

SCHEME OF EXAMINATION
M.A./M.Sc. PREVIOUS (2019-20)
M.A./M.Sc. FINAL (2020-21)

Each Theory Paper

3 Hrs. Duration

100

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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 the practical part (wherever prescribed) of a subject/ paper separately. Previous and final each will be of 500 marks Total = 1000 Marks.
2. A candidate for a pass at each of the Previous and the final Examinations shall be required to obtain (i) at least 36% marks in the aggregate of 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 at least 25% marks in each individual paper at the examination and also in the test dissertation/ survey report/field work, wherever prescribed, he shall be deemed to have failed at the examination notwithstanding having obtained the minimum percentage of marks required in the aggregate for the 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 Examinations taken together, as noted below.
First Division 60% of the aggregate marks taken together at
Second Division 48% the Previous and the Final Examination
3. If a candidate clears any Paper(s)/Practical(s) Dissertation prescribed at the Previous and / of 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 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 typewritten and submitted in triplicate so as to reach the office of the Registrar at least 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 scheme of examination) lieu of a paper as have secured at last 55% marks in the case of annual scheme and I and II semester examinations taken together in the case of semester scheme,

irrespective of the number of papers in which a candidate actually appeared at the examination.

MA/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 of 100 Marks. Each of the theory paper will be of three hours duration. Candidates will be required to press of both in Theory and Practical separately.

Note : -

1. Each theory paper is divided into three independent units. The question paper is divided into three parts, Part –A, Part-B and Part-C
2. Part – A (20 marks) is compulsory and contains 10 question (20 words), at least three questions from each unit, each question is of 2 marks.
3. Part – B (20 marks) is compulsory and contains four questions, at least one from each unit. Candidate is required to attempt all four questions. Each question is of 5 marks (50 words).
4. Part – C (60 marks) contains six question, two from each unit. Candidate is required to attempt three questions from each unit. Each question is of 20 marks (400 words).

M.A./M.Sc. Previous

All four papers are compulsory.

Paper I : Evolution of Geographical thought. 100 Marks

Pater II : Structural and Dynamic Geomorphology. 100 Marks

Paper III : Principles and Theory of Economic Geography. 100 Marks

Pater IV : Any one of the following – 100 Marks

(a) Quantitative Techniques in Geography

(b) Transportation Geography

(c) Regional Planning.

Practical : 100 Marks

Total 500 Marks

N.B. : 12 hours of teaching practical be provided per batch of 15 students per week.

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

MA/ M.Sc. Final

PAPER V & VI are compulsory

Paper V : Advanced Geography of India. 100 Marks

Paper VI : Urban Geography. 100 Marks

Paper VII : Anyone of the following- 100 Marks

(a) Bio-Geography

(b) Agricultural Geography

(c) Population Geography.

Paper VIII : Anyone of the following 100 Marks

(a) Political Geography

(b) Industrial Geography

(c) Remote Sensing & G.I.S.

Dissertation : In lieu of paper VII or VIII.

Practical : 100 Marks

Total 500 Marks

N.B. : 12 hours of teaching practical be provided per batch of 15 students per week.

Instruction for Geography Practical Examination :

1. Record work of minimum 20 sheets must be prepared by students and checked & signed by teacher with date, otherwise students will be responsible. Students must write his/her name on every sheet. The teacher should give fresh exercise every year, so that the students may not undertake tracing of old exercise.
2. Viva-voce Examination be held to Judge the real knowledge the students and to examine the authenticity of the record work, the marking on record work and viva-voce based on the original work of the candidate and not merely producing the record work get done by any other agency. Marks will be deducted for the part of the syllabus not covered.
3. On an average about 15 students be examined in one day in MA 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 instruction at the time of obtaining his consent. For M.A. / M.Sc. Previous & Final a minimum of 2 days each be fixed to conduct the examination.

Note : A Copy of the instructions is sent to the examiners for their information.

M.A./M.Sc. PREVIOUS

PAPER-I : EVOLUTION OF GEOGRAPHICAL THOUGHT

3hr. duration
:100

Max.Marks

Note :-

1. Each theory paper is divided into three independent units. The question paper is divided into three parts, Part –A, Part-B and Part-C
2. Part-A (20 marks) is compulsory and contains 10 questions (20 words), at least three questions from each unit, each question of 2 marks.
3. Part-B (20 marks) is compulsory and contains five questions, at least one from each unit. Candidate is required to attempt all five questions. Each question is of 5 marks (50 words).
4. Part-C-(60 marks) contains six questions, two from each unit Candidate is required to attempt three questions one from each unit. Each question is of 20 marks (400 words)

Course Contents :

Unit – I

Meaning and definition, nature, aims and purpose, approaches and concepts of Geography, Geography as a social and natural science. Interdisciplinary trends, Post war, modern and recent trends in geography. Development of modern Geography in India.

Pre-scientific geographical ideas in ancient and medieval times : Indian influence. Geography – the Vedic age and Geography of Purana's (first four chapters of geography of Purana's by S.M. Ali), Detail study of JambuDwip.

Unit – II

Contribution by Greek, Roman and Arab Geographers, Al-Baruni and Ibn-Batuta. The emergence of scientific geography in the 18th and 19th centuries. Development of geographical ideas during 20th century. Founders of modern Geography – Humboldt, Ritter, Leaders of the first generation after Ratzel, Richthofen, Hettner, Contributions of Vidal-de-Blache, Brunhes, Demangeon and Blanchard. Contribution of Mackindre, Herbertson, Miss Semple, Huntington and Davis, Russian School of Geography.

Unit – III

Dualism in geography : Physical & human geography, Determinism & Possibilism, Regional & systematic geography, Revolution and Locational Analysis in geography, Theoretical & applied geography, Analytical & synthetically geography, Myth and reality about dualism.

Positivism, functionalism, Idealism and realism in geography, Behaviorism in Geography. Radical geography, Humanistic geography, Welfare geography and Feminist Geography, Postmodernism in Geography.

Books Recommended :

1. Minshull, Roger : The Changing Nature of Geography.

2. Hartshorne, Richard : Perspective on the Nature of Geography, The Association of American Geographers, Hutchinson University Library, Londoan.
3. Dikshit, R.D. : Geographical Thought – A Contextual History of Ideas, Prentice Hall of India Pvt. Ltd.
4. Wooldridge and 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, Grantham Rambhag, Kanpur.
7. Hussain, Majjid : Evolution of Geographical Thought, Rawat Publication, Jaipur.
8. Hagget, P. : Geography – A Modem Synthesis, Harper International Ed.
9. हुसैनमजिद : भौगोलिकविचारधाराओंकाइतिहासरावतपब्लिकेशन्स, जयपुर।
10. कौशिक, एस.डी. : भौगोलिकविचारधारा एवंविधि तंत्र, रस्तोगीप्रकाशन, मेरठ।
11. जैन, एस.एम. : भौगोलिकचिन्तनकाविकास, साहित्य भवन, आगरा।

PAPER-II : STRUCTURAL AND DYNAMIC GEOMORPHOLOGY

3hr. duration

Max.Marks

:100

Note :-

1. Each theory paper is divided into three independent units. The question paper is divided into three parts, Part –A, Part-B and Part-C
2. Part-A (20 marks) is compulsory and contains 10 questions (20 words), at least three questions from each unit, each question of 2 marks.
3. Part-B (20 marks) is compulsory and contains five questions, at least one from each unit. Candidate is required to attempt all five questions. Each question is of 5 marks (50 words).
4. Part-C-(60 marks) contains six questions, two from each unit Candidate is required to attempt three questions one from each unit. Each question is of 20 marks (400 words)

Course Contents :

Unit – I

Nature and scope of Geomorphology, Fundamental concept, Geological structures and landforms, uniformitarianism, concept of threshold, earth's interior, isostasy. Earth movements – epeirogenetic and orogenetic movement. Forces of crustal instability, plate tectonics, seismicity, vulcanicity, orogenetic structures with reference to the evolution of the Himalaya and Secure Himalayas.

Unit – II

Earth sculpturing processes, Concept of gradation, Agents and processes of gradation, causes, types and classification of weathering, Mass movement, erosional and depositional processes, resultant landforms and soil formation. Dynamic geomorphic processes; fluvial, glacial, Aeolian, marine and karst processes and resultant landforms. Concept of cycle of erosion and complexities in geomorphological processes. Slope evolution different views and models.

Unit – III

Geomorphology of ocean bottoms – Pacific, Indian and Atlantic ocean. Coral reefs and their theories. Coastal Geomorphology with special reference to India. Applied Geomorphology – application of geomorphic mapping terrain evaluation. Digital Elevation Model (DEM) and Triangulated Irregular Network (TIN) unit, land capability and last suitability classification, hydro-geomorphology, urban geomorphology, environmental geomorphology, geomorphic hazards. Coastal Regulation Zones (CRZ).

Suggested Books :

1. Ahmed, E. : Coastal Geomorphology of India, New Delhi.
2. Chorley, R.J. : Spatial Analysis in Geomorphology, Methuen, London, 1972.
3. Cooke, R.U. and Doornkamp, J.C. : Geomorphology in Environmental Management – Aintroduction, Clarendon Press, Oxford, 1974.
4. Cotton, C.A. : Geomorphology, John Willey & Sons, New York.
5. Dayal, P. : A Test Geomorphology.
6. Dury, G.H. : The Face of the Earth, Penguin Harmondsworth, 1959.
7. Fairbridge, R.W. : Encyclopedia of Geomorphology, Reinholdts, New York, 1968.
8. Goudie, A : The Nature of the Environment, Oxford & Blackwell London, 1993.
9. Garner, H.F. : The origin of landscap – A Synthesis of Geomorphology Oxford University Press, London, 1974.
10. Jefferys. H. : The Earth – Its Origin, History & Physical Constitution.
11. John, Pity : Introductions to Geomorphology.
12. Kale, V. and Gupta, A : Element of Geomorphology.
13. King and Embleton, C.A.M. : Glacial and Pre-Glacial Geomorphology, Amold.
14. Lobeck, A.K. : Geomorphology, McGraw hill Book co., New York.
15. Mitchell, C.W. : Terrain Evaluation, Longman, London, 1973.
16. सविन्द्र सिंह : भू-आकृतिविज्ञान, वसुन्धराप्रकाशन, गोरखपुर ।
17. कौशिक, एस.डी. : भू-आकृतिविज्ञान, रस्तोगीप्रकाशन, मेरठ ।
18. नेगी, बी.एस. : भू-आकृतिविज्ञान, रस्तोगीप्रकाशन, मेरठ ।

PAPER-III : PRINCIPLES & THEORY OF ECONOMIC GEOGRAPHY

3hr. duration

Max.Marks

:100

Note :-

1. Each theory paper is divided into three independent units. The question paper is divided into three parts, Part –A, Part-B and Part-C
2. Part-A (20 marks) is compulsory and contains 10 questions (20 words), at least three questions from each unit, each question of 2 marks.
3. Part-B (20 marks) is compulsory and contains five questions, at least one from each unit. Candidate is required to attempt all five questions. Each question is of 5 marks (50 words).
4. Part-C-(60 marks) contains six questions, two from each unit Candidate is required to attempt three questions one from each unit. Each question is of 20 marks (400 words)

Course Contents :

Unit – I

Definition, scope, concepts and recent trends in economic geography, relation for economic geography with economics. Simple model of economy, spatial structure of economy, Location of economic activities and spatial organization of economy, sectors of economy – primary, secondary and tertiary; Economic region – concept and methods of delimitation

Factors of location of economic activities: physical, social, economic and cultural.

Unit-II

Concept and techniques of delimitation of agricultural regions, crop combination and diversification; von Thunen's model and its modifications. Spatial distribution of energy and each source of power as supplementary to the other.

Classification of industries; Resource based and footloose industries, Theories of industrial location – Weber, Losch, E.H. Hoover, Isard and D.H. Smith ; Case studies of selected industries iron and Steel, Aluminum, Chemical, Oil refining and Petrochemical, Engineering, Textile etc.

Unit – III

Modes of transportation and transport cost; accessibility and connectivity: international, inter and intraregional; comparative cost advantages. Transport Index, Typology of markets, market network in rural societies, market system in urban economy, role of market in the development of trade and commerce, Dynamics of world trade and investment.

Economic development of India, Regional disparities, Impact of green revolution on Indian economy, Globalization and Indian economy and its impact on environment.

Suggested Books :

1. Lloyd and Dicken : Location in Space- Theoretical Approach to Economic Geography.
2. McCart and Lindberg : A Preface to Economic Geography.
3. Smith, D.E. :Industrial Location – An Economic Geographical Analysis.
4. Berry Conkling &Ray : The Geography of Economic Systems, Prentice Hall.
5. Smith, J.C. and Philip, M.O. : Industrial and Commercial Geography, Henry Holt.
6. Miller, E.W. : A Geography of Manufacturing.
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. M.V. Royen and N.A. Bengston : Fundamentals of Economic Geography Prentice Hall, New York.
11. Remmer, T.H. & other : World Economic Geography.
12. Robson, H. : Economic Geography, M.Sc. Donald, London.
13. Thoman, R.S. : The Geography of Economic Activity, McGraw Hill, New York.
14. Zimmedman, E.W. : World Resources and Industries, Harper and Co., New York.
15. Robertson D. (ed) : Globalisation and Environment, E. Elgan Co., U.K. 2001.
16. Wheeler J.O. : Economic Geography, John Wiley, New York, 1995.
17. Dreze, J. and Sen, A : India – Economic Development and Social Opportunity, Oxford University Press, New Delhi, 1996.
18. काशीनाथ सिंह : आर्थिकभूगोल के मूलतत्त्व, वसुन्धराप्रकाशनगोरखपुर।
19. पुरुषोत्तमजैन : आर्थिकभूगोल, रस्तोगीप्रकाशन, मेरठ।
20. जैन. एस.सी. : सैद्धान्तिकआर्थिकभूगोल,

PAPER-IV (a) : QUANTITATIVE TECHNIQUES IN GEOGRAPHY

3hr. duration

Max.Marks

:100

Note :-

1. Each theory paper is divided into three independent units. The question paper is divided into three parts, Part –A, Part-B and Part-C
2. Part-A (20 marks) is compulsory and contains 10 questions (20 words), at least three questions from each unit, each question of 2 marks.

3. Part-B (20 marks) is compulsory and contains five questions, at least one from each unit. Candidate is required to attempt all five questions. Each question is of 5 marks (50 words).
4. Part-C-(60 marks) contains six questions, two from each unit Candidate is required to attempt three questions one from each unit. Each question is of 20 marks (400 words)

Course Contents :

Unit – I

Meaning and concept of research, Research problem, meaning and identification, Hypothesis and testing of hypothesis, Research design and types of research, writing research report, Sampling frame and procedure, sampling size and error, Measure of central tendency-Mean, Median, Mode.

Unit – II

Measure of dispersion, Standard deviation and Mean deviation, Interpolation, Extrapolation, Correlation, Spearman's rank and product movement correlation, regression analysis, simple liner, Construction of regression line, Multiple regression and correlation, Regression residuals.

Unit – III

Probability: Theory of probabilities-law of addition and multiplication, probabilities of distribution : Normal, Binomial, Poisson-sampling : Basic concepts, Hypothesis Testing : Needs and types of hypotheses-goodness of fit and significance and confidence levels, Chi-square test, binomial test, t-test, Mann-Whitney U-test, F-test, Analysis of Variance (ANOVA), Principles and elements of factor analysis ,principle component analysis.

Books Recommended :

1. David Unwin : Introductory Spatial Analysis, Methuen, London, 1981.
2. Gregory, S. : Statistical Methods and Geographer, Longman, London, 1978.
3. Hammond R and P.S. McCullagh : Quantitative Techniques in Geography : an Introduction, Clearendan Press, Oxford, 1974.
4. John P. Cole and Cuchlanie A.M. King : Quantitative Geography, Johri Wiley, London, 1968.
5. Johnston R.J. : Multivariate Statistical Analysis in Geography, Longman, London, 1973.
6. Kaustoniannis : Theory of Econometrics, Mcmillan, London, 1973.
7. Maurice Yeats : An Introduction to quantitative Analysis in Human Geography, McGraw Hill, New York, 1974.
8. PetterHaggett, Andrew D.Cliff, & Allan Frey, : Location Methods.

PAPER-IV (b) : Transportation Geography

3hr. duration

Max.Marks

:100

Note : -

1. Each theory paper is divided into three independent units. The question paper is divided into three parts, Part –A, Part-B and Part-C
2. Part – A (20 marks) is compulsory and contains 10 question (20 words), at least three questions from each unit, each question is of 2 marks.
3. Part – B (20 marks) is compulsory and contains four questions, at least one from each unit. Candidate is required to attempt all four questions. Each question is of 5 marks (50 words).
4. Part – C (60 marks) contains six question, two from each unit. Candidate is required to attempt three questions from each unit. Each question is of 20 marks (400 words).

Course Contents :

Unit-I

Transportation Geography : Meaning, Definition and Subject matter, Development of Transportation geography : Ideas of Edward Ulman, Ideas of M.E.E. Hurst, Modes of Transportation : Ways, Oceanic transportation, Air transportation

Unit – II

Concepts and measures of distance, Transportation and spatial structure, Transportation and spatial processes : Regional specialization, Transportation cost, Ideal processes of development of transportation, Network analysis : indices as measures of connectivity, Basic network configuration

Unit – III

Measures of nodal accessibility, gravity model Allocation models, Urban transport problems, Major transport routes of the world, Transport planning, Transport system in India.

Books Recommended :

1. Abler, Adams and Gould, Spatial organization : the geographers view of the world, Prentice Hall, New York.
2. Buchannan, C.D. Traffic in Towns, Buchannan Report, HMSO, London.

3. Hagget, P. et al, Locational Analysis in Human Geography, Edward Arnold, London 1977.
4. Hagget, P and R.J. Chorley, Network Analysis in Geography, Arnold, London 1968.
5. Hay, A. Transport Economy, Macmillan, London 1973.
6. Hoybe, B.S. (ed) Transport and Development, Macmillan, London 1973.
7. Hurst, M.E.E. Transportation Geography, : comments and readings, McGraw Hill, New York 1974.
8. Hussain, M. et al, transport geography : perspective in economic geography series anmol publications Pvt. Ltd. New Delhi.
9. James P.E. and C.E. Jones (eds) American Geography inventory and prospect, Syracuse university press, Syracuse, 1954.
10. Johnston, R.J. Multivariate Statistical analysis in geography : A Premier on the general linear model, longman, London 1978.
11. Kansky, K.J. Structure of transportation network, research paper No 218, department of geography, university of Chicago.
12. Knowles, R and J. Wareing, Economic and social geography, Heinemann.
13. Lowe, J.C. and S. Moriyadas, The Geography of Movement, Houghton Mifflin co. Boston.
14. Munby, D. Transport, Penguin.
15. Patankar, P.G. Urban Transport in Distress, Control institute of Road Transport, Pune.
16. Raza, Moonis and Y.P. Agrawal, Transport Geography of India. Concept Publishing Company, New Delhi 1985.
17. Robinson, H. And C.G. Bamford, Geography of Transportation, Mc Donald and Evans, London 1978.
18. Taffee. E.J. and et al, Transport Geography, Prentice Hall Inc.
19. Taffec, E.J. and H.L. Ganthier, Geography of transportation , Practice Hall Inc, New Jersey, 1973
20. Ulman, E.L. American Commodity Flow, University of Washington Press. 1957
21. White H.P. and M.L. Senior, Transport Geography, Longman, London, 1983
22. Woodcock, R.G. and M.J. Baily, Quantitative Geography, Mc Donald and. Evans.
23. Yeats, Maurice, An Introduction, Quantitative Analysis in Human Geography, McGraw Hill Book Company, New York.
24. सिंह जे. (1977), परिवहन एवं व्यापार भूगोल, लखनऊ हिन्दी ग्रन्थ एकादमी ।
25. प्रसाद कमला (2010), परिवहन भूगोल, University Publication, London UK.
26. कौशिक देवेश (2012), परिवहन भूगोल, हिन्दी बुकसेन्टर, नई दिल्ली ।

PAPER-IV (c) : REGIONAL PLANNING

3hr. duration

Max.Marks

:100

Note : -

1. Each theory paper is divided into three independent units. The question paper is divided into three parts, Part –A, Part-B and Part-C
2. Part – A (20 marks) is compulsory and contains 10 question (20 words), at least three questions from each unit, each question is of 2 marks.
3. Part – B (20 marks) is compulsory and contains four questions, at least one from each unit. Candidate is required to attempt all four questions. Each question is of 5 marks (50 words).
4. Part – C (60 marks) contains six question, two from each unit. Candidate is required to attempt three questions from each unit. Each question is of 20 marks (400 words).

Course Contents :

Unit – I

- (A) Regional Planning : Term, Task, Scope and objective.
- (B) Specific problems : Task and scope of regional Planning in developing countries.
- (C) Principles and Determination of Regional Planning, Significance of the ecological potential of a country's region or regional planning. Environmental issues in Regional Planning. Planning for sustainable development.
- (D) Importance of the density, distribution and development of population for regional planning.

Unit – II

- (A) Significance of the term 'Integration' (Political, Economic, Social and Spatial) for regional Planning.
- (B) Importance of the political system for regional planning.
- (C) Significance of the factor, adaptation of development of different social classes of the population for regional planning.
- (D) Smart City Project.

Unit – III

Methods of Regional Planning :

- (a) Factor Analysis.
- (b) Comparative Cost-analysis.
- (c) Industrial complex and analysis.
- (d) Shift analysis.

Suggested Books :

1. Maquire, D.J., M.F. Goodchild and D.W. Rhind (eds.) (1991). Geographical Information Systems : Principles and Applications, Longman Scientific and Technical, Harlow, Essex, U.K., Two volumes.
2. McCrone, G. (1969). Regional Policy in Britain, Allen & Unwin, London.
3. Miles, I. and Irvine, J. (eds) (1982). The Poverty of Progress : Changing Ways of Life in Industrial Societies, Pergamon Press, Oxford.
4. Misra R.P., Sundram K.V., PrakasaRao, V.L.S. (1974). Regional Development Planning in India, A New Strategy, Vikas Publishing House, New Delhi.
5. Misra R.P. (ed). (1992). Regional Planning, Concepts, Techniques, Policies and Case Studies, Concept, New Delhi.
6. Mitra, A. (1965). Levels of Regional Development in India, Census of India, New Delhi.
7. Mumford, Lewis, (1938). The Culture of Cities, Harcourt Brace, New York.
8. Murdoch, J. and Marsden, T. (1994). Reconstructing Rurality : The Changing Countryside in an Urban Context, UCL Press, London.
9. Murray, Allan C. (1967). Methods of Landscape Analysis, Landscape Research Group, London.
10. Nath, V. (1964). Resource Development Regions and Division of India, Planning Commission, New Delhi.
11. NCAER (1959). Techno-Economic Survey of Bihar, Asia Publishing House, Bombay.

GEOGRAPHY PRACTICAL

Max. Marks :

100

Laboratory Work (Total 8 hrs. per batch of 15 candidates spread over two days.)

Distribution of Marks will be as follows :

- | | |
|---|----------|
| 1. Laboratory and Map Work Test (4hours duration)
(5 problems out out of 6 problems) | 50 Marks |
| 2. Record work and viva-voce (20+10) (2 hour) | 30 Marks |
| 3. Research Project Report & viva-voce (15+5)(2 hour)
(Based on Socio – Economic Survey Report with PPT) | 20 Marks |

Total

100 Marks

Note : Record work of minimum 25 sheets must be prepared by students and checked & signed by teacher with date, otherwise students will be responsible. Students must write his/her name on

every sheet. The teacher should give fresh exercise every year, so that the student may not undertake tracing of old exercise.

Course Content :

Laboratory and Map Work:

1. **The art and Science of cartography**, history of maps, materials, techniques and preparation of maps.

- I. Enlargement. Reduction and Finding of Area of Maps. Use of Plan meter.

- II. Elementary Trigonometry.

2. **Map Projections**- General principles, classification and choice of projections, construction, properties, merits and demerits, limitations and use of the following projections :

Mathematical constructions of the following projections -

- I. Conical Projections :

1. Equal area with two standard Parallels (Albert's Projection)

2. Bonne's

- II. Cylindrical Projections

1. Mercator's

2. Gall's Stereographic

- III. Zenithal Projections :

1. Gnomonic –Equatorial case.

2. Stereographic – Equatorial case.

3. Orthographic –Polar case.

- IV. Conventional Projections :

1. Mollweide

2. Interrupted Mollweide and Goode's

3. Climatic Diagrams :

Climograph – Taylor's / Foster's. Climatograph, Compound windrose, wind-star diagram. Rainfall dispersion diagram, water budget diagram.

4. Statistical Analysis :

Mean, median and mode, standard deviation, Coefficient of variation and Lorenz Curve, correlation – Spearman's & Carl Pearson's.

Quantitative Techniques : Theoretical basis of nearest neighbor analysis, practical exercise on nearest neighbor analysis, Network analysis, locational analysis of urban centres.

5. Maps and Diagrams :

Maps-Isopleths, choropleth, chorochromatic, isochrones and population potential surface maps, Sten-de-Geer's and Stilgen-Baur's method. Diagram-Population pyramids (all types), Value-area cartogram, Triangular diagram, Block & Sphere, Ergograph – simple and ogilvies's. (All these be computed from the statistical data, preferably based on district or tehsil unit areas)

6. Project Report :

A candidate is to prepare project report on socio-economic aspects of a village/ Town/ City within Rajasthan. The project should be based on primary data obtained by the candidate. The data should be represented by suitable cartographic methods in hard copy or PowerPoint presentation (PPT).

Books Recommended

1. Robinson, A.H. et.al. : Elements of Geography, John Willey and Sons, U.S.A., 1995.
2. Sarkar, AK, : 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. and Wilkinson, H.R. : Map 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. जे.पी. शर्मा : प्रायोगिक भूगोल, रस्तोगी प्रकाशन, मेरठ ।
8. इन्द्रपाल एवंमाथुर : मानचित्र प्रक्षेप, राजस्थान हिन्दी ग्रंथ अकादमी ।

MA / M.Sc. FINAL
PAPER -V : ADVANCED GEOGRAPHY OF INDIA

3hr. duration

Max.Marks

:100

Note :-

1. Each theory paper is divided into three independent units. The question paper is divided into three parts, Part –A, Part-B and Part-C
2. Part-A (20 marks) is compulsory and contains 10 questions (20 words), at least three questions from each unit, each question of 2 marks.
3. Part-B (20 marks) is compulsory and contains five questions, at least one from each unit. Candidate is required to attempt all five questions. Each question is of 5 marks (50 words).
4. Part-C-(60 marks) contains six questions, two from each unit Candidate is required to attempt three questions one from each unit. Each question is of 20 marks (400 words)

Course Contents :

Unit – I

India in the context of south-east and south Asia; a land of diversities; unity within diversities.

Physiographic regions, geological structure, drainage systems, soils, vegetation, origin and mechanism of Indian monsoon, climatic classifications, identification of drought and flood prone areas. Inter-Linking of Rivers.

Population - distribution, density, growth, population problems and policies, tribal areas and their problems, Gender discrimination and empowerment of women.

Unit – II

Resources – conservation and utilization of land, mineral, water, biotic and marine resources, Agriculture land use pattern, Agro-climatic Zone, green revolution and its impact of Indian Agriculture. Agriculture infrastructure – irrigation, fertilizers and seeds. Dry zone Agriculture, Industry- factors of localization, classification, detailed study of the following – iron & steel, cement, fertilizer, paper and pulp and sugar industries, study of the network of roadways, SwarnimChaturbhujBharatmalaYojna, Railways - DFCCIL, Airways and Waterways, SagarmalaPariyojna. Regional disparities of development in India.

Basis of regional planning divisions of India – macro and meso regions of India and their comparative analysis, Regional planning of rural and urban regions.

Unit – III

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 with these heads – physical, social & cultural environment and economic development : (1) Marusthali (2) Aravali (3) Bangar (4) Hadoti Plateau. Status of women in Rajasthan – changing aspects of demographic, social, economic, health and nutrition. Regional disparities in development in Rajasthan and suggestions.

Books Recommended :

1. Govt. of India : Five Year Plans of India.
2. Sharma & Coutino : Economic and Commercial Geography of India, Vikas, Delhi,
3. निगम एम.एन. : राजस्थानकाभूगोल, राजस्थानहिन्दीग्रन्थ अकादमी, जयपुर।
4. भल्ला, एल.आर. : राजस्थानकाभूगोल, कुलदीपप्रकाशन, जयपुर।
5. शर्मा, एच.एस. : राजस्थानकाभूगोल, पंचशीलप्रकाशन, जयपुर।
6. Singh, R.L. : India-A Regional Geography N.G.S.I. Varanasi, 1971.
7. Galyna and SenGupta : Economic Regions and Regionalisation in India, 1968.
8. Choudary, M.R. : Indian Industries Development and Location,
9. Spate, O.H.K. : geography of India and Pakistan, Methuen & Co, London.
10. Krishna, M.S. : Geology of India and Burma, Law Journal Office, Madras.
11. Kumar, L.S.S. and other : Agriculture in India – Vol.I& II, Asia Publishing House, Bombay.
12. Indian Year Book (Latest_Edition) : Publication Division, Delhi.
13. Irrigation Atlas of India.
14. Chatterji, S.B. : Climatology of InaiClacutta University, Calcutta.
15. Sharma, T.R. : Location of industries of India, Hindi, Kitah, Bombay.
16. Gazetteers of India : Publication Division, New Delhi.

PAPER-VI : URBAN GEOGRAPHY

3hr. duration

Max.Marks

:100

Note :-

1. Each theory paper is divided into three independent units. The question paper is divided into three parts, Part –A, Part-B and Part-C
2. Part-A (20 marks) is compulsory and contains 10 questions (20 words), at least three questions from each unit, each question of 2 marks.
3. Part-B (20 marks) is compulsory and contains five questions, at least one from each unit. Candidate is required to attempt all five questions. Each question is of 5 marks (50 words).

4. Part-C-(60 marks) contains six questions, two from each unit Candidate is required to attempt three questions one from each unit. Each question is of 20 marks (400 words)

Course Contents :

Unit – I

Nature and scope of Urban Geography, Origin and growth of towns during ancient, Medieval and Modern period. Factors affecting the growth, site and situation, Chief characteristics of modern town – Conurbation and Megalopolis. Trends of Urbanizations in India since 1901. Spatial pattern and distribution of urban centers, Central Place Theory, Rank-size relationship.

Unit – II

Functional classification of cities, Urban economic base – the basis and non-basis concept, Urban hierarchy based on functions, Urban Morphology – Centrifugal and centripetal forces, Theories of urban growth and structure, Morphology of Indian cities and its comparison with western cities, Urban Land use- city core, commercial, residential and industrial areas.

Unit – III

Contemporary urban issues and problems, Urban policies, Urban Heat Island. City – Region Relationship – Umland, Rural-Urban fringe, suburbs, satellite town, Green Belt, Garden city, Principles of town planning, Smart city, Principles of Regional Planning, Master Plan – preparation, implementation, obstacles. Detail Study of Jaipur City.

Books Recommended:

1. Taylor, G. : Urban Geography Mathuen & 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, Hutchinson, University Library, London.
5. Dickinson, R.E. : City Region and Regionalism, Routedledge and Kegan 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 Secunderabad Twin City – Studies in Urban Geography, Allied Publishers, Delhi.
9. Singh, R.L. : Bangalore and Urban Survey, National Geographical Society of India, B.H.U., Varanasi.
10. Sovani, N.V. : Urbanization and India, Asia Publishing House, Bombay.
11. Hudson, E.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 Arnold, London, 1972.
16. Northan, R.C. : Urban Geography, John Willey & Sons, New York, 1976.
17. Gribbs, J.P. : Urban Research Method, Von Nostrand Co. Inc. Toronto, 1961.
18. जोशी, रतन : नगरीय भूगोल, राजस्थानहिन्दीग्रन्थअकादमी, जयपुर।
19. ओमप्रकाश सिंह : नगरीय भूगोल।
20. बंसल : नगरीय भूगोल।

PAPER-VII : Anyone of the Following
PAPER – VII (a) : BIO-GEOGRAPHY

3hr. duration
:100

Max.Marks

Note :-

1. Each theory paper is divided into three independent units. The question paper is divided into three parts, Part –A, Part-B and Part-C
2. Part-A (20 marks) is compulsory and contains 10 questions (20 words), at least three questions from each unit, each question of 2 marks.
3. Part-B (20 marks) is compulsory and contains five questions, at least one from each unit. Candidate is required to attempt all five questions. Each question is of 5 marks (50 words).
4. Part-C-(60 marks) contains six questions, two from each unit Candidate is required to attempt three questions one from each unit. Each question is of 20 marks (400 words)

Course Contents :

Unit – I

Meaning and scope of Bio-Geography, History of Zoo-Geography, Plant Geography.Ecology and Habitat, the habitat factors, Climatic factors, plant response to environment, Barriers to distribution and means of dispersal of plants. Types of Plant Communities in general, factors controlling forest distribution. Characteristics of equatorial and temperate forests and grasslands, their distribution.

Climatic change and their effect on the plant cover, conditions of existence for animals.

Unit – II

Barriers to distribution and means of dispersal of animals. Types of Isolation, effect of geographic Isolation, Distribution of animals. The Zoo-Geographical regions.Phyto-Geographical Region.Biodiversity-types, value, levels, hotspots, threats and conservation.

Aquatic environment and life, marine and fresh water fauna.Vegetation and floral regions of India, economic importance.Pollution & its effect on wild life and vegetation.

Unit – III

Brief Study of following National and International Programs and Polices:RAMSAR Convention on Wetlands, G-20, Kyoto Protocol, Convention on biological diversity (CBD), Man and Biosphere (MAB) Programme of UNESCO, Stockholm Convention (1972), Agenda 21, Vienna Convention for the Protection of the Ozone Layer(1985), Montreal Protocol (1987), Convention on International Trade in Endangered Species (CITES, 1973), Environmental Impact Assessment (EIA).

Detailed Study of the following: Wildlife (Protection) Act 1972, Project Tiger (1973), Environment Protection Act (1986), Biological Diversity Act (2002), National Environment Policy (2006), , Rajasthan State Environment Policy (2010).

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. Hora, S.L. : Fundamental Conception of Zoo-Geography. N.G.S.I. Banaras.
7. Hora, S.L. :Torrestial Fishes and the Significance of their Distribution in Geographical Studies, N.G.S.J.,Banaras.
8. Mathur, H.S. : Bio-Geography.
9. जोशी, रतन : जैवभूगोल एवंजैवविविधता, राजस्थानहिन्दीग्रन्थअकादमी, जयपुर।

PAPER-VII (b) : AGRICULTURAL GEOGRAPHY

3hr. duration

Max.Marks

:100

Note : -

1. Each theory paper is divided into three independent units. The question paper is divided into three parts, Part –A, Part-B and Part-C
2. Part – A (20 marks) is compulsory and contains 10 question (20 words), at least three questions from each unit, each question is of 2 marks.
3. Part – B (20 marks) is compulsory and contains four questions, at least one from each unit. Candidate is required to attempt all four questions. Each question is of 5 marks (50 words).

4. Part – C (60 marks) contains six question, two from each unit. Candidate is required to attempt three questions from each unit. Each question is of 20 marks (400 words).

Course Contents :

Unit – I

Nature, scope, significance and development of agricultural geography. Approaches to the study of agricultural geography: Commodity, systematic and regional. Origin and dispersal of agriculture. Sources of agricultural data. Determinants of agricultural land use – Physical, economic, social, and technological. Land holding and land tenure systems, Land reforms, land use policy and planning. Agro-climatic Zone

Unit – II

Selected agricultural concepts and their measurements: cropping pattern, crop-concentration, intensity of cropping, degree of commercialization, diversification and specialization, efficiency and productivity , crop combination regions and agricultural development. Determinants of Agriculture and Productivity. Theories of agricultural location based on several multi-dimensioned factors: Von Thunen's theory of agricultural location and its recent modifications, Whittelsey's classification of agricultural regions, land use and land capability. Agricultural Systems of the World.

Unit – III

Agriculture in India – Land use and shifting cropping pattern. Regional pattern of productivity in India. Green Revolution, White Revolution, Food deficit and Food surplus regions, nutritional index. Specific problems in Indian agriculture and their management and planning. Agricultural Policy in India.

Contemporary issues; Food, nutrition, hunger, drought and food security, food aid programmes; environmental degradation: role of irrigation, fertilizers, insecticides and pesticides, technological know-how. Employment in the agricultural sector: landless Feminization, children, occupational health and agricultural activates. Agriculture Export Policy.

Books Recommended :

1. Gregor, H.P. : Geography of Agriculture, Prentice Hall, New York, 1970.
2. Grigg, D.B. : the Agricultural Systems of the World. Combridge University Press, New York, 1974.
3. Manmon, A.M. : Agriculture and Environment Changs, Jhn Wiley, Londoan, 1995.
4. Morgan W.B. and Norton, R.J.C. : Agricultural Geography. Mathuuesn London, 1971.
5. Morgan, W.B. : Agriculture in the Third World – A Spatial Analysis Westview Press, Boulder, 1978.
6. Sauer, C.O. : Agricultural Origins and Dispersals, M.L.T. Press, Mass, U.S.A., 1969.

7. Singh, J. and Dhillon, S.S. : Agricultural Geography. Tata McGraw Hill Pub, New Delhi, 1988.
8. Tarrant, J.R. : Agricultural Geography. Wiley, New York, 1974.
9. Stamps, L.D. Kostrowiskie : Land Britain, Issues and Misuses, World Types of Agriculture, Polish Academy, Warsaw.
10. Shafi, M. : Land Use in Eastern U.P., Aligarh University Press.
11. Ali Mohammed : Situation of Agriculture Development in India, Concept Publicatin Co., Delhi.
12. SymonLeslie : Agricultural Geography, G.Bell and Sons, Ltd, London, 1967.
13. प्रमिलाकुमार : कृषिभूगोल, मध्य प्रदेशहिन्दीअकादमी।
14. सिंह, ब्रजभूषण : कृषिभूगोल, गोरखपुर

PAPER-VII (c) :POPULATION GEOGRAPHY

3hr. duration

Max.Marks

:100

Note :-

1. Each theory paper is divided into three independent units. The question paper is divided into three parts, Part –A, Part-B and Part-C
2. Part-A (20 marks) is compulsory and contains 10 questions (20 words), at least three questions from each unit, each question of 2 marks.
3. Part-B (20 marks) is compulsory and contains five questions, at least one from each unit. Candidate is required to attempt all five questions. Each question is of 5 marks (50 words).
4. Part-C-(60 marks) contains six questions, two from each unit Candidate is required to attempt three questions one from each unit. Each question is of 20 marks (400 words)

Course Contents :

Unit – I

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

Unit – II

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

Unit – III

India – population characteristics and relationship with development : population control movement and policies : urbanization and population explosion; post-independence development – reproductive and child health programme, contemporary issues – ageing of population; declining sex ratio; hiv/aids.

Books Recommended :

1. Chandra, R.C. : Population Geography. Kalyani Publishers, Delhi.
2. Garnier, J.B. : Geography of Population. Longman, U.K.
3. Hassan, M.I. : Population Geography. Rawat Publication, Jaipur.
4. Newbold, K.B. : Population Geography Tools and issues, Rowman& Littlefield Publications, London.
5. Woods, R. : Theoretical Population Geography. Longman, U.K.

PAPER-VIII (a) : POLITICAL GEOGRAPHY

3hr. duration

Max.Marks

:100

Note :-

1. Each theory paper is divided into three independent units. The question paper is divided into three parts, Part –A, Part-B and Part-C
2. Part-A (20 marks) is compulsory and contains 10 questions (20 words), at least three questions from each unit, each question of 2 marks.
3. Part-B (20 marks) is compulsory and contains five questions, at least one from each unit. Candidate is required to attempt all five questions. Each question is of 5 marks (50 words).
4. Part-C-(60 marks) contains six questions, two from each unit Candidate is required to attempt three questions one from each unit. Each question is of 20 marks (400 words)

Course Contents :

Unit – I

Definition, nature, scope, subject matter and recent development in political geography; approach, to study; major schools of thought. Political Geography and Geopolitics, Changing nature of international and national terrorism. Geographic Elements and the State : Physical Elements; Human elements; Economic elements.

Unit – II

Themes in Political Geography : State, Nation, Nation-state and Nation Building, Frontiers and boundaries, Colonialism Neocolonialism, Federalism and other forms of governance. The

changing patterns of World Powers Perspectives on core-periphery concept, Conflicts and cooperation.

Geopolitical significance of India ocean : Political geography of SAARC Region.

Unit – III

Political geography of contemporary India with special reference to: The changing political map of India; Unity-diversity; centripetal and centrifugal forces; stability & instability; Interstate issues (like water dispute & riverine claims) and conflict resolutions insurgency in Border States; Emergence of New States; Federal India : Unity in Diversity.

Election Geography : Nature, approaches, election in national perspective, voting behavior and voting system in India. World politics and international terrorism.

Books Recommended :

1. Alexander, L.M. : World Political Patterns, John Murray and Co., London.
2. Boggs, S.W. : International Boundaries, Columbia University Press, New York.
3. East, W.G. and Moodle A.E. : The Chanign World, George G. Harrap and Co., London.
4. East, W.G. and Spate, O.H.K. : The Changing Map of Asia, Methuen and Co., London.
5. Moodie, A.E. : Geography behind Politics, Hutchinson's University Library, Londoan.
6. Pearch, C.E., et.al. : World Political Geography, Thomas, Y.Crowel Co., New York.
7. Valkenburg, S.Y. & Suz. C.L. : Elements of Poltical Geography, Second Edition, Eastern Economy Edition Prentice Hall & Co.Ltd, New York.
8. S.B. Cohen : Geography and Politics and Geography Relationship, Prentice Hall, New York.
9. Blij, D.Jeo : Systematic Political Geography, John Willey & Sons, New York.
10. Bergiman. Edward E. : Modem Political geography, w.M.C. brown Company Publishers.
11. Dikshit, R.D. : Political Geography – A Contemporary Perspective, Tata McGraw Hill Publishing Co.Ltd., New Delhi.
12. Sukhwal, B.L. : India – A Political Geography, Allied Publishers, New Delhi.
13. भट्टाचार्य एवंआच्छा : राजनैतिकभूगोल, राजस्थानहिन्दीग्रथअकादमी ।
14. सक्सेना, हरिमोहन : राजनैतिकभूगोल, रस्तोगी एण्ड कम्पनी, मेरठ ।

PAPER-VIII (b) : INDUSTRIAL GEOGRAPHY

3hr. duration

Max.Marks

:100

Note :-

1. Each theory paper is divided into three independent units. The question paper is divided into three parts, Part –A, Part-B and Part-C
2. Part-A (20 marks) is compulsory and contains 10 questions (20 words), at least three questions from each unit, each question of 2 marks.
3. Part-B (20 marks) is compulsory and contains five questions, at least one from each unit. Candidate is required to attempt all five questions. Each question is of 5 marks (50 words).
4. Part-C-(60 marks) contains six questions, two from each unit Candidate is required to attempt three questions one from each unit. Each question is of 20 marks (400 words)

Course Contents :

Unit – I

Nature, scope and recent developments, elements and factors of localization of manufacturing industries : centralization and decentralization of industrial enterprises; horizontal, vertical and diagonal linkages of modern industries. Theories and models of industrial locatin : Weber, Losch, Isard and Hoover. Modern refinements to least-cost-theory; critical review and application of industrial location theories.

Unit – II

Distribution and spatial pattern of manufacturing industries – Iron and Steel, Aluminium, Copper, energy goods and automobiles; textiles, chemicals, petro-chemicals, Ship-building, Pulp and Paper, hardware and software industties. Methods of delineating manufacturing regions, major manufacturing regions of the worls.

Methods of measuring the spatial distribution of manufacturing industries; location quotient, co-efficient of geographic association, index of concentration, case studies on application of these methods.

Unit – III

Environmental degradation caused by manufacturing industries industrial hazards and occupational health. Impact of manufacuting industries on cconomic development; Role of globalization on manufacturing sector.

Shifting of industries and its impact on the urban fringe; changing industrial policy – need for integrated industial development.

Suggested Books :

1. Llyod and dicken :locatin in Space – A Theoretial Approach to Economic Geography.
2. M.C. Cart &LinbergHodder&Lee : Economic Geography.

3. Smit, D.E. Cox K.P. man : Industrial Locaion. A Economic Geographic analysis, Location and Behaviour – An Introductin to Human Geography.
4. Riley, RC. : Industrial Geography, 1973. Chalto and windus London.
5. Alexander, J.W. : Economic Geography, Prentice Hall, New Delhi.
6. Besoh : A Geography of World Economy.
7. Estall, RC. & Buchanan, RO. : Industrial Activity & Economic Geography Hutchinson Co,London.
8. Hoover, E.M. : The Location fo Economic Activity, MCGraw Hill Books Co., New York.
9. Choudhary, M.R. : Industrial Geography of India.

PAPER-VIII (c) : REMOTE SENSING AND GIS

3hr. duration

Max.Marks

:100

Note :-

1. Each theory paper is divided into three independent units. The question paper is divided into three parts, Part –A, Part-B and Part-C
2. Part-A (20 marks) is compulsory and contains 10 questions (20 words), at least three questions from each unit, each question of 2 marks.
3. Part-B (20 marks) is compulsory and contains five questions, at least one from each unit. Candidate is required to attempt all five questions. Each question is of 5 marks (50 words).
4. Part-C-(60 marks) contains six questions, two from each unit Candidate is required to attempt three questions one from each unit. Each question is of 20 marks (400 words)

Course Contents :

Unit – I

Historical development of Remote Sensing technology. Relevance of remote sensing in Geography, Concepts and basics: Energy source, energy and radiation, principles, energy interactions in the atmosphere and earth surface features. Remote sensing systems: platforms, sensors and radiation records. Air photos and photogrammetry : Elements of photographic system : type, scales and ground coverage, resolution, radiometric characteristics, films, filters, aerial cameras, film exposures, geometric fundamentals of photogrammetry : elements of vertical photographs, relief displacement, image parallax, stereoscopic, ortho-photos. Air photo interpretation : shape, size, pattern tone, texture, shadows, site advantage and limitation & remote sensing & its comparison with map.

Unit – II

Satellite Remote Sensing: History and development of various types of satellite and space programme. Image, processing: types of imagery, techniques of visual interpretation, ground verification, transfer of interpreted thematic information of maps; Digital processing: rectification and resolution, Image enhancement-contrast manipulation, classification supervised and unsupervised, post classification analysis.

Unit – III

Applications: Air photo and image interpretations and mapping forest and wild life, mines & geology, geomorphology photo.

Land use and land cover soil, land evaluation; weather studies water resources; hazard management and environmental management. GIS introduction, definition & scope, its application in various fields & planning.

Books Recommended :

1. American Society of photogrammetry : Manual of Remote Sensing. ASP, Falls Church, VA 1983. Vol. I,II.
2. Barrett, E.C. and L.F. Curtis : Fundamentals of Remote Sensing and Air Photo interpretation, McMillan, New York, 1992.
3. Compbell, J.: Introduction of Remote Sensing, Guilford, New York, 1989.
4. Curran, P.J. : Principles of Remote Sensing, Longman, London, 1985.
5. Hord, R.M. : Digital Image Processing of Remotely Sensed Data, Academic, New York, 1989.
6. Luder, D. : Aerial Photography Interpretation : Principles and Application, McGraw Hill, New York, 1959.
7. Pratt, W.K. : Digital Image Processing. Willey, New York, 1978.
8. Rao, D.P. (eds.) : Remote Sensing for Earth Resources, Association of Exploration Geophysicist, Hyderabad, 1998.
9. Thomas, M. Lilies and Ralph, W.Kefer : Remote Sensing and Image Interpretation John Willey & sons, New York, 1994.
10. Chouhan, T.S. & Joshi, K.N. : Applied R.S. and Photo Interpretation, VigyanPrakashan, Jodhpur.
11. Wolf, Paul, K. : Elements of Photogrammetry, McGraw Hill Book Co.
12. Gautam, N.C. SPGU. Technology of Geography, N.R.S.A., Hyderabad.
13. Singh, S. : Remote Sensing Technology, Sa-Publication Jodhpur.
14. Barrett, E.C. and L.F. Curtis : Fundamentals of Remote Sensing and Air Photo Interpretation, McMillan, New York, 1992.
15. Rao, D.P. (eds) : Remote Sensing for Earth Resources, Association of Exploration Geophysicists, Hyderabad, 1998.

Dissertation on Geographical Problem (In lieu of Paper VII & VIII)

N.B. : The candidates offering this paper will be required to submit dissertation at least two weeks before the commencement of the theory examination. 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 faculty members will be able to supervise maximum two candidates for dissertation.

The volume of the dissertation should be about 110-115 pages.

GEOGRAPHY PRACTICAL-FINAL

1. Written Test on Lab. Work	For Hrs. (4 Qs.)	40 Marks
2. Record Work and Viva-Voce.	(14+6)	20 Marks
3. Field Survey and Viva-Voce.	For Hrs. (14+6)	20 Marks
4. Camp Work and Viva-Voce.	7 Days (14+6)	20 Marks
Total		100 Marks

Note : Student will have to attempt four questions out of six questions in written paper of Practical Examination.

Course Contents :

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) Block diagrams, field sketching, serial profile, hypsographic curves altimetry frequency graphs.
3. Interpretation of topographical maps :

A brief history of topographical maps of the world with special reference of India and their interpretation, detailed study of such toposheets which depict typical geomorphology and cultural landscapes.
4. Air photo interpretation and exercise on the determination of height of plan, parallax, number of runs and number of photographs, knowledge of stereoscopic vision, mosaics; types of cameras, emulsions and stereoscopes. GIS Introduction Definition and Scope, its application in various field and Planning .
5. Remote sensing and GIS : Use and importance of air photos; Historical development, space programmes in India; GIS-meaning, definition, importance.
6. Field Surveying -
 - a. Theodilite : Its parts and function, use of traverse, computation independent coordinates.
 - b. Plane table and clinometers - Small area surveys. Traverse, resectioning : two and three point problems.
 - c. Dumpy level - Classification of leveling. Profile, precise and other types of leveling. Practical countouring cross sectioning
 - d. Abeny level - Use and application of.
7. Camp Work : A topographical survey of a settlement of about 500 acres of land will be done by organizing a camp at least for a week away from the centre of the institution and

maps and reports of the same will be prepared. (student are expected to stay in the camp at night)

Books Recommended :

2. Kanethkar, T.P. and Kukkarni, S.V. :Surveying and Leveling Vol. I (A.V. GriaPrakash, Poona)
3. Deshpande, R.S. : A text book of surveying and leveling. (United Book Corporation, Pona).
4. James Clending : Principles and use of surveying (Blackie and Sons Ltd. Glasgow).
5. B.C. Punmia : Surveying and Field Work Vol. I (Standard Book Depot, Delhi)