

**U.G.C. Model Curriculum  
GEOGRAPHY  
MA/MSc. Previous**

Those who offered geography as one of the optional subjects at B.A./B.Sc. may be admitted to M.A. Geography course. No one is allowed as private candidate.

There shall be four theory papers carrying 100 marks each and one general practical of 100 marks divided into two parts (A) Cartography. (B) Field cum-lab work. A candidate has to pass separately both in theory and practical papers.

**MA/MSc PREVIOUS**

**Paper I**

**GEOMORPHOLOGY**

**M.M. 100**

**Note:** Candidates will have to attempt any four questions selecting one from each unit.

**Unit I**

Meaning and scope of Geomorphology. Fundamental concepts. Modern geomorphologists- Hutton, Davis, Penck, Strahler and King. Geomorphology in India. Recent Trends in Geomorphology.

**Unit II**

Isostasy, Drifting of continents; plate tectonics, the role of geological structure, climatic and biotic factors in formation of landscape; theories of land form development.

**Unit III**

The concept of cycle of erosion, interruption in the cycle and

polycyclic relief, landscape development in Humid, Arid, Karst, Glacial, Periglacial and Coastal regions.

**Unit IV**

Morphometric techniques, Evolution of slopes, erosion surfaces, applied geomorphology. Study of Micro land forms of the following regions-Chotanagpur region, Son basin and Uttaranchal Region.

**Suggested Readings :**

- 1- Chorley, R.J. : Spatial Analysis in Geomorphology, Methuen London, 1972.
- 2- Cooke, R.U. and Doornkamp, C.: Geomorphology in Environmental Management: A Introduction, Clarendon press, Oxford, 1974.
- 3- Goudie, A. The Nature of the Environment, Oxford and Blackwell London, 1995.
- 4- Stoddart, D.R. : (ed) Process and Form in Geomorphology, Routledge N.Y. 1996.
- 5- Skinner, B.J. and Porter S.C. : The Dynamic Earth, John Wiley, N.Y., 1995.
- 6- Sharma, H.S. (ed); Perspectives in Geomorphology, Concepts, New Delhi, 1980.
- 7- Singh, S: Geomorphology, Prayag Pustakalaya, Allahabad, 1998.
- 8- Thornbury, W.D. : Principles of Geomorphology, John Wiley N.Y., 1960.

**Pedagogy :**

Geomorphology is essentially a field science therefore students be taken to the field for effective understanding of geomorphic forms and processes. Department must have good geomorphic lab. equipped with photographs of landforms of various climatic regions and toposheets of S.O.I.

**MAMSc PREVIOUS  
Paper II  
GEOGRAPHY  
ENVIRONMENTAL GEOGRAPHY**

**M.M. 100**

**Note :** Candidates will have to attempt any four questions selecting one from each unit.

**Unit I**

Geography as study of environment. Meaning, scope, concepts and approaches of environmental geography. Environment and society. Concept of ecology and ecosystem. Biosphere as an ecosystem. Abiotic and biotic components of biosphere and ecosystem. Ecological production and energy flow-Ecological production, trophic level, food chain and food web, ecological pyramids, energy flow. Bio-geo-chemical cycles-Hydrological cycle, Carbon cycle, Oxygen cycle, Nitrogen cycle, Phosphorous cycle and Sediment cycle.

**Unit II**

Soil profiles and soil formation, Vertical stratification and succession of plants. Classification and characteristics of biomes. Global climatic changes. Human influence on radiation. Creation, depletion and maintenance of ozone layer, Green house effect, man and environmental process-man and weathering, man and erosion, soil erosion and sedimentation.

**Unit III**

Environmental deterioration-Natural hazards-floods, siltation, drought, earthquake, landslide, Volcanic eruption, desert spread, nuclear energy. Man made hazards; urbanisation and industrialization as environmental problems. Pollutants and sources and types of pollution-air, water, soil, noise, economic, social and cultural pollution. Global warming.

**Unit IV**

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Environmental perception- Human health, ecological effects, urbanisation, industrialization and environmental degradation, problems of industrial waste disposal. Modern technological development. Environmental monitoring and management-ecological, economic and social management. Environmental impact assessment-case studies with special reference to India. Control of environmental degradation and pollution. Environmental planning at national, regional and local levels.

**Suggested Readings-**

- 1- Strahler, A.N. and Strahler A.H. : Geography and Man's Environment, John Wiley & Sons, New York., 1976.
- 2- Delwyler, T.R. : Man's Impact on the Environment, McGraw Hill. N.Y.
- 3- Clapham, W.B.: Natural Ecosystem, MacMillan, London, 1973.
- 4- Dassman, R.F.: Environmental Conservation, John Wiley, N.Y., 1976.
- 5- Singh, S.; Environmental Geography (English & Hindi), Prayag Pustakalaya, Alld., 1998.
- 6- Tivy: Biogeography, Longman, London, 1982.

**Pedagogy**

Audio-visual aids will help the students to understand plant species, soil erosion, environmental hazards and degradation. There must be more interaction between teacher and students on different aspects of ecology with the help of models, charts, and pictures.

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MAMMC PREVIOUS  
Paper III  
ECONOMIC GEOGRAPHY

M.M. 100

Note : Candidates will have to attempt any four questions selecting one from each unit.

Unit I

Meaning, scope, evolution and recent trends of economic geography, fundamental concepts. Relation of economic geography with economics and other branches of social sciences, location of economic activities and spatial organisation of economies. Sectors of economy (Primary, secondary and tertiary).

Unit II

Concept of resources, resource classification and conservation, human resources, water resources, biotic resources, mineral and power resources. Factors of location of economic activities-physical, social, economic and cultural. Von-Thunen's model of agricultural location and its modifications. Concept and techniques of delimitation of agricultural regions. Agricultural regions of the world.

Unit III

Classification of Industries : Resourcebased and footloose industries. Theories of industrial location-Weber, Losch, Isard and Hoover. Case studies of selected industries. Iron and steel, Textiles, Sugar, Engineering, Petro-Chemicals and chemical. Industrial regions-delimitation and structural factors. Industrial regions of the world.

Unit IV

Models of transportation and transport cost; accessibility and connectivity, comparative cost advantages. Theories of transport and transport systems of the world. Economic regions and their salient features. Impact of WTO, Globalization, Liberalization on the economy of developing world.

Suggested Readings :

- 1- Chatterjee S.P. : Economic Geography of Asia, Allied Book, Agency, Calcutta, 1984.
- 2- Chorley R.J. and Hagget, P. (ed) Network Analysis in Geography, Arnold, 1969.
- 3- Jones C.F. and Darkenwald G.G. : Economic Geography, McMillan Co. N.Y., 1975.
- 4- Millar E: Geography of Manufacturing, Prentice Hall, N.Y., 1962.
- 5- Raza M and Agrawal Y: Transport Geography of India, Concepts, New Delhi, 1986.
- 6- Smith, D.M. : Industrial location: An Economic Geographical Analysis, John Wiley, N.Y. 1971.
- 7- Thomas, R.S.: The Geography of Economic Activities, McGraw Hill, N.Y., 1962.

Padagogy

The students should be taken to the field to identify the economic activities practiced by people-may be in agriculture, industry, trade and commerce. The factors of localization may be explained to the students citing local examples. The students should be motivated to interact with the teacher to identify economic activities of the people residing in different parts of the world.

**M/MSc PREVIOUS  
Paper IV**

**REGIONAL GEOGRAPHY OF INDIA**

**M.M. 100**

**Note :** Candidates will have to attempt any four questions selecting one from each unit.

**Unit I**

Structure and structural regions, physiographic regions. Himalayan Orography, Indian monsoon and climatic regions, Agricultural landuse and agricultural regionalization, white, Green and blue revolutions and their impacts. Industrial base and Industrial Regions.

**Unit II**

Basis of regionalisation-Geopolitical, climatic, agro-climatic, physiographic; historical, demographic, socio-economic dimensions of regionalisation. Bases and efforts of regionalisation of India. Macro, Meso and Micro geographical regions of India.

**Unit III**

Detailed geographical study of the following regions-Middle Ganga plain, Kashmir region, Assam valley, Thar desert region, Chotanagpur region, Malabar Coast region, Chhatisgarh region, Sundarbans delta region.

**Unit IV**

Impact of five year plans on development, population problems and population regions, Regions and regional development, planning regions, urbanisation and metropolitan regions. Impact of W.T.O., liberalisation and globalization. Environmental issues in regional development and planning.

**Suggested Readings :**

- 1 - Centre for Science and Environment, State of India's Environment, New Delhi, 1988.

- 2- Deshpande, C.D.: India: A Regional Interpretation, ICSSR and Northern Book Centre, 1992.
- 3- Dreze, Jean and Amartyasen (ed); India: Economic Development and Social Opportunity, Oxford University Press, New Delhi, 1996.
- 4- Kundu A, Raza M: Indian Economy: The Regional Dimension, Spectrum Publishers, New Delhi, 1982.
- 5- Singh, R.L. (ed) : India : A Regional Geography, National Geographical Society, India, Varanasi, 1971.
- 6- Spate, O.H.K. and Learmonth, A.T.A: India and Pakistan, Methuen, London, 1967.
- 7- Tirtha R. and Gopal Krishna: Emerging India, Reprinted by Rawat Publications, Jaipur, 1996.

**Pedagogy**

- 1- Students should be involved in class room discussions and exercises on region as reported in the print and the visuals.
- 2- Visits to local regions of interest should be undertaken to study the spatial and functional contiguity, process of development and transformation.
- 3- The assignments on regions to be followed by seminars and brain storming sessions.

**M/MSc PREVIOUS  
GENERAL PRACTICALS**

The practical examination shall be conducted in two parts carrying 50 marks each. Log-tables will be allowed in both the parts.

- (A) Cartographic work
- (B) Field-cum-lab work

A common paper shall be set related to cartographic work and the examination shall be held in geographic labs of the centres concerned. The necessary materials and equipments indicated in the paper will be provided by the geography lab.

The examination related to section (B) shall be conducted by a board of two examiners of which one examiner shall be external.

**Part A  
CARTOGRAPHIC WORK**

**M.M. 50**

**Unit I**

**Statistical methods-**

**-20**

Measures of dispersion, standard deviation, normal frequency distribution curve and its characteristics, Co-efficient of correlation and regression; sampling method-random, stratified, systematic and cluster; Tests of significance-chisquare test and student's t-test.

**Unit II**

**Geological Maps**

**-20**

Drawing and interpretation of Geological cross-sections and maps- Inclined, folded, faulted and unconformable structures, igneous intrusions.

**Unit III**

**Block Diagrams**

**-10**

**Part B  
FIELD- CUM-LAB-WORK**

**Unit I**

**Air photo interpretation**

**-15**

**Unit II**

**Study Tour**

**-15**

**Unit III**

**Record and Viva-Voce examination**

**-20**

**Specific Instruction :**

- 1- The Ta/DA and related experiences to teachers and supporting staff on tour duty shall be met by the representative institutions.
- 2- Normally two teachers and one attendant will accompany the tour party.

## MAM/Sc FINAL

The course shall consist of the following three parts-

- 1- Two compulsory papers each of three hours duration and 100 marks.
- 2- General practical of 100 marks divided into two parts-  
(A) Cartographic work and (B) Field cum lab work of 50 marks each.
- 3- Two optional papers-Candidates will have to select any two optional papers out of the 10 optional papers. There will be no group of optional papers and a candidate will be free to select any two optional papers. Each optional paper will consist of one theory paper of 60 marks and three hours duration and optional practical carrying 40 marks concerning the theory paper.  
A candidate obtaining more than 55% marks in M.A. Previous may offer a dissertation on a topic assigned by the incharge of the department concerned in lieu of one of the optional papers offered.  
The dissertation shall carry 100 marks and a candidate shall be exempted from the practical of the paper concerned.  
The dissertation must be received in the examination office of the university within a month after the last date of the regular theory examination. The dissertation shall be examined by two examiners out of which one shall be external and another shall be the supervisor of the candidate. Both shall examine the dissertation out of 50 marks and the total of marks awarded by both the examiners shall be taken as the final mark of the dissertation. If the difference of awarded marks by external and internal examiners happens to be more than 20% the dissertation shall be referred to a third examiner.  
The candidate must pass in theory as well as the practical/ dissertation of each part separately obtaining atleast 36% marks in

each group.

## MAM/Sc FINAL Paper I (Compulsory) GEOGRAPHICAL THOUGHT

M.M. 100

**Note:** Candidates will have to attempt any four questions selecting one from each unit.

### Unit I

The field of Geography and its place in the classification of sciences. Changing definitions of Geography. German-French school- contributions of Humboldt, Ritter, Ratzel, Richthofen, Albrecht Penck, Hettner, Otloschluter, Blache, Brunhes, Demongeon and Demarionnee.

### Unit II

Anglo-American school : Contributions of Mackinder, Herbertson, Davis, Semple, Bowman, Huntington, Hartshorne and Sauer, Russian contribution, geography in modern India

### Unit III

Dualism in geography: systematic vs. regional geography, physical vs. human geography; Trends and approaches in modern geography: Concepts of areal differentiation, Earth surface, Landscape- physical and cultural, Region and regionalization, regional typology, spatial organisation.

### Unit IV

Laws, theories and models in geography: The quantitative revolution, man-environment system, responses to positivism, behaviourism and post modernism, Radical geography, Scientific explanation types and methods. System, analogue, model and paradigm, Aerial photographs and remote sensing, Geographic information system (GIS), Future of Geography.

**MA/MSc FINAL**

**Paper II (Compulsory)**

**CLIMATOLOGY AND HYDROLOGY**

**M.M. 100**

**Suggested Readings :**

- 1- Abler Ronald, Adams, John S. Gould Peter: Spatial Organisation: The Geographer's View of the World, Prentice Hall, N.J., 1971.
  - 2- Amedeo, Douglas: An Introduction to Scientific Reasoning in Geography, John Wiley, USA, 1971.
  - 3- Dikshit, R.D. : (ed) The Art and Science of Geography: Integrated Readings, Prentice Hall of India, New Delhi, 1994.
  - 4- Hartshorn, R: Perspectives on the Nature of Geography, Rand McNally & Co, 1959.
  - 5- Husain, M: Evolution of Geographical Thought, Rawat Pub, Jaipur, 1984.
  - 6- James, P.E.: All Possible World : A History of Geographical Ideas, Sachin publication, Jaipur, 1980.
  - 7- Johnston, R.J: Philosophy and Human Geography, Edward Arnold, London, 1988.
  - 8- Johnston, R.J: The Future of Geography, Methuen, London, 1988.
  - 9- Minshull, R: The Changing Nature of Geography, Hutchinson University Library, London, 1970.
- Pedagogy**
- 1- Students of Geography may be encouraged to interact with their counter parts from other disciplines and discuss the nature of their subject.
  - 2- The students may be encouraged to collect information amenable to geographical interpretation.

**Note:** Candidates will have to attempt any four questions selecting one from each unit.

**Unit I**

Definition, scope and evolution of climatology and its relationship with meteorology; Composition, mass and structure of the atmosphere, insolation, process of heating and cooling, heat balance of the earth and atmosphere, green house effect. Pressure and pressure belts, atmospheric motion, Forces controlling motion of air, vertical motion and vorticity, Jet stream, permanent, seasonal and local winds.

**Unit II**

Concepts, classification, characteristics of air masses and front. Ocean atmospheric interaction-El Nino, Southern Oscillation (ENSO) and La Nina, climatic classification of Koppen, and Thornthwaite. Climatic changes: evidences and possible causes, global warming. Applied climatology and weather forecasting.

**(B) Hydrology**

**Unit III**

Definition and scope of hydrology, hydrological cycle and its subcycles, elements of hydrological cycle; precipitation intensity and duration, infiltration, surface run off and urban flooding, man's interference on hydrological cycle, human impact on hydrological system of drainage basins. Factors affecting evaporation, transpiration, potential and actual evapo-transpiration-their measurement and computation.

**Unit IV**

Sub-surface water, soil moisture, ground water-occurrence, storage,

MA/MSc FINAL  
**CARTOGRAPHY (GENERAL PRACTICALS)**

The practical examination shall be conducted in two parts carrying 50 marks each. Log-tables will be allowed in both the parts.

(A) Cartographic work and (B) Field-cum-lab work. A common paper shall be set related to part (A) and the examination shall be conducted in the geography labs of the centres concerned. The necessary materials and equipments indicated in the paper shall be provided by the geography lab.

The examination related to part (B) shall be conducted by a board of two examiners of which one examiner shall be external.

**Part (A)**  
**CARTOGRAPHIC WORK**  
**Paper III (Compulsory)**

**M.M. 50**

**Unit I**

**Map projections : -20**

Classification, properties, choice, merits and demerits of projections. Drawing of the following map projections by using mathematical methods : Gall's, Mercator's, Equatorial cases of Gnomonic, Stereographic and Orthographic projections, Mollweide's and interrupted Mollweide's projection, Sinusoidal and Interrupted sinusoidal projection. Lambert's Conical equal area Projection and International Projection.

**Unit II**

**Cartographic Representation of statistical Data -20**

Water surplus graph, Rainfall dispersion diagram, Traffic flow cartogram, Distribution maps-isopleth, choropleth and multiple Dots, landuse maps, Locational quotient, Co-efficient of localization and localization curve.

movement, recharge and discharge, water table fluctuation and safe yield. The global water budget. Principles and determination of water balance and its application in crop production. Water pollution; Applied hydrology.

**Suggested Readings :**

- 1- Barry R.G. and Chorley R.J. : Atmosphere, Weather and Climate, Routledge, London and New York, 1998.
  - 2- Critchfield, J.H. : General Climatology, Prentice Hall, New Delhi, 1993.
  - 3- Lal, D.S: Climatology, Chaitanya Publications, Allahabad, 1986.
  - 4- Lydolph, P.E.: The Climate of the Earth, Rowman, 1985.
  - 5- Robinson P.J. and Henderson S: Contemporary Climatology, Henlow, 1999.
  - 6- Upadhyaya D.P., and Singh R.A.: Climatology and Hydrology, Vasundhara Publication, Gorakhpur, 2000(Hindi).
  - 7- Addison H: Land, Water and Flood, Chapman and Hall, London, 1961.
  - 8- Chorley R.J.: Water, Earth and Man, Methuen, London, 1967.
  - 9- Jones J.A.A.: Global Hydrology: Process, Resources and Environmental Management, Longman, London, 1997.
  - 10- Todd, D.K. : Ground Water Hydrology, John Wiley, New York, 1959.
- Pedagogy :**
- 1- Weather and climatic maps and charts be made available to the students. Audio-Visual aids be used for effective teaching.
  - 2- Students to be taken on a field visit to nearby reservoir. Data pertaining to water table in the local wells in different seasons has to be collected.



Unit III

Plotting of field book data and solving problems

-10

Problems related to surveying-solving three point and two point problems, correction of bearing, removing closing error, plotting of readings obtained by prismatic compass and Dumpy level

Part B

FIELD-CUM-LAB WORK

M.M. 50

- 1- Project report -15
- 2- (A) Measuring horizontal and vertical angles by Theodolite -10
- (B) Measuring height by Sextant -5
- 3- Practical record -10
- 4- Viva-voce on Record -10

OPTIONAL PAPERS

The Candidate has to offer two optional papers consisting of one theory paper of 60 marks and practical of 40 marks each. The candidate has to answer any three questions from theory papers selecting atleast one from each unit. The examination of optional Practical will be conducted by a board of two examiners of which one shall be external.

MAM/MSc. FINAL

Paper IV

URBAN GEOGRAPHY

Note: Candidates will have to attempt any three questions selecting

Theory

-60

Unit I

Meaning, scope, approaches and evolution of urban geography. Attributes of urban places during ancient, medieval and modern period. Origin and growth of urban settlements. The models of urban growth: concentric zone, sectoral and multinuclei. Bases and process of Urbanisation and urban development, Urban growth, urban hierarchy and rank size rule, theories of urban growth: Christaller, Losch, Perroux and Bidouville.

Unit II

Urban economic base : Occupational structure and basic and non-basic functions, functional classification, morphology and land use structure-built up and non-built up, C.B.D. Commercial, residential, industrial and institutional areas, city-region relations and modern urban landscape. The urban profile, demographic structure and characteristics of urban population. Movement of population within and beyond corporate limit.

Unit III

City as central place, umland, Rural-Urban fringe, Urban problems-urban poverty, urban renewal, urban sprawl, slums, transportation, housing, urban pollution, solid waste, urban crime and environmental health. Urban policy and planning, development of medium sized towns, planning for new wards, city planning, green belt, garden cities, urban policy, Globalization and urban planning. Special study KAVVAL towns of U.P.

Practical

-40

- 1- Population projection and population Growth forecasting.

MA/MSc. FINAL  
Paper V  
**INDUSTRIAL GEOGRAPHY**

- 3- Study of master plans.
- 4- Study of morphology and functional classification of towns.
- 5- Town planning
- 6- Record and Viva-voce

**Suggested Readings-**

- 1- Berry B.J.L. and Horton F.F. : Geographic Perspectives on Urban Systems, Prentice Hall, Englewood cliffs, N.J. 1970.
  - 2- Dickinson, R.E. City and Region, Routledge, London, 1964.
  - 3- Gibbs, J.P.: Urban Research Methods, Van Nostrand Co Princeton, N.J. 1961.
  - 4- Hall P: Urban and Regional Planning, Routledge, London, 1992.
  - 5- Kundu, A: Urban Development and Urban Research in India, Khanna Publication, 1992.
  - 6- Rao, V.L. S.P. : Urbanisation In India: Spatial Dimensions, Concepts publishing Co. New Delhi.
  - 7- Smalies, A.E. : The Geography of Twons, Hutchinson, London, 1953.
- Pedagogy-**
- 1- Awareness to data sources should be highlighted in the class. This needs to be in the form of selected case studies.
  - 2- Study of urban morphology and urban functions with special reference to selected towns need to be encouraged.
  - 3- Atlases and maps of NATMO and Census should be consulted and students should be given opportunity to participate in discussion groups.

**Note :** Candidates will have to attempt any three questions selecting one from each unit.

**Theory**

-60

**Unit I**

Nature, Scope and recent developments. Elements and factors of localisation of industries, centralization and decentralization of industrial enterprises, horizontal, vertical and diagonal linkages of modern industries. Theories of Industrial location: webber, Losch, Isard and Hoover, Modern refinements in the theories of industrial location. Critical review and application of industrial location theories.

**Unit II**

Distribution and spatial pattern of industries; Iron-steel, energy goods and automobiles, textiles, chemicals, petro-chemicals, hardware and software industries. Methods of delineating industrial regions; major industrial regions of the world. Industrial system and industrial regions of India.

**Unit III**

Methods of measuring the spatial distribution of industries: location quotient, co-efficient of geographic association, index of concentration, coefficient of localization, case studies of application of these methods. Environmental problems caused by industries; industrial hazards and occupational health. Role of globalization on industrial sector. Changing industrial policy and industrial policy of India. Industrial planning as an integral part of regional planning.

**Practicals**

- 1- Comparative cost analysis for a given industry in a given region.

-40

MA/MSc. FINAL

Paper VI

AGRICULTURAL GEOGRAPHY

Note : Candidates will have to attempt any three questions selecting one from each unit.

-60-

- 2- Analysis of the spatial pattern of industries.
  - (A) Location quotient
  - (B) Isodapanes
  - (C) Practical exercises of different industrial location models.
- 3- Study of an industrial complex of India and determination of different kind of linkages.
- 4- Industrial planning in a given region based on given assumptions regarding resource distribution and infra-structure.
- 5- Practical record and Viva-voce

**Suggested Readings:**

- 1- Alexander, J.W.; Economic Geography, Prentice Hall, Englewood Cliffs, 1988.
- 2- Alexander, C: Geography of Manufacturing, Prentice Hall, Bombay, 1967.
- 3- Hoover, E.M.: The Location and Space Economy, McGraw Hill, N.Y., 1948.
- 4- Isard, W; Methods of Regional Analysis, The Technology Press of M.I.T. & John Wiley & Sons, N.Y., 1956.
- 5- Miller, E: A Geography of Manufacturing, Prentice Hall, Englewood Cliffs, N.J., 1962.
- 6- Weber, Alfred: Theory of Location of Industries, Chicago University Press, Chicago

**Pedagogy**

The teacher should take the students to a neighbouring industrial area and apprise them of the functioning of the various industries, difficulties faced and environmental problems created by them.

**Theory**

**Unit I**

Nature, scope, significance, development and approaches of agricultural geography. Development of agricultural technology in plant production, animal production and other agricultural fields. Origin and dispersal of agriculture. Determinants of agricultural landuse. Land reforms and landuse policy, cropping pattern, crop concentration, intensity of cropping, degree of commercialization, diversification and specialization, efficiency and productivity, carrying capability of land. The concept of agricultural landscape.

**Unit II**

Determination of crop combination regions, Theories of agricultural location based on several multidimensional factors: Von Thunen's theory and its recent modification. Methods of delineation of agricultural regions. Whitesey's classification of agricultural regions. Agricultural regions of the world: Their location and characteristics.

**Unit III**

Agricultural landuse and cropping pattern in India. Regional pattern of productivity in India. Green, White and Blue revolutions and their impacts. Food deficit and food surplus regions of India. Specific problems in Indian agriculture and their management and planning. Agricultural policy of India. Contemporary issues-food, nutrition and hunger, food aid programmes. Role of irrigation, fertilizers, insecticides, pesticides and technological know how in environmental degradation, employment in agricultural sector.

**Practicals**

- 1- Techniques of landuse survey
- 2- Landuse Planning
- 3- Agricultural efficiency
- 4- Carrying capacity
- 5- Measurement of agricultural intensity
- 6- Practical record and Viva-voce

**Suggested Readings**

- 1- Baylist smith T.P.: The Ecology of Agricultural System, Cambridge University Press, London, 1987.
- 2- Gregor, H.P.: Geography of Agriculture, Prentice Hall, N.Y., 1970.
- 3- Mannion, A.M.: Agriculture and Environmental Change, Johnwiley, London, 1971.
- 4- Morgan, W.B. and Norton, R.J.C. : Agricultural Geography, Methuen. 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.I.T. Press, Westview Press, Mass., USA, 1969.
- 7- Singh J. and Dhillon S.S. : Agricultural Geography, Tata McGraw Hill Pub., New Delhi, 1988.
- 8- Tarrant, J.R. : Agricultural Geography, Wiley, N.Y., 1974.

**Pedagogy**

The teacher should impress the students the overall importance of agriculture in the global perspective. The world is fast changing and its impact is felt on agriculture. Population is increasing and demand of agricultural products is also on the increase. Contrary to it,

in agricultural sector. It is causing environmental pollution. The teacher should interact with students on above mentioned issues. Examples from neighbouring areas may be given to the students for better Perception.

**M.A/M.Sc. FINAL,  
Paper VII  
POPULATION GEOGRAPHY**

**Note :** Candidates will have to attempt any three questions selecting one from each unit.

**Theory**

**Unit I**

Concepts, scope, methods, approaches and development of population geography, population geography and demography, sources of population data their reliability and problems of mapping. Population dynamics: measurements of fertility and mortality, Types, causes, theories and consequences of migration. India's population dynamics.

**Unit II**

Population distribution, density and growth: Theories of population growth-classical and modern. Factors affecting population distribution, density types, world pattern of population distribution and density. Population distribution, density and growth profile of India. Concepts of under population, over population, optimum population and population explosion. Demographic transition theory.

**Unit III**

Population composition: Rural and urban population, urbanisation, Age and sex structure, literacy and education, occupational structure, gender issues, population composition of India. Population-resource regions of the world and India. Human development

index and its components, population policy and population planning with special reference to India. Success and failure of family planning and family welfare programmes.

#### Practicals

- 1- Preparation of density maps by choropleth and isopleth.
- 2- Construction of simple, compound and superimposed pyramids.
- 3- Construction of population graph and diagrams, scatter diagram, Loglinear diagram, cumulative graph.
- 4- Population projection by graphical, mathematical and logarithmic methods.
- 5- Preparation of Population potential maps and centres of gravity of population distribution.
- 6- Practical record and Viva-voce.

#### Suggested Readings:

- 1- Bogue D.J.: Principles of Demography, John Wiley, N.Y., 1969.
- 2- Chandana, R.C. : Geography of population : Concept, Determinants and Patterns. Kalyani Publishers, 2000.
- 3- Clarke, John. I: Population Geography, Pergaman Press, Oxford, 1973.
- 4- Crook, Nigel : Principles of Population and Development, Pergaman Press, N.Y., 1997.
- 5- Daugherty Helen Gin, Kenneth C.W. Kammeyer: An Introduction to Population, The Guilford Press, N.Y., London, 1998.
- 6- Garnier, J.B.: Geography of Population, Longman, London, 1970.
- 7- Mamoria, C.B.: India's Population Problem, Kitab Mahal, New Delhi, 1981.
- 8- Premi M.K. : India's population: Heading Toward a Billion, B.R. Publishing Corporation, 1991.

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in India: Challenges for the New Millennium. Tara McGraw Hill, New Delhi, 2001.

10- Woods, R: Population Analysis in Geography, Longman, London, 1979.

11- Zelinsky, Wilber: A Prologue to Population Geography, Prentice Hall, 1966.

#### Pedagogy

Classroom Discussions may focus on population and development linkages. Students may also be encouraged to consider various quantitative attributes of population from Census, 2001 of India. Discussion may be arranged on the implications of population policies announced from time to time.

### MA/MSc. FINAL

#### Paper VIII

### GEOGRAPHY OF TOURISM

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#### Theory

##### Unit I

Definition of tourism, factors influencing tourism-historical, natural, socio-cultural and economic; motivating factors for pilgrimages, leisure and recreation, elements of tourism, tourism as an industry. Geography of tourism: its spatial affinity, areal and locational dimensions comprising physical, cultural, historical and economic. Tourism types-cultural, eco-ethno-coastal and adventure tourism, national and international tourism. Globalization and tourism.

##### Unit II

Indian tourism: Regional dimensions of tourist attraction, evolution of tourism, promotion of tourism. Infrastructure and support system-accommodation and supplementary accommodation, other facilities and amenities. Tourism circuits-short and longer duration-Agencies

and intermediaries. Indian hotel industry.

### Unit III

Impacts of tourism-physical, economic, social and perceptual, positive and negative impacts, environmental laws and tourism. Current trends, spatial patterns and recent changes, role of foreign capital and impact of globalization on tourism.

#### Practicals

- 1- Tourist centres of India
- 2- Tourist circuits and tourist paths of India.
- 3- Morphology of a tourist centre.
- 4- Infrastructural elements of a tourist centre.
- 5- Pilgrimage tourism and religious tourism in India.
- 6- Planning and developing a tourist centre
- 7- Project report on a tourist centre of India.
- 8- Record and Viva-voce.

#### Suggested Readings:-

- 1- Bhatia, A.K.: Tourism: Development and Practices, Sterling Pub. New Delhi, 1996.
- 2- Chandra, R.H. Hill Tourism: Planning and Development, Kanishka Pub, New Delhi; 1998.
- 3- Hunter C and Green H: Tourism and the Environment: A Sustainable Relationship, Routledge, London, 1995.
- 4- Kaur J: Himalayan pilgrimages and New Tourism, Himalayan Books, New Delhi, 1993.
- 5- Milton, D: Geography of World Tourism, Prentice Hall, N.Y. 1993.
- 6- Voase, R.: Tourism: The Human Perspective, Hodder and Stoughton, London, 1995.
- 7- Williams Stephen: Tourism Geography, Routledge, London, 1998.

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#### Pedagogy:

Students may be encouraged to gain first hand knowledge from field excursions. A Project report may be prepared by the students. Visit a tourist place and list and map the problems and suggest the remedial measures.

### MA/MSc. FINAL

#### Paper IX

### TRANSPORT GEOGRAPHY

Note : Candidates will have to attempt any three questions selecting one from each unit.

#### Theory

##### Unit I

Nature, scope, significance and development of transport geography, evolution of transportation-preindustrial era, 19th and 20th centuries. Factors associated with the development of transport system- Physical, economic, social, cultural and institutional. Evolution of transport network. Characteristics and relative significance of different modes of transport: Railways, Roads, Airways and waterways.

##### Unit II

Accessibility and flow models, network structure, graph theoretic measures, measurement of accessibility, models of network change, Linear programming and gravity models. Theories related to freight rate structure, bases of spatial interaction: complementarity, intervening opportunity, transferability, gravity, potential models of spatial interaction.

##### Unit III

Transport system in India: Railways, Roads, airways and waterways, patterns of movement, simple model of interaction, movement geometry. Transport policy and planning, transport

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development in developing countries, urban transportation-growth-and problems. Transport and regional planning, transport and environmental degradation, vehicular pollution and congestion, alternatives to transport system in Megacities of India, National Highway Development and planning in India.

#### Practicals

- 1- Analysis of the structure and spatial variation of transport network by traditional graph and theoretic methods (Alpha, Gamma, Beta and pie indices).
- 2- Application of gravity potential models showing transport interaction.
- 3- Traffic flow analysis on the basis of flow data.
- 4- Connectivity and tour indices, degree of circuitry.
- 5- Transportation planning for a given region under specified assumptions.
- 6- Practical record and Viva-voce.

#### Suggested Readings :

- 1- Chorley, R.J. and Hagget P; Models in Geography, Methuen & Co London, 1967.
- 2- Hurst, M.E. (ed): Transportation Geography, McGraw Hill, 1974.
- 3- Hagget P. and Chorley R.J.: Network Analysis, Edward Arnold, London, 1968.
- 4- Hay A: Transport Economy, Macmillan, London, 1973.
- 5- Hoyle, B.S. (ed): Transport and Development, Macmillan, London, 1973.
- 6- Raza M. and Agrawal Y.P.: Transport Geography of India, Concept, New Delhi, 1985.
- 7- Robinson H. and Bamford G.G. : Geography of Transport, Macdonald & Evans, London, 1978.

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- 8- Taffe, E.J. and Gauthier (Jr.) H.L.: Geography of Transportation, Prentice Hall, Englewood Cliffs, N.J., 1973.
- 9- White H.P. and Senior M.L.: Transport Geography, Longman, London, 1953.

#### Pedagogy:

The students should familiarise themselves with data sources including maps of transport network and mapping flow data of goods and people (Roads and railways) and demarcating tributary areas and major nodes. They should also undertake practical exercises in working out accessibility index, network density and hierarchy. Study of transport should be related to regional and locational interaction using maps of market and urban centre and industrial locations.

### MA/MSc. FINAL

#### Paper X

### POLITICAL GEOGRAPHY

**Note :** Candidates will have to attempt any three questions selecting one from each unit.

#### Theory

##### Unit I

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Nature, scope, development, recent trends and approaches of political geography. Major schools of thought in political geography, political geography vs. geopolitics, geographic element of the state-physical, human & economic. The methodology of political geography: A critical analysis of the functional unified theory, genetic functional and systems approaches, functions and classifications.

##### Unit II

Themes in political geography, state, nation, Nation-state and Nationbuilding, frontiers and boundaries, colonialism, decolonialisation, Neocolonialism, federalism and other forms of

governance. Global strategic view with particular reference to the ideas of Mahan, Mackinder, Spykeman and De Seversky. The changing pattern of super powers and supernationalism. Impress of politics upon the environment framework, the study of government as landscape modifier. Elements of electoral geography.

### Unit III

Political geography of contemporary India. India: a global strategic view. India's border with neighbouring countries especially with Pakistan, China and Bangladesh. Geopolitical significance of Indian Ocean. SAARC region and India. The changing political map of India. Interstate issues and emergence of New states. Origin of Indian federalism. Nature of federal capitals with special reference to New Delhi.

### Practicals

- 1- Cartographic representation of India's global position and its implication under different geo-political methods.
- 2- Cartographic and statistical analysis of shape and size of boundaries at district and local levels.
- 3- Optimisation of boundaries at district and local levels from the point of view of (a) administrative efficiency, (b) development planning and (c) electoral point of view.
- 4- Special study of the techniques and application of electoral geography.
- 5- Practical Record and Viva-voce.

### Suggested Readings

- 1- Alexander, L.M.: World Political Patterns, Ran McNally, Chicago, 1963.
- 2- De Blij H.J. and Glassner, Martin: Systematic Political Geography, John Wiley, N.Y. 1968.

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- 3- Dikshit, R.D.: Political Geography: A Contemporary Perspective, Tata McGraw Hill, New Delhi, 1996.
- 4- Dikshit, R.D.: Political Geography: A Century of Progress, Sage New Delhi, 1999.
- 5- Sukhwal, B.L.: Modern Political Geography of India, Sterling Publisher, New Delhi, 1968.
- 6- Taylor, P.: Political Geography, Longman, London, 1985.
- 7- Fisher, Charles: Essays in Political Geography, Methuen, London, 1968.
- 8- Pounds, N.J.G.: Political Geography, McGraw Hill, N.Y., 1972.
- 9- John R. Short: An Introduction to Political Geography, Routledge London, 1982.
- 10- Moddie A.E.: Geography Behind Politics, Hutchinson, London, 2000.
- 11- Prescott, J.R.V.: The Geography of Frontiers and Boundaries, Aldine, Chicago.
- 12- Deshpande, C.D.: India: A Regional Interpretation, Northern Book Centre, New Delhi, 1992.
- 13- Panikkar, K.M.: Geographical Factors in Indian History, 2 Vols, Asia Publishing House, Bombay, 1959.

### Pedagogy

Students may be encouraged to collect clippings from newspapers on various topics included in the syllabus. They may be involved in discussions on the emerging political issues and attempt to provide geographical interpretation.



MA/M.Sc. FINAL,

Paper XI

GEOGRAPHY OF RURAL SETTLEMENTS

Note : Candidates will have to attempt any three questions selecting one from each unit.

-60-

Theory

Unit I

Nature, scope, significance, development and approaches of rural settlement geography. Definition and characteristics of rural settlements, human settlement as a system. Rural-urban continuum. Histogenesis of rural settlements: Spatio-temporal dimensions and sequent occupance. Distribution, size and spacing of rural settlements.

Unit II

Types, forms and patterns of rural settlements : cause and effect, functional classification of rural settlements. Central places and rural settlements, morphology of rural settlements. Central places and rural service centres: their nature, hierarchy and functions, Service centres as growth points. Rural-urban fringe-structure, characteristics and function

Unit III

Cultural landscape elements in rural settlements in different geographic environments with special reference to India. House types and their spatial patterns. Origin, evolution, size, socio-spatial structure of Indian villages. Social issues in rural settlements-poverty, housing, deprivation, and inequality. Environmental issues in rural settlements-water supply, sanitation, drainage and health hazards. Planning of rural settlements with special reference to India.

Practicals

Identification of rural settlements by scatter diagram.

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- 3- Mapping of morphology of rural settlements.
- 4- Nearest neighbour analysis of distribution of settlements.
- 5- Typological classification of rural settlements from maps.
- 6- Planning rural settlements.
- 7- Practical record and Viva voce.

Suggested Readings :

- 1- Alam, S.M. et al: Settlement System in India, Oxford and IBP Publication Co. New Delhi, 1982.
- 2- Chisholm M; Rural Settlements and Landuse, Johnwiley N.Y, 1967.
- 3- Grover N: Rural Settlements: A Cultural Geographical Analysis; Inter India Publication, Delhi; 1985.
- 4- Daniel P. and Hopkinson M: The Geography of Settlements, Oliver and Boyd, Edinburg, 1986.
- 5- Hudson, F.S.: A Geography of Settlements, Macdonald and Evans, N.Y, 1976.
- 6- Wannali, S: Service Centres in Rural India, B.R. Publication Corporation, New Delhi, 1983.

Pedagogy

The teacher should motivate the students with illustrations of diverse patterns of settlements in different natural settings of this country and abroad. Models, maps, Illustrations and audio-visual devices should form teaching aids to impress the students. The students are advised to consult Census of India Table H-Series.

M.A/M.Sc. FINAL  
Paper XII

**GEOGRAPHY OF RURAL DEVELOPMENT**

Note : Candidates will have to attempt any three questions selecting one from each unit.

**Theory**

-60

**Unit I**

Rural development: A geographical perspective. Theoretical framework of rural development. Structure and spatial organisation of rural settlements. Rural markets and market Centres, growth points and growth centres. Theories of central places, Rural-Urban relationship and their integration. Rural landuse and its problems.

**Unit II**

Dimensions of rural economy: physical and humanresources-their spatial patterns and interrelationships, socio-economic dimensions, infrastructural, facilities, socio-cultural organisation, migrations and their causes. Characteristics of rural population, agriculture and its characteristics.

**Unit III**

Social issues of rural areas-poverty, housing and shelter, deprivation and inequality, empowerment of women, health care, social tension and underdevelopment, environmental issues-access to environmental infrastructure-water supply, sanitation, drainage, occupational health hazards. Balanced development strategies of India -Panchayati Raj system, role and relationship of panchayatiraj institutions (Village panchayat, panchayat samiti and zila parishad) and administrative structure (village, block and district). Failure and success of various schemes sponsored by govt. for rural development. Government agencies and NGOs. Integrated rural development strategy.

**Practicals**

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- 2- Morphology of villages.
- 3- Mapping of rural landuse.
- 4- Rural poverty and economy
- 5- Rural-urban relationship
- 6- Rural central places and growth centres
- 7- Rural planning
- 8- Practical Record and Viva-voce.

**Suggested Readings :**

- 1- Kuklinski, A. R. (ed): Growth Poles and Growth Centres in Regional Planning, Moutan, The Hague, 1972.
- 2- Kundu A. And Raza M; Indian Economy: The Regional Dimension, Spectrum Publishers, New Delhi, 1982.
- 3- Richardson, H. W.: Regional Economics, Weidenfeld and Nicholosen, London, 1969.
- 4- Clout, H.D: Rural Geography, Pergman, Oxford, 1977.
- 5- Ram chandran, H: Village Clusters and Rural Development, Concept Publication, New Delhi, 1985.
- 6- Rao, E.N. : Stategy for Integrated Rural Development, B.R. Publication Cor. Delhi, 1986.
- 7- Srinivas M.N: Village India, Asia publication House Bombay, 1968.
- 8- Wannali, S: Service centres in Rural India, B.R. Rublication Cor. Delhi, 1983.

**Pedagogy**

The students should prepare a detailed project report of a village and analyse various socio-economic problems of that village.

MAM/SC. FINAL  
Paper XIII

REGIONAL PLANNING AND DEVELOPMENT

Note : Candidates will have to attempt any three questions selecting one from each unit.

Theory

-60

Unit I

Philosophy and purpose of planning. The development of planning thought, theories of regional development, economic base theory, international trade multipliers, aggregate growth model. The concept of growth centres, growth centre strategy of regional planning, rural economy, core-periphery relationship.

Unit II

Concept and types of regions-functional and formal, Uniform and nodal, single purpose and composite regions in the context of planning Regional hierarchy. Approaches for the delineation of different types of regions and their utility in planning-resource base approach, growth centre approach, basic needs approach and habitat transformation approach. Delineation of planning regions. Planning regions of India. Planning process-sectoral, temporal and spatial dimensions. Planning for a regions development and multiregional planning in a national context. Indicators of development and measuring levels of regional developments with special reference to India.

Unit III

Regional planning for rural development with special reference to U.P. Role of innovation diffusion, infra-structural elements (irrigation, power, transportation and communication and marketing) and industrialisation in regional planning. Population-resource equilibrium and spatial organisation in regional planning. Metropolitan regions in regional planning. Regional planning as development strategy since

dispersal. Regional plans of India. Concept of multilevel planning-decentralised planning. Peoples participation with the planning process.

Practicals

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- 1- Delineation of Planning regions of various types.
- 2- Rank-size relationships, growth poles, growth centres and areal functional organisation
- 3- Planning of growth centres.
- 4- Study of river valley project areas as integrated planning regions.
- 5- Analysis of traffic flow in any region or town.
- 6- Preparation of development plans at local level.
- 7- Practical record and Viva-voce.

Suggested Readings :

- 1- Bhat, L.S. : Regional Planning in India, Statistical Publishing Society, Calcutta, 1973.
- 2- Freidman, J. and Alonso W: Regional Development Policy: A Case Study of Venezuela, MIT Press, Cambridge Mass-1966.
- 3- Gosal G.S. and Krishnan G: Regional Disparities in Levels of Socio-Economic Development in Punjab, Vishal Publications, Kurukshetra, 1984.
- 4- Kuklinski A.R. (ed) : Growth Poles and Growth Centres in Regional Planning, Moutonj, The Hague, 1972.
- 5- Kundu A and Raza M: Indian Economy: The Regional dimension, Spectrum Publishers, New Delhi, 1982.
- 6- Losch, A: The Economics of Location, University Press, New Haven, 1954.
- 7- Mishra, R.P.: Regional Planning: Concepts, Techniques and Policies, University of Mysore, Mysore, 1969.
- 8- Mishra R.P. and Others (ed): Regional Development-Planning in India: A strategy, Institute of Development Studies, Mysore, 1974.

9. Mitra, A: Levels of Regional development. Census of India vol 1. Part I (A) (i) and (ii) New Delhi, 1965.

10- Tarlok Singh: India's Development Experience, MacMillan, New Delhi, 1999.

11- Mishra, R.P. et. al: Multi Level Planning, Heritage Publishers, Delhi, 1980.

**Pedagogy**

The students should be made to do sessional assignment based on diverse data to formulate regions at the local and regional level and identify the regional differentiations. They should be made conversant with the trends in the development of regional concepts using space in the multidisciplinary approach to regional development.