Allahabad, 1998.
10. Thornbury, A.K. : Gemorphology, Prentice Hall, New York.
11. Lobeck, A.K. : Gemorphology, McGraw Hill Book Co., New York.
12. King & Embleton : Glacial and Pre Glacial Geomorphology, Amold.
13. Cotton, C.A. : Geomorphology, John Willey & Sons, New York.
14. Jeffreys, H. : The Earth-Its Origin, History and Physical Constitution.
15. Sharma, H.S. (Ed.) : Perceptives in Geomorphology, Concept Publishers, New Delhi.
16. सविन्द्र सिंह : भू-आकृति विज्ञान, वसुन्धरा प्रकाशन, गोरखपुर।
17. कौशिक, एस.डी. : भू- आकृति विज्ञान, रस्तोगी प्रकाशन, मेरठ।

18. नेगी, एस.डी., : भू-आकृति विज्ञान, रस्तोगी प्रकाशन, मेरठ।
19. Barry, R.G. & Chorley, P.J. : Atmosphere, Weather and Climate, Routledge, London and New York, 1998.
20. Crichfield, J.H. : General Climatology, Prentice Hall, India, New Delhi, 1993.
21. Das, P.K. : Monsoons, National Book Trust, New Delhi, 1987.
22. Lal, D.S. : Climatology, Chaitanya Publications, Allahabad, 1986.
23. Robinson, P.J. & Henderson, S. : Contemporary Climatology, Henlow, 1999.
24. Thompson, R.D. & Perry, A. (Ed.) : Applied Climatology – Principles and Practice, Routledge, London, 1997.
25. Khan, M.Z.A. & Gangwala Sonal: Global Climate Change, Rawat publications, Jaipur, 2011.
26. Davis, Richard J.A. : Oceanography : An Introduction to the Marine Environment, Wm. C. Crown Lowa, 1996.
27. Duxbury, C.A. & Buxbury, B. : An Introduction to the World's Oceans, C. Brownlowa, 2nd Ed. 1996.
28. Garrison, T. : Oceanography – An Introduction to Marine Science, Books/Cole Pacific Grove, USA, 2001.
29. Sharma, R.C. : Oceanography for Geographers, Rajesh, New Delhi, 1985
30. Ummerkutty, A.N.P. : Science of the Oceans and Human Life, NBT, New Delhi, 1985.

Paper – III Principles and Theory of Economic Geography

Duration : 3 hours Max. Marks – 100

Note : The question paper will contain three sections as under –

Section-A : One compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. Total marks : 10

Section-B : 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. Total marks : 50

Section-C : 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type, answer in about 500 words, 2 questions to be attempted. Total marks : 40

UNIT – I

Nature, Scope and Methods of Economic Geography, Concept of Economy, Simple model of economy, Impact of modern economy on environment. Spatial structure of economy.

UNIT – II

Types of Agriculture – Subsistence agriculture, Tropical plantation, Mediterranean agriculture, Mixed farming, Stock raising and its products.

Energy Resources of the world – Coal, Petroleum, Hydroelectricity and Atomic power. Energy Crisis, Non-conventional Sources of Energy.

UNIT - III

Locational analysis and spatial distribution of Iron and Steel, Cotton textile, Chemical, Paper and pulp industries. Development of marketing systems in the world and WTO.

UNIT – IV

Location and interaction in a simplified economic landscape. Spatial variation in transport cost. Spatial variation in production cost. Demand scale and agglomeration.

UNIT – V

Decision making process – a behavioural approach. Concept of economic region- formation and types. Economic regions of World and World Trade Route India.

Books Recommended:

1. Lloyd & Dicken : Location in Space : Theoretical Approach to Economic Geography.
2. Mc-Cart & Lindeberg : A Preface to Economic Geography.

3. Smith, D.E. : Industrial Location – An Economic Geographical Analysis.
4. Hodder & Lee : Economic Geography.
5. Berry Conkling & Ray : The Geography of Economic Systems, Prentice Hall.
6. Smith, J.C. & Philip, M.O. : Industrial and Commercial Geography, Henry Halt.
7. Bengston, N.A. & Royen M.V. : Fundamentals of Economic Geography, Prentice Hall, New York.
8. Alexander, J.W. : Economic Geography, Prentice Hall, New York.
9. Guha & Chatterjee : A New Approach to Economic Geography.
10. Renner, T.H. & Other : World Economic Geography.
11. Robinson, H. : Economic Geography, M.Sc. Donald, London.
12. Thoman, R.S. : The Geography of Economic Activity, McGraw Hill, New York.
13. Zimmerman E.W. : World Resources and Industries, Harper and Co., New York.
14. Robertson, D. (Ed.) : Globalization and Environment, E. Elgan Co., U.K., 2001.
15. Wheeler, J.O. : Economic Geography, John Willey, New York, 1995.
16. Dreze, J. & Sen, A. : India – Economic Development and Social Opportunity, Oxford University Press, New Delhi, 1996.
17. काशीनाथ सिंह, जगदीश सिंह : आर्थिक भूगोल के मूल तत्व, वसुन्धरा, गोरखपुर।
18. पुरूषोतम जैन : आर्थिक भूगोल, रस्तोगी प्रकाशन, मेरठ।
19. सक्सेना, अग्रवाल एवं सक्सेना : आर्थिक भूगोल, राजस्थान हिन्दी ग्रंथ अकादमी, जयपुर–2010 ।

Paper – IV(a) Geography of Environment

Duration : 3 hours Max. Marks – 100

Note : The question paper will contain three sections as under –

Section-A : One compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. Total marks : 10

Section-B : 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. Total marks : 50

Section-C : 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type, answer in about 500 words, 2 questions to be attempted. Total marks : 40

UNIT – I

Concept of environment and ecology, Nature and scope of the Geography of environment. Concept of ecology and eco-system-definition and elements, energy flow in eco-system.

UNIT – II

Productivity in eco-system. Eco-cycles. Types of eco-system. Man-environment relationships, perception of environment and its quality. Degradation of Environment, Development vis-a-vis ecological crisis. Global Environmental Issues : Climate Change - Ozone depletion, Green House Effect and Global Warming, Desertification, Biodiversity.

UNIT – III

Environmental Pollution – Water, Air, Noise, Soil and Radio-activity, causes, impact and measures of control with Indian examples. Population, Resources and Ecological crisis.

UNIT – IV

Environment and quality of life. Environmental Management–Approaches, Management of forest, soil, wildlife, energy and mineral resources, Disasters & their management. Environmental Impact Assessment. Conservation of natural resources.

UNIT – V

Sustainable development. Environmental policies and programmes (international and national). Environmental problems, planning and legislation in India.

Books Recommended :

1. Batel, B. (Ed.) – Management of Environment, Wiby Eastern Ltd., New Delhi, 1980.

2. Desh Bandhu (Ed.) – Environmental Management, Indian Environment, Society, New Delhi.
3. Singh & Singh (Ed.) – Geography of Environment, Concept, New Delhi.
4. Saxena, H.M. – Environmental Geography, Rawat Pub., Jaipur, 2005.
5. Savinder Singh – Geography of Environment, Allahabad.
6 Murdock, W. (Ed.)- Environment Resources, Pollution and Society, Sin over Association Inc.
7. Gupta & Gurjar - Sustainable Development, Rawat Pub., Jaipur.
8. Khan, M.Z.A. & Gangwala Sonal : Global Climate Change, Rawat Publications, Jaipur, 2011.
9. Strahler, A.N. – Geography and Man's Environment, John, Willey.
10. Khan, M.Z.A. & S.K. Agarwal – Environmental Geography, APH Publishing House, New Delhi, 2004.
11. Sharma B.L. & Puja Puar : Global Environmental Challenges, Rohini Books, Jaipur.
12. Saxena H.M. & M.Z.A. Khan: Urbanization, Environmental Degradation and Quality of Life, Rawat Publications, Jaipur, 2016.
13. Centre for Science – The State of Indian Environment: A Citizen's Report 1982, Environment 1985, New Delhi.
14. सविन्द्र सिंह - पर्यावरण भूगोल, इलाहाबाद ।
15. वी.के. श्रीवास्तव : पर्यावरणीय भूगोल एवं पारिस्थितिकी विकास, वसुन्धरा, गोरखपुर।
16. एच.एम. सक्सैना - पर्यावरण एवं परिस्थितिकी भूगोल, राज. हिन्दी ग्रन्थ अकादमी, जयपुर।

Paper – IV(b) Quantitative Techniques in Geography

Duration : 3 hours Max. Marks – 100

Note : The question paper will contain three sections as under –

Section-A : One compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. Total marks : 10

Section-B : 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. Total marks : 50

Section-C : 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type, answer in about 500 words, 2 questions to be attempted. Total marks : 40

UNIT – I

Statistical data, various types of average, measures of dispersion and their calculation. Normal Frequency distribution curve and its uses. Binomial and Poison Distribution, Frequency Distributions.

UNIT – II

Measures of spatial distribution point and line distribution. Nearest Neighbour Index and spatial randomness. Characteristics of samples. Methods of Sampling.

UNIT – III

Statistical significance, Diagrams, Standard error of difference, Students test and Senedor's variance Ratio Test. Models as Quantitative techniques - Simulation Model, The Gravity Model.

UNIT – IV

Measurement of Connectivity and accessibility. Product moment correlation coefficient. Spearman's rank correlation coefficient. Kendal's correlation Coefficient.

UNIT – V

The correlation matrix. Regression line and confidence limits. The Chi-square Test and its uses. Fluctuations and trends. Logarithmic graph.

Books Recommended :

1. Bunge, W. – Theoretical Geography and Studies in Geography, Ser. C. General and Mathematical Geography No.1 Department of Geography, University of Lund, C.W.K. Gleerup ; Lund, 1973

2. Cole, J.P. & King, C.A.M. – Quantitative Geography, Willey, 1968.
3. Dalton, R. & Other - Correlation Techniques in Geography, George Philip & Sons Ltd., London, 1972.
4. Dalton, R. & Others - Sampling Techniques in Geography, George Philip & Sons Ltd. London, 1975.
5. Duncan, O.D. – Statistical Geography – Problems in Analysing Areal Data, 1961.
6 Elhance, D.N. – Fundamentals of Statistics, Kitab Mahal, Allahabad, 1962.
7. Fesguon, R. – Linear Regression in Geography, CATMOG 15, Geo Abstracts, University of East Angila, Norwhich, U.K., 1978.
8. Kellerman, A. – Centrographic Measures in Geography, CATMOG, 32, Ge Abstracts, University of East Angile, 1981.
9. Gregory, S. – Statistical Methods and the Geographer, Longman, London, 1978.
10. King, L.J. – Statistical Analysis in Geography, Prentice Hall, 1960.
11. Monkhouse, F.J. & Wiklinson, H.R. – Maps and Diagrams, B.I. Publication, Bombay.
12. Toyne, P. & Peter – Techniques in Human Geography, Mc-Millan, London, 1976.
13. Yeates, M. – An Instruction to Quantitative Analysis in Human Geography, McGraw-Hill Book, Company, New York, 1974.
14. Mohammed, A. – Statistical Methods in Geography, Rajesh Publication, New Delhi, 1977.
15. David Ebon – Statistics in Geography – A Practical Approach.
16. शर्मा, पी.एम. - सांख्यिकी भूगोल, राजस्थान हिंदी ग्रंथ अकादमी, जयपुर

PRACTICAL

Distribution of marks will be as follows –

1.	Laboratory and Map work test (4 hrs. duration)	40 marks
2.	Record Work	25 marks
3.	Viva – voce	10 marks
4.	Project Report and viva – voce (20+5)	25 marks

Note : 12 hrs. of teaching practical be provided per batch of 10 students per week.

Laboratory and Map work –

1. The Art and Science of Cartography, History of Maps, Materials, Techniques and Preparation of Maps.
2. Enlargement, Reduction and finding Area of Maps. Use of Planimeter.
3. Interpretation of Weather Maps and Weather Forecast.
4. **Map Projection.**

Projection and their classification –

Construction and characteristics of projections (Mathematical constructions)

(I) Conical Projections :
- (a) Equal Area with one Standard Parallel (Lambert's Projection)
- (b) Equal Area with two Standard Parallel (Albert's Projection)
- (c) Bonne's
- (d) Polyconic
- (e) International

(II) Cylindrical Projections :
- (a) Cylindrical Equal Area
- (b) Mercator's
- (c) Gall's stereographic

(III) Zenithal Projection's

(a)	Gnomonic	1. Polar Case	2. Eq-case
(b)	Stereographic	1. Polar Case	2. Eq-case
(c)	Orthographic	1. Polar Case	2. Eq-case
(d)	Equal Area	1. Polar Case	2. Eq-case
(e)	Equidistant	1. Polar Case	2. Eq-case

(IV) Conventional Projections :
- (a) Sinusoidal
- (b) Mollweide
- (c) Interrupted Molleweide and Godde's
- (d) Interrupt Sanson Flamsteed (Homelosine)

Choice of Projections : Projections used for maps produced in India.

5. Geographical Maps/Diagrams :

(i) Computation of data, preparation of frequency tables, representation of histograms and Ogives. Finding Skewness, computation of Mean. Median and Mode. Deviations : Standard Deviation and Mean Deviation. Correlation. Theoretical Basis of Nearest Neighbour Analysis-Practical exercise on nearest Neighbour Analysis. Network Analysis. Locational Analysis of urban centers. Coefficient of Variation. (All these be computed from the Statistical Data, preferably based on District or Tehsil unit areas)

(ii) The following types of maps and diagrams be prepared.

One exercise on each of the following and their interpretations-Isopleths, Choropleth, Chorochromatic, Isochrones and Population Potential Surface maps. Population Pyramid, Sten-de-Geers and Stilgen-Baurs-Method.

Three dimensional diagrams of economic and social data, Block Pile, Sphere, Pyramid, Graphs, Polygraph, Semilog and log-graphs, Trilinear chart, Circular graph, Climatograph, Hythergraph, Taylor's/Foster's Climograph, annual water deficiency and water surplus graph.

6. Project Report : Attendance in camps compulsory. Report should be prepared for a topic related to any regional problem. A group of eight students be constituted for each problem and a report should be prepared in typed form within 20 to 25 pages with the help of maps and diagrams.

Books Recommended :

1. Robinson, A.H. etal – Elements of Geography, John Willey and Sons, U.S.A. 1995.
2. Sarkar, A.K. – Practical Geography – A Systematic Approach, Oriental Longman, Calcutta, 1997.
3. Khan, Z.A. – Text Book of Practical Geography, Concept, New Delhi, 1998.
4. Monkhouse, E.J. & Wilkinson, H.R. – Maps and Diagrams, Methuen, London, 1994.
5. Singh, R.L. – Elements of Practical Geography, Kalyani Pub., New Delhi.
6. Steer, J.A. – Map Projections; University of London Press, London.
7. Lawrence, G.R.P. - Cartographic Methods, London, 1971.
8. Dickinson, G.C. – Statistical Mapping of Statistics, London.
9. जे.पी. शर्मा - प्रयोगात्मक भूगोल, रस्तोगी, मेरठ।
10. इन्द्रपाल एवं माथुर - मानचित्र प्रक्षेप, राज. हिन्दी ग्रन्थ अकादमी, जयपुर।

M.A. / M.Sc. (Final)- 2020
Paper V- Advanced Geography of India

Duration - 3 hours Max. Marks - 100

Note : The question paper will contain three sections as under –

Section-A : One compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. Total marks : 10

Section-B : 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. Total marks : 50

Section-C : 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type, answer in about 500 words, 2 questions to be attempted. Total marks : 40

Unit - I

Physiographic and Drainage systems. Soils, Vegetation, Origin and Mechanism of Indian Monsoon. Schemes of Natural Physiographic and Climate Classifications. Identification of Drought and Flood Prone Areas.

Unit -II

Tribal areas and their problems, Population Growth, Distribution, Density, Sex Ratio and Literacy, Population problems and policies. Urbanization in India.

Unit -III

Resources: conservation and utilization of land, mineral, water, biotic and marine resources. Agricultural land use pattern, Green revolution and its impact on Indian Agriculture. Agriculture infrastructure - Irrigation, Fertilizers and Seeds, Dry zone Agriculture. Agro-Climatic Regions of India.

Unit -IV

Industry - factors of localization, classification and detailed study of the following-Iron and Steel, Cement, Fertilizer, Paper and Pulp and Sugar Industries. Study of the Network of Road, Railways, Airways and Water ways. Regional disparities in development in India.

Unit -V

Geographical study of Rajasthan under the following heads: Relief, Climate, Vegetation, Soils, Agricultural development, Irrigation, Mineral and Power resources, Industrial development, Detailed study of the following regions -

1. Marusthali 2. Aravali 3. Eastern Plain 4. Hadoti Plateau

Books Recommended :

1.	Govt. of India	:	Five Year Plans of India.
2.	Sharma & Coutinho	:	Economic and Commercial Geography of India, Vikas, Delhi.
3.	Singh, R.L.	:	India: A Regional Geography, N.G.S.I., Varanasi, 1971.
4.	Galyna & Sen Gupta	:	Economic Regions and Regionalisation in India, 1968.
5.	Choudhary, M.R.	:	Indian Industries: Development and Location.
6.	Spate, O.H.K.	:	India and Pakistan, Methuen & Co., London.
7.	Krishna, M.S.	:	Geology of India and Burma,Law Journal Office, Madras.
8.	Kumar, L.S.S. & Others	:	Agriculture in India, Vol. 1 & II, Asia Publishing House, Bombay

9. Indian Year Book, Latest Edition: Publication Division, Delhi.
10. Chatterji, S.B . : Climatology of India, Calcutta University, Calcutta.
11. Sharma, T.R. : Location of Industries of India, Hindi Kitab, Bombay.
12. Gazetteers of India : Publication Division, New Delhi.
13. S.P. Roy Choudhary : Land and Soil, National Book Trust, New Delhi.
14. Sinha : A Treaties on Industrial Minerals.
15. निगम, एम. एन. : राजस्थान का भूगोल, राज. हिन्दी ग्रन्थ अकादमी, जयपुर।
16. भल्ला, एल.आर. : राजस्थान का भूगोल, कुलदीप प्रकाशन, जयपुर।
17. सक्सेना, एच.एम. : राजस्थान का भूगोल, राज. हिन्दी ग्रन्थ अकादमी, जयपुर।

Paper VI (a) - Agricultural Geography

Duration - 3 hours Max. Marks - 100

Note : The question paper will contain three sections as under –

Section-A : One compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. Total marks : 10

Section-B : 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. Total marks : 50

Section-C : 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type, answer in about 500 words, 2 questions to be attempted. Total marks : 40

Unit -I

Agriculture - Concept, origin, dispersal and Development of agriculture through the ages in important agricultural areas of the world.

Development of Agricultural Geography with special reference to India.

Factors affecting Agriculture: Physical - relief, climate, soil, water, storage etc.

Social **-** land ownership, land tenure and size of holdings.

Economic - Input of human and animal power, irrigation and fertilizers, Mechanization etc

Others - Financial management, Market system, Transport, Trade etc.

Unit -II

Water **-** Water resources, quality of water for irrigation, water quality criteria, various methods of irrigation and their comparative advantages. Soil and water balance.

Types of Agriculture - Shifting cultivation, Plantation agriculture, Mediterranean type,

Collective and state farming, Extensive and Intensive agriculture, Dry farming and their characteristics.

Unit -III

Agricultural Land Use: Concept, history, principles, objectives, policies and planning of land use surveys. Land Classification : need and basis of land classification - British pattern, American pattern, Indian pattern.

Land Use Data : Sources, types, mapping and problems.

Unit -IV

Models in Agricultural Land Use **:** concept, need and principles. Von Thunen's Agricultural Location Theory. Preparation and planning of detailed performa for land use surveys.

Measurements of the Levels of Agricultural Development : Concept and methodology - Agricultural regionalization -Concept, methods of delimitation (Including statistical methods). Agricultural Regions of the World (Whittlsey).

Unit -V

Crop ranking, Crop combination regions - meaning and methodology (Detailed study of Kendal's, Weaver's, Doi's and Prof. S.M. Rafi Ullah's method). Cropping intensity, Crop diversification - methods and deductions. Agricultural efficiency -concept, methods of measurement. Nutrition and balance sheet. Crop-land use and deficiency diseases.

Books Recommended :

1. I.C.A.R. - Soil and Water Conservation Research (1956-71).
2. I.C.A.R. - Soil Conservation in India.
3. Sachchidananda- Social Dimensions of Agricultural Development, National Publishing House, Delhi.
4. Noor Mohammed- New Dimensions in Agriculture, Concept, New Delhi, 1991.
5. Stamp, L.D. - Land of Britain - Its Use and Misuse.
6. Kostowicki - World Types of Agriculture, Polish Academy, Warsow.
7. Shafi,M. - Land Use in Eastern U.P., Aligarh University Press.
8. Misra,V.C., Ayyar, N.P. Kumar -Applied Geography, Ali Memorial Number, University Press, Agra.
9. Singh, J. - An Agricultural Atlas of India :A Geographical Analysis, Vishal Publications, Kurukshetra.
10. Singh, J. - An Agricultural Geography of Haryana, Vishal Publications, Kurukshetra.
11. Singh, J & Dhillon, S.S.- Agricultural Geography, Tata McGraw Hill, New Delhi.
12. Noor Mohammed - Agriculture Land Use in India, Inter-India Publication, Delhi.
13. Ali Mohammed - Situation of Agriculture, Food and Nutrition in action Rural India, Concept Publishing, Delhi.
14. Ali Mohammed- Dynamics of Agriculture Development in India, Concept Publication Co., Delhi.
15. Symon, Leslie- Agricultural Geography, G.Bell & Sons Ltd., London, 1967.
16. Singh, R.L. (ed.)- Applied Geography, B.H.U. Press, Varanasi.
17. Kostrowicki- Agricultural Typology ; Polish Academy, Warsow.
18. प्रमिला कुमार– कृषि भूगोल, मध्य प्रदेश हिन्दी ग्रन्थ अकादमी।
19. ब्रज भूषण सिंह– कृषि भूगोल, गोरखपुर।

Paper VI (b) - Industrial Geography

Duration - 3 hours Max. Marks - 100

Note : The question paper will contain three sections as under –

Section-A : One compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. Total marks : 10

Section-B : 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. Total marks : 50

Section-C : 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type, answer in about 500 words, 2 questions to be attempted. Total marks : 40

Unit - I

Location factors in manufacturing, concept of optimum location. The Least Cost School and the Transport Cost School. The Market Areas School. The Marginal Location School. The Behavioral School.

Unit - II

The Reduction of weight of Materials. The Copper Industry. The Aluminum industry. The Pulp and paper industry. The Cement Industry. New Trends in Industrial Geography. Testing Location Theory, Empirical Studies. Significance of Enterprise and Firm.

Unit - III

Important Industrial regions of the World : select one each of U.S.A. and Federation of Independent states - Japan, Britain and West Europe. Important Industrial Regions of India. The Changing character of geographical concentration and impact of technological change, changing character of Industrial regions. Formation of Industrial Regions.

Unit - IV

Study of the following regions.

1. The Hooghlyside Industrial Regions.
2. The Damodar Valley Industrial Region
3. The Ruhr Basin Industrial Region
4. The Great Lakes Industrial Region.

Unit-V

Influence of power and Geographical Inertia in Manufacturing Industries.

The Textile Industry. Multi-locational Industries-Iron and Steel, Aluminium, Oil Refining.

Market Oriented Industries-Furniture, Textile Machinery. Footloose Industries-Automobile, Commercial Ship Building, Raw Material oriented Industries. The Locational importance of reduction in materials.

Books Recommended :

1. Llyod & Dicken : Location in Space : A Theoretical Approach to Economic Geography.
2. M.C. Cart & Limberg Hodder & Lec : Economic Geography.
3. Smith, D.E. Cox & K.P. Man : Industrial Location, A Economic Geographic Analysis, Location and Behaviour - An Introduction to Human Geography.
4. Riley, R.C. - Industrial Geography, Chalto & Windus, London, 1973.
5. Alexander, J.W.- Economic Geography, Prentice Hall, New Delhi.
6. Boesh - A Geography of World Economy.
7. Estall, R.C. & Buchanan, R.O. - Industrial Activity & Economic Geography, Hutchinson Co., London.
8. Hoover, E.M. - The Location of Economic Activity, McGraw Hill Books Co., New –York.

9. Chodhary, M.R. -Industrial Geography of India
10. शर्मा, बी.एल. – सैद्धातिक औद्योगिक भूगोल, रोहिणी प्रकाशन, जयपुर।
11. राजमल लोढ़ा – औद्योगिक भूगोल, राजस्थान हिन्दी ग्रन्थ अकादमी।

Paper VI(c) - Geography of Transport and Marketing

Duration - 3 hours Max. Marks - 100

Note : The question paper will contain three sections as under –

Section-A : One compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. Total marks : 10

Section-B : 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. Total marks : 50

Section-C : 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type, answer in about 500 words, 2 questions to be attempted. Total marks : 40

Unit - I

Nature and Scope of Transport Geography, Transport as controller of economic activity, Models of transport development. Net work Analysis, measurement of accessibility and Connectivity.

Unit -II

Nature and Scope of Marketing Geography, Growth of Market centres in various parts of the world including India.

Unit - III

Types of Markets, Regulated markets, Periodic Markets - Nature, Distribution, Commodity Structure and Social Importance.

Unit - IV

Market Morphology, Market Sphere of Influence, Agricultural Marketing,

Unit - V

Behavioral Pattern of market place participants, Cartographic representation of Transport and marketing data.

Books Recommended:

1. Berry, B.J.L. : Geography of Market Centres & Retail Distribution, Prentice Hall, 1967.
2. Chorley, R.J. & Haggett, P.(ed.): Network Analysis in Geography, Arnold, 1969.
3. Garnier, B.J. & Delobez, A. : Geography of Marketing, Longman, London, 1995.
4. Hurst, E. : Transport Geography - Comments & Reading, McGraw Hill, 1974.
5. Scott, P.: Geography and Retailing, Hutchinson, London.
6. Saxena, H.M. : Marketing Geography, Rawat Pub., Jaipur, 2005.
7. Robinson, H. & Burnford, C.G. : Geography of Transport, London, 1978.
8. White, H.P. & Senior, M.L. : Transport Geography, Longman, London, 1983.
9. Saxena, H.M. – Transport Geography, Rawat Publications, Jaipur- 2008.
10. जगदीश सिंह –परिवहन भूगोल, उत्तरप्रदेश हिन्दी ग्रन्थ अकादमी।

Paper VII (a) - Urban Geography

Duration - 3 hours Max. Marks - 100

Note : The question paper will contain three sections as under –

Section-A : One compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. Total marks : 10

Section-B : 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. Total marks : 50

Section-C : 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type, answer in about 500 words, 2 questions to be attempted. Total marks : 40

Unit -I

Aims and scope of Urban Geography. Factors affecting the growth of towns during Neolithic period, Greek and Roman period, Dark Ages, Medieval period, Renaissance period, Industrial Revolution and Modern times. Chief characteristics of the towns of each period.

Unit-II

Trends of urbanization in the world. Urbanization in India since 1901 and its problems. Definitions of Urban centres. Chief characteristics of modern town, City Conurbation, Metropolis and Megalopolis.

Unit-III

Spatial pattern and distribution of urban centres. Classification of cities. Urban Rank - Size relationship. The Basic and Non-Basic concept of urban economic functions and its application.

Unit- IV

Urban Morphology, Unplanned and planned growth of town : Urban plans, Morphology of Indian cities, Market Morphology. Functional structure of towns-C.B.D., Residential areas, manufacturing areas and other functional areas. Models of urban structure. Central Place Theory.

Unit- V

Centrifugal and Centripetal forces in Urban Geography, Development of suburbs, Rural-urban fringe, Satellite town, ring towns, Sphere of urban influence (Umland) and its delimitation.

Principles of Town Planning -Preparation of a Master Plan with example of a Rajasthan town. Principles of Regional Planning.

Books Recommended:

1. Taylor, G. : Urban Geography, Methuen & Co., London.
2. Geddes : Study in City – Development.
3. Singh, R.L. : Banaras : A Study in Urban Geography, Students Friends, Allahabad.
4. A.E. Smailes : The Geography of Towns, Huchinson University Library, London.
5. Dickinson, R.E. : City Region and Regionalism, Routeledge and Kegon Paul, London.
6. Harold M. Mayer : Readings in Urban Geography, Central Book Depot., Allahabad.
7. V.L.S. Prakash Rao : Towns of Mysore State, Statistical Publishing House, Calcutta.
8. Shah Manzoor Alam : Hyderabad and Secundrabad Twin City : Studies in Urban Geography, Allied Publishers, Delhi.

9.	R.L. Singh	:	Bangalore: An Urban Survey, National Geographical Society of India, B.H.U., Varanasi.
10.	N.V. Sovani	:	Urbanization and Urban India, Asia Publishing House, Bombay.
11.	Hudson, F.S.	:	Geography of Settlement.
12.	Johnson, R.H.	:	Urban Geography.
13.	Ambedkar	:	Town and Country Planning.
14.	Turner, R.	:	India's of Urban Future, Oxford University Press, Bombay, 1962.
15.	Carter	:	The Study of Urban Geography, Edward Amold, London, 1972.
16.	Northan, R.C.	:	Urban Geography, John Willey & Sons, N.Y., 1976.
17.	Saxena H.M. & M.Z.A. Khan	:	Urbanization, Environmental Degradation and Quality of Life, Rawat Publication, Jaipur, 2016.
18.	Urban Research Method, Von Nostrand Co. Inc., Toronto, 1961.		
19.	जोशी, आर.एल:नगरीय भूगोल, रा. हि. ग्रन्थ अकादमी, जयपुर।		
20.	ओमप्रकाश सिंह	:	नगरीय भूगोल।
21.	बंसल, एस.सी.	:	नगरीय भूगोल।

Paper VII (b) - Geography of Population and Settlement

Duration - 3 hours Max. Marks - 100

Note : The question paper will contain three sections as under –

Section-A : One compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. Total marks : 10

Section-B : 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. Total marks : 50

Section-C : 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type, answer in about 500 words, 2 questions to be attempted. Total marks : 40

Unit - I

Definition and scope of Population Geography. Theory and Biological Population Geography - Malthusian, Neo- malthusian and Optimum Population. Theory and Biological Population Census with special reference to the Indian Census. Growth, Density and Distribution of Population in the world with special reference to India.

Unit - II

Age and Sex Composition, Economic and religious Composition of Population with special reference to India, Rural and Urban Population and Urbanization, Internal and International Migration, Behavioral Migration Studies. The Population Policy of Govt. of India.

Unit - III

Definition, Scope and Development of Settlement Geography. Theories of Settlement Geography. Causes of Origin of Settlement Types.

Unit - IV

Site and situation of Rural and Urban settlements, Settlement pattern, Size and spacing of Rural and Urban settlements, Morphological characteristics of Rural and Urban settlements with special reference to India Sector.

Unit - V

Concentric zone and multiple Nuclie Models of Urban growth. Problems of Urban housing and emergence of status.

Books Recommended :

1.	Clarks	:	Population Geography
2.	Jones	:	A Population Geography
3.	Trewartha	:	A Geography of Population
4.	Woods	:	Population Analysis in Geography
5.	Woods	:	Theoritical Population in Geography
6.	Beaujen Garnier	:	Geography of Population
7.	Zelinsky	:	A Prologue to Population Geography
8.	Wilson	:	Population Geography
9.	Chandra	:	Population Geography
10.	Hudson, E.S.	:	Geography of Settlement
11.	Davis	:	The Population of India and Pakistan
12.	A.E. Smailes	:	The Geography of Towns, Huchinson University Library, London
13.	Singh, R.L.	:	Meaning, Objectives, Scope of Settlement Geography, B.H.U.
14.	Sharma, R.C.	:	Settlement Geography of Indian Desert
15.	Chisholm	:	Rural Settlement and land Use.
16.	Sharma B.L.	:	Population and Settlement Geography, Malik and Co., Jaipur
17.	वर्मा, एल.एन.	:	अधिवास भूगोल, राजस्थान हिन्दी ग्रन्थ अकादमी, जयपुर।

Paper VII(c) - Bio- Geography

Duration - 3 hours Max. Marks - 100

Note : The question paper will contain three sections as under –

Section-A : One compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. Total marks : 10

Section-B : 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. Total marks : 50

Section-C : 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type, answer in about 500 words, 2 questions to be attempted. Total marks : 40

Unit – I

Meaning and scope of Bio- Geography, History of Zoo- Geography and Plant Geography, Ecology, Habitat and Climatic factors, Plant response to environment.

Unit – II

Barriers to distribution and means of dispersal of plants. Types of Plant and plant Communities in general. Factors controlling forest distribution. Characteristics and distribution of Equatorial and temperate forests and grasslands.

Unit - III

Climate change and their effect on the plant cover, condition of existence for animals. Barriers to distribution and means of dispersal of animals. Types of Isolation, effect of geographic Isolation. Distribution of animals.

Unit - IV

Zoo Geographical regions. Aquatic environment and life, marine and fresh water Fauna. Vegetation and floral regions of India, economic importance.

Unit - V

Conservation of wild life and forests, Soil erosion and conservation. Pollution and its effect on wild life and vegetation. National Parks and Sanctuaries of India. Biodiversity and its conservation.

Books Recommended :

1. Newbegin : Plant and Animal Geography
2. Cline : Foundation of Plant Geography
3. G. Ponald : The Geography of Flowering Plants.
4. Darlington : Zoo- Geography
5. Schimper : Plant Geography
6. S. L. Hora : Fundamental Conception of Zoo- Geography, N.G.S.I. Banaras
7. S. L. Hora : Terrestrial Fishes and the Significance of their Distribution in Geographical Studies, N.G.S.I. Banaras
8. H.S. Mathur : Bio- Geography
9. अग्रवाल, एल.सी.: जैव भूगोल, रोहिणी बुक्स, जयपुर।
10. शर्मा एवं शर्मा : पादप भूगोल, रोहिणी बुक्स, जयपुर।

Paper VIII (a) - Political Geography

Duration - 3 hours Max. Marks - 100

Note : The question paper will contain three sections as under –

Section-A : One compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. Total marks : 10

Section-B : 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. Total marks : 50

Section-C : 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type, answer in about 500 words, 2 questions to be attempted. Total marks: 40

Unit - I

Definition, Scope and Development of Political Geography *:*

1. Definition and scope of political geography : its relation with other social sciences.
2. Geopolitics and German School of Thought
3. Development of Political Geography. Concepts of Mackinder, Spykman,, Meining, Hoosan, De Seversky, World's Geostrategic regions.
4. Geo-politics and conflict zones of the world.

Unit - II

Methodology :

1. The functional approach and Unified Field Theory in Political Geography.
2. The Elements of the state : Territory, Population, Organisation & power.
3. The Heart of the State : Core Areas.
4. The Focus : Capital City.

Unit - III

Frontiers, Boundaries : Concepts and Classification :

1. Frontiers, Boundaries and Buffer Zones.
2. Classification of Boundaries, changing concept.
3. The concept of Territorial Sea and Maritime Boundaries.
4. Landlocked States : Problems of access.

Unit - IV

Growth of Nations and Disintegration of Empires:

1. Unitary and Federal States.
2. The Dying Colonialism and Resurgent Nationalism.
3. Supernationalism: from State to Blocks

Strategy of International Politics :

1. Study of Federation of Independent States and U.S.A. as Power.
2. Emergence of Third World Block.
3. Politico-geographical study of India.

Unit - V

Extending Dimensions of Political Geography:

1. The Politics and transportation.
2. The geography of foreign aid and economic development.
3. The politico-geographical implications of space research.
4. Electoral Geography - Importance, Concepts, Electoral studies of elections and Gerrymandering.

Books recommended:

1. Alexander, L.M. : World Political Patterns. John Murray and Co., London.
2. Boggs, S.W. : International Boundaries, Columbia.
3. Bowman, I. : The New World Problems in Political Geography, World Co. Younkers, On Hudson.
4. East, W.G. & Moodies, A.E.: The Changing World, George G. Harrap & Co., London.
5. East, W.G. & Spate, O.H.K. :The Changing Map of Asia, Methuen & Co., London.
6. Frigreiv. J. : Geography & World Power, University of London Press, London.
7. Fawcer, C.B. : Frontiers - Study in Political Geography, Oxford University Press, Oxford.
8. Fizgiddeon, R.H. : Global Politics, University of California Press, Parkaley.
9. Horradin, J.F. : An Outline of Political Geography, Affred A. Knob, New York.
10. Moodie, A.E. : Geography Behind Politics, Hutchinson's University Library, London.
11. Pearch, C.E. et al : World Political Geography, Thomas, Y. Crowell Co., New York.
12. Valkenburg, S.V. & Suz.C.L.: Elements of Political Geography, Second Edition, Eastern Economy Edition, Prentice Hall & Co. Ltd., New York.
13. Stransz, R.H. : Geopolitics - The Struggle for Space and Power, G.P. Pitman's & Sons, New York.
14. Spykman, N.J. : The Geography of Place, Harcour Brace, New York.
15. Wegert, A.W. : Principles of Political Geography, Appletion Century Craft Inc., New York.
16. Weigert, H.W., Stefansov, V. & Harrison, R.E. : New Compass of the World McMillan & Co., New York.

17.	Whittlesey, D.	:	The Earth and State, Henry Holt & Co., New York.
18.	W.A. Douglass Jackson:		Politics & Geography Relationship, Prentice Hall, New York.
19.	S.B. Cohen	:	Geography and Politics & Geography Relationship, Prentice Hall, New York.
20.	Crone	:	Background to Political Geography.
21.	H.J. Blij.	:	Systamatic Political Geography, John Willey & Sons, New York.
22.	Bergman, Edward E.	:	Modern Political Geography, W.M.C. Brown Company Publishers.
23.	Dikshit, R.D.	:	Political Geography : A Contemporary Prespective, Tata McGrawHill Publishing Co. Ltd., New Delhi.
24.	Sukhwal, B.L .	:	India - A Political Geography, Allied Publishers, New Delhi.
25.	सक्सेना, एच.एम.	:	राजनीतिक भूगोल, रस्तोगी पब्लिकेशन्स, मेरठ

Paper VIII (b) - Research Methodology

Duration - 3 hours Max. Marks - 100

Note : The question paper will contain three sections as under –

Section-A : One compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. Total marks : 10

Section-B : 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. Total marks : 50

Section-C : 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type, answer in about 500 words, 2 questions to be attempted. Total marks : 40

Unit-I

Problems of Geographical Research, Identification of Problems of regional and systematic Geography. Nature and source of data to be used, Hypothesis, Models.

Unit- II

Preparation of Research project and report writing, Carotgraphic representation of agricultural, transport, marketing and industrial data.

Selected techniques of spatial analysis, Methods of measurement of concentration and dispersion of economic activities.

Unit - III

Nearest neighbour analysis with examples, Regional interaction analysis, Gravity potential, Methods of delimiting regions - Resource Regions, Economic, Industrial, Agricultural and Planning regions.

Unit- IV

Regional population analysis - Population projection, Population Migration Projection, Network analysis with examples. Delimiting urban and market spheres of influence.

Unit-V

Techniques of Map analysis. Basics of Remote Sensing and G.I.S.. Morphometric analysis - drainage, scope analysis, Integrated area development planning.

Books Recommended:

1.	David, Unwin	:	Introductory Spatial Analysis, Methuen, London, 1981.

2. Gregory, S. : Statistical Methods and the Geographer, Longman,London, 1978.
3. Mahmood, A. : Statistical Methods in Geographical Studies, Delhi, 1978.
4. Maruice, Yeats : An Introduction to Quantitative Analysis in Human Geography, McGraw Hill, New York.
5. Peter Haggett, Andrew D. Cliff & Allan Frey : Location Methods Vol.I and II Edward Arnold, London, 1977.
6. यादव, एच. : मात्रात्मक भूगोल, नई दिल्ली।

Paper VIII(c) - Regional Planning and Development

Duration - 3 hours Max. Marks - 100

Note : The question paper will contain three sections as under –

Section-A : One compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. Total marks : 10

Section-B : 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. Total marks : 50

Section-C : 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type, answer in about 500 words, 2 questions to be attempted. Total marks : 40

Unit - I

Regional concept in Geography, Conceptual and theoretical framework, merits and limitations for application to regional planning and development; changing concept of the region from an inter-disciplinary view-point.

Unit- II

Concept of space, area and locational attributes. Approaches to delineation of different types of regions and their utility in planning. Planning process - sectoral, temporal and spatial dimensions;

Unit-III

Indicators of development and disparities - case study of India. Regional development strategies - concentration v/s dispersal, case studies for plans of developed and developing countries.

Unit- IV

Short- term and long term planning in a national context. Regional plans of India Regional development in India - problems and prospects..

Unit- V

Concept of Multi-level planning : Decentralised planning; Peoples participation in the planning process; Panchayati Raj system. Role and relationship of Panchayati Raj institutions (Village Panchaayat, Panchayat Samiti and Zila Parishad) and administrative structure (Village, Block and District).

Books Recommended :

1. Abler, R. et.al : Spatial Organisation : The Geograper's View of the World, Prentice Hall, Englewood Cliffs, N.J., 1971.
2. Bhat, L.S. : Regional Planning in India, Statistical Publishing Society,Calcutta, 1973.
3. Bhat, L.S. : Micro-Level Planning : A Case Study of Karnal Area, Haryana, K.B. Publications, New Delhi, 1976.
4. Chorley, R.J. & Hagget, P.: Models in Geography, Methuen, London, 1967.

5. Christaller, W.: Central Places in Southern Germany, Translated by C.W. Baskin, Prentice Hall, Englewood Cliffs, New Jersey, 1966.
6. Friedmann, J. & Alonso, W.: Regional Development Policy - A Case Study of Venezuela, M.I.T. Press Cambridge, Mass, 1966.
7. Friedmann, J. & Alonso, W.: Regional Development and Planning - A Reader, M.I.T. Press Cambridge, Mass, 1967.
8. Glikson, Arthur : Regional Planning and Development, Netherlands Universities Foundation for International Co-operation, London, 1955.
9. Gosal, G.S. & Krishan, G.: Regional Disparities in Levels of Socio-Economic Development in Punjab, Vishal Publications, Kurukshetra, 1984.
10. Govt. of India, Planning Commission - Third Five Year Plan, Chapter on Regional Imbalances in Development, New Delhi, 1961.
11. Indian Council of Social Science Research - Survey of Research in Geography, Popular Prakashan, Bombay, 1972.
12. Johnson, E.A.J. : The Organisation of Space in Developing Countries, Harward University Press, Cambridge, 1970.
13. Kuklinski, A.R. (ed.) : Growth Poles and Growth Centres in Regional Planning, Mouton, The Hague, 1972.
14. Kundu, A. & Raza,Moonis: Indian Economy - The Regional Dimension, Spectrum Publishers, New Delhi, 1982.
15. Losch, A. : The Economics of Location, University Press, Yale, New Haven, 1954.
16. Misra, R.P. : Regional Planning Concepts, Techniques and Policies, University of Mysore, Mysore, 1969.
17. Misra, R.P. & Others (eds.): Regional Development Planning in India - A Strategy, Institute of Development Studies, Mysore 1974.
18. Mitra,A. : Levels of Regional Development, Census of India, Vol.I, Part1A (I) and (II), New Delhi, 1965.
19. Mydral, G. : Economic Theory and under Development Regions Gereld Ducjworth, London, 1957.
20. Nangia, Sudesh : Delhi Metrololitan Region, Rajesh Publication, Delhi, 1976.
21. Richardson, H.W. : Regional Economics, Weidenfeld and Nicolson, London, 1969.
22. Sundaram, K.V. (ed.): Geography and Planning, Essays in Honour of V.L.S. Prakasa Rao, Concept Publishing Co., New Delhi, 1985.
23. Tarlok Singh : India's Development Experience, McMillan, New Delhi, India, 1974.
24. Raza Moonis (ed.) : Regional Development, Heritage Publishers, Delhi 1988.
25. Mishra, R.P. et.al : Multi - Level Planning, Heritage Publishers, Delhi, 1980.

Paper VIII (d) - Remote Sensing and GIS

Duration - 3 hours Max. Marks - 100

Note : The question paper will contain three sections as under –

Section-A : One compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. Total marks : 10

Section-B : 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. Total marks : 50

Section-C : 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type, answer in about 500 words, 2 questions to be attempted. Total marks : 40

Unit-I

REMOTE SENSING - Meaning history and scope of remote sensing. Basic principles of Remote sensing:- Electro-magnetic radiation (EMR) and Spectrum, Laws of Radiation, Interaction of EMR with atmosphere and Earth's surface. Platforms and Sensors- their types and characteristics. Concept of resolution, Concept of resolution, Concept of Signatures.

Unit-2

Basic concept and principles of Thermal, microwave and hyper-spectral sensing, Fundamentals of Aerial Photography and photogrametry. Air photo interpretation, Digital Image processing and classification. Geo reference system.

Unit-3

Satellite Remote Sensing: History and development of various types of satellite and space program with special reference to Indian Space Resources program. Satellite orbits - Geo-stationary and sun-synchronous. Earth Resources Satellites- LANDSAT, SPOT, IRS, and IKONOS satellite series. Meteorological satellites – INSAT, NOAA. Bhuva.

Unit-4

Geography Information System: Introduction, components of GIS, Data models and structure: vector raster data, Data base creation and management. Data inputting methods, attribute data input and management, spatial data editing, data integration, GIS softwares-open source softwares. Importance of GIS.

Unit-5

Global position system, segment of GPS: The space segment – GPS satellite systems, GPS of various countries with special reference to NAVIC. Applications of remote sensing in under Planning, water resource management, Land use studies, environmental impact assessment, geology, mineral exploration, disaster management. Application of GIS.

Text Books:

1. Remote Sensing and its application by J.R. Jensen
2. Introduction to Remote sensing-James Campbell and R.H wynne

3. Principals of Geo physical Information Systems-Peter A Burragh and Rechael A. Mc Donnell, oxford Publishers 2004
4. Remote sensing and Geographical Information systems by M.Anji Reddy JNTU Hyderabad 2001, B.S. Publication.
5. Introduction to GIS by Kang-tsung chang, TMH Publications & Co.,
6. Basics of Remote sensing & GIS by S.Kumar, Laxmi Publications.
7. Fundamentals of remote sensing by George Joseph.
8. Fundamentals of GIS by Michael N.DeMers Wily publications.
9. सुदूर संवेदन एवं भोगोलिक सूचना प्रणाली के सिद्धान्त – देवी दत्त चोनियल शारदा पुस्तक भवन

Dissertation on Geographical Problem (In lieu of paper VI or VII or VIII)

N.B. : The candidates offering this paper will be require to submit dissertation as per University conditions. It will be examined by a board of two examiners. Three copies of dissertation must be submitted to the University. Out of which one copy will be returned to the Department/ College and one of the Supervisor. The dissertation should exclusively be based on field work and statistical analysis as far as possible and be prepared under the guidance of a postgraduate teacher of five years standing. The volume of the dissertation should not exceed 100 pages.

Practicals

Surveying and laboratory Work (Total 10 hrs per batch of 10 candidates spread over two days).

1.	Laboratory work (3 hrs duration)	40 Marks
2.	Record work & viva-voce (15+5) 2 hrs	20 Marks
3.	Field surveying & viva voce (15+5) 4 hrs	20 Marks
4.	Survey camp & viva - voce (15+5)	20 Marks
	Total	***100 Marks***

N.B. 12 hrs of teaching practical be provided per batch of 10 students per week.

1. The Art of surveying, History of surveying, scope, utility and problems. Classification of Surveying.
2. Methods and techniques of representation of relief :

(a) Methods and techniques of depicting relief.

(b) Profile, gradients and calculation of slopes.

(c) Contours and intervisibility.

(d) Block diagrams, field sketching, serial profile, hypsographic curves, altimetric frequency graphs.

3. Interpretation of Topographical Maps: A brief history of topographical Maps of the world with special reference to India and the interpretation. Detailed study of toposheets.

4. Air photo Interpretation and exercise on the determination of height of plane, parallax, number of runs and number of photographs, knowledge of stereoscopic vision, mosaic, types of cameras, emulsions and stereoscopes, Interpretation and identification of cultural and physical features on serial photography. Importance of Remote Sensing and GIS in Geographical Studies.

5. Field Surveying and Camp Work :

(i) Theodolite : its part and their functions, use of theodolite, theodolite traverse and traverse computation, independent coordinates. An introduction to Total station.

(ii) Use and application of planetable and clinometer in small area survey, traverse, Resectioning: Two and Three -point problems, practical contouring by Clinometer.

(iii) Levelling : Terms, types and principles of levelling, Classification of levelling, Profiles and other levelling. Use of Dumpy level, practical countouring, Cross sectioning, use and application of Abney level.

(iv) Survey Camp - A topographical survey of settlement will be done by organising a camp atleast for a week duration and maps, reports of the camp will be prepared, students will stay at camp. The report shall be prepared separately and independently.

Books Recommended:

1.	Kanetkar, T.P. & Kukarni, S.V.	-	Surveying and Levelling, Vol., A.V. Gria Prakash, Puna.
2.	Deshpande, T.S.	-	A Text Book of Surveying and Levelling, United Book Corporation, Pune.
3.	James Glending	-	Principle and Use of Surveying, Blackie and Sons Ltd., Glasgo.
4.	B.C. Punamia	-	Surveying and Field Work, Vol.1, Standard Books Depot, Delhi.
5.	Breed, C.B. & Honmer, G.L.	-	The Principle of Surveying, Vol I and II,New York
6.	Davis, R.E. & Foot, F.S.	-	Surveying, Theory and Practice, John Willey & Sons Inc.
7.	T.R. Tracy	-	Surveying, Theory and Practice, McGraw Hill Book Co., New York.
8.	Thrifall, H.S.A.	-	Text Book of Surveying and Levelling, Chart Grafin, London
9.	Williamson	-	Surveying and Field Work, Constable.
10.	Roorkee	-	Engineering College - Manual of Surveying.
11.	N.C. Gautam	-	Urban Land use Studies Through Airphoto Interpretation Techniques, Pink Publishing House, Mathura.