NORTH MAHARASHTRA UNIVERSITY, JALGAON.

SYLLABUS FOR M.A./M.Sc. GEOGRAPHY TO INTRODUCED FROM JUNE- 1992.

Explanatory Notes :-

1. There will be four Semesters and 20 Courses in all. Out of 20 Courses, 16 will be for University Examination and 4 for Departmental Examination.

2. Each Semester will consist of 5 courses, For th first Two Semesters all the courses are compulsory and will be for University examination. For thirdand forth semester 3 courses are for University examination and 2 courses are for Departmental examination. Departmental courses are essentially theory courses.

3. Each course will carry 100 marks, of which 80 marks are for final examination and 20 marks are for Internal Assessmont.

4. Students offering dissertation course, should not have any backlog at the First Two Semesters, and should secure at least 55% of marks at first two semesters.

5. Dissertation course will be examined on the following lines :-

a) Contents	35 Marks.
b) Presentation	25 Marks.
c) Viva-Voce.	20 Marks.
d) Internal Assessment.	20 Marks.

6. For village survey or Project work a batch will consists of 5 students per teacher. And for dissertation each teacher will guide only 3 students.

7. The Examination for disseration course will include a Viva of 30 minutes for each student to be conducted by at least two examiners.

8. A batch for dissération Viva, will be of not more than 6 students per day.

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nts/-

Course No. Gg. PRACTICALS IN PHYSICAL GEOGRAPHY.

A) Geomorphology. B) Climatology. C) Tour Report.

A) Geomorphology :

I) Morphometric Analysis.

i) Stream Ordering.
ii) The birurcation Ratio (Rb)
iii) Drainage density & frenquency
iv) The constant of channel maintenance (CCM)
v) Demarcation of drainage basin.
vi) The Hypsographic Curve
vii) The Hypsometric Curves & Integrals.

II) Slope Analysis :

i) Millar's Isotan Map. (ii) Strahler's Isosine slope map.
iii) Went-worth's average slope determination method.

III) Geological Maps.

i) Explanation of Terminology: Bedding plance, strike lines, dip, conformity & unconformity out crops, Thickness of bed.

ii) Drawing of geological section & their interpretation (Atleast.6) Determination of dip angle & thickness of bed.

B) CLIMATOLOGY :

I) Preparation of climatic maps & digrams:

i) Hythergraphs. (ii) Taylor's climographs.
iii) Circular climatographs. (iv) Wind Roses: Simple & Compo-und
v) Rainfall dispersion graph.

II) i) Interpretation of weather maps & climatic-maps. (Atleast 6 of different, Seasons.)

ii) Station model - Preparation of station model.
iii) Weather forecasting.

III) Determination of climatic types (Koppen)

i) From the data supplied (ii) Sadiment analysis-Examples.

C) Tour Report.

Reference Books.

1. Monkhouse F.J. and Wilkinson H.R. : Maps and Diagram.
2. King C.A.M. : Techniques in Geomorphology.
3. Millar A : Skin of the Earth.
4. Mather : Climatology fundamentals & applications.
5. Patric MaCullah : Modern concept in Geomorphology. (Oxford University Press)
6. R.L.Singh : Elements of Practical Geography. (Kalyani Publication New Delhi)
7. R.L. Singh : Map work & Practical Geography. (Central Book Depot, Allahabad)

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NORTH MAHARASHTRA UNIVERSITY, JALGAON.

COURSE NO. Gg. : REGIONAL GEOGRAPHY OF USA/JAPAN.

COMMON SYLLABUS

1. Location, Space relations.

2. Physical setting :

   i) Brief tectonic history and geological setting.
   ii) General relief, structure and drainage.
   iii) Climate, soils, vegetation.

3. Economic Geography :

   i) Agricultural Activity : Agricultural regionalization, Types of Farming, Irrigation and livestock.
   ii) Minerals and sources of power : Iron ore, Coal, Oil, Hydel power, Atomic power.
   iii) Industries : Development of Industries and evolution of industrial regions.
   Major industries: Raw materials, growth, distribution and problems: Iron-steel, Cotton textile, Automobile, Ship building, Lumbering, Petro-chemicals, Electronics.
   iv) Transport and communication : Role of surface, water and Air transport in economy.
   v) International trade : Trading partners-membership of international trade treaties. Foreign trade.

4. Human Geography : i) Distribution of population.
   ii) Migration to and from countries.
   iii) Age - Sex composition.
   iv) Problem of ethnic diversity.
   v) Urbanization, Important urban centres.

5. Major Geographical regions and their personality.

   i) Basis of regionalization
   ii) Regional characteristics
   iii) Role of region is national perspective.

6. Special issues :

   International relations : Membership of various military/ Political / Economic, international organization.
   Countries involvement in international issues after the second warld war.

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BOOKS :

1. North America - Carlson.
2. North America - Mead and Brown
3. Anglo America - Griffih and others.
4. North America - White and Renner.
5. North America - L. D. Stamp.

Note :- (The further books may be recommended from Time to time,)

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NORTH MAHARASHTRA UNIVERSITY, JALGAON

COURSE NO.Gg. STATISTICAL METHODS

1. 1.1 Statistical Techniques: Descriptive, Sampling, Inferential.

1.2 Probability Concept in Geography.

1.3 Probability distribution: Normal, Binomial, and poisson and their application in geographical data analysis.

1.4 Permutation and combination.

1.5 Elements of set theory and its application in geography and probability assessment.

2. Correlation and Regression analysis-

2.1 Correlation- (a) Pearson's product moment coefficient of correlation.

(b) Spearman's method of coefficient of Correlation-Rank order (method)

2.2 Regression Analysis

Basic assumptions of regression.

a) Straight line regression.
b) Exponential regression equation.
c) Power regression equation.
d) Residuals from regression.

3. Inferential statistics

Concepts of level of significance, null Hypothesis and degree of freedom.

3.1 Kolmogrove and Smirnov's test.
3.2 Chi-Square Test- (One way and two way) based on uniform sampling and contingency table.

3.3 Analysis of Variance- One way classification.

3.4 Student's 't' test.

4. Index number statistics.

4.1 Defination, types and use of Index number

4.2 Selection of base year- Fix base, chain base year.

4.3 Calculation of price Index number: Requirements for construction of Index number.

(a) Unweighted index number- Simple aggregative method and Average of price relative method.

(b) Weighted index number- Laspere's and paasche's methods.

(c) Calculation of cost of living index number- Aggregate expenditure method.

5. Time series Analysis.

5.1 Definition, use and components of time series.

5.2 Methods of measuring trends: (a) graphic (b) semi average (c) Moving average, (d) Least squares- Their merits and demerits, fitting of straight line equation for time series.

P.T.O.

BOOKS:

1. Statistical techniques- A basic approach to geography by Saroj K. Pal (Tata MCCraw hill publishing Com.N.Delhi

2. Quantitative techniques in Geography- R.Hammond and Mc cullagh (Clarendon press- Oxford) 2nd edition 1974.

3. Statistical methods for geographers by S.Gregory (Longmans, London, 4th edition 1974)

4. An Introduction to quantitative analysis in geography by yeats, M.H. (Mc Graw hill- New York 1974)

5. Practical statistics- by S.P.GUPTA (1983) S.Chand & Com. N.Delhi.

6. An Introduction to practical statistics- Revised 8th edition by C.B.Gupta vikas publishing House Pvt.Ltd. N.Delhi

7. Mathematics and statistics for economics-by G.B.Monga 2nd revised edition and enlarged, Vikas publishing house.

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NORTH MAHARASHTRA UNIVERSITY, JALGAON

SYLLABI FOR COURSES PRESCRIBED FOR M.A./M.SC. GEOGRAPHY

IN FORCE FROM JUNE 1982

COURSE NO.Gg. PRINCIPLES OF ECONOMIC GEOGRAPHY

1. Nature and scope of Economic Geography: Dynamic science- Approaches to the study of Economic Geography.
2. Spatial order in economic landscape and the significance of Location in economic geography:
   Introduction to Von Thunen's and Weber Models. Range and Threshold concept.
3. a) A concept of the economy.
   b) Geographical studies of economic activity:
   i) Systematic approaches.
   ii) Spatial approaches.
   iii) The environmental relations of the economy.
   iv) Economic Geography and the economy.
4. The Economic Environment: Levels of Development-
   i) Technically advanced.
   ii) The less developed countries.
5. Decision making- Location of economic activities-Sets of decision.
   i) Allocation decisions.
   ii) Production decisions.
   iii) Distribution decisions.
6. Significance of spatial distribution of natural and human resources: Significance of land, labour and capital in economic geography.
7. Spatial variations in production and transportation cost variation in demand, Economics of scale and agglomoration Growth poles and economic hinterland concept.
8. Temporal and spatial views of economic development: Introduction of Rostow's and Myrdalls' models of economic development.
9. International Trade: Factors associated with the development of trade. Trade areas & Economic blocks of the world. Theories of International Trade: Classical & Neo classical.

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NORTH MAHARASHTRA UNIVERSITY, JALGAON

ENVIRONMENTAL SCIENCE

COURSE NO. Gg.

1. Nature and scope of Environmental Science.
   i) Dynamic, interdisciplinary and scientific nature of the subject.
   ii) Purpose of environmental science.
   iii) Scope- environment and development, major environmental problems in developing countries, global issues.

2. Ecosystems:
   i) The nature, structure and production in ecosystem.
   ii) The function, pathways and efficiency of energy use in an ecosystem.

3. Global biogeochemical cycles:
   i) Carbon cycle, Phosphorous cycle, Nitrogen cycle.
   ii) Man's impact on different biomes:
   World's biome types
   Man's impact on forest biome: Deferestration, Overexploitation and their long term effect, forest conservation.
   iii) Impact on grass land- Transformation of grass land into agriculture land.
   iv) Impact on deserts- Changes due to introduction of new technology.

4. Environmental Resources:
   i) Minerals- Utilization and environmental degradation.
   ii) Water as a resource: Natural water cycles, utilization of water and Agricultural practices. Need of conservation.
   iii) Soil resources- Utilization, erosion and conservation of soil.
   iv) Marine resources- Need & development of marine resources.

5. Energy-
   i) Conventional and non conventional energy resources.
   ii) Utilization of energy resources- Its impact on environmental quality.

6. Pollution:
   (a) Air pollution: Sources of air pollution,
   The meteorology of air pollution,
   The effects of air pollution on human health, vegetation and animals,
   Causes and effects of acid rain.
   (b) Water pollution: Water pollutents, Pollution of inland waters, ground water and oceans- over utilization, solid waste, oil spills,
   The effects of water pollution on human health.

(c) Solid wastes-

Sources and quantities, effects on land & ocean, Recycling of solid waste.

7. Environmental Problems of India:

i) India's Environmental concerns,

ii) Environmental properties in India and sustainable development.

iii) Environmental problems in India regarding- Land, Water, Forests, Air & Health.

8. Environmental Management:

Need for Environmental management, Environmental management strategy, Environmental management-(a) Environmental Planning (b) Environmental status (c) City planning and the environmental evalution.

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BOOKS:

1. Bartelmus, peter: Environment and development.
2. Botkin, Daniel B. and Keller, Edward A: " Environmental studies" Charles E.Merrill publishing company, A Belt and Howell Co.London.
3. Clapham, Jr.W.B.-"Natural ec. system". Macmillian publishing co.Inc.Newyork.
4. Dury, G.H. "An Introduction to Environmental systems".
5. Elsworth, Steve: " A dictionary of the Environment: A practical guide to today's most important environmental issues". Paladin Grafton Books. A division of the collins publishing group.
6. Jones Gareth, Roberston, Alan, Forbes Jean, Hollier Graham; Dictionary of Environmental science, collins, London.
7. Kayastha, S.C.; Geography and environment, concept publishing co. New Delhi.
8. Khoshoo, T.N.: Environmental concerns and strategies, Ashish publishing House, New Delhi.
9. Moram, J.M.: Introduction to Environmental science.
10. Muraoch, William W. (Ed) Environment pollution and society.
11. Raj Gurdeep: Dictionary of Environment Anmol Publ. New Delhi
12. Salt: Environmental Science.
13. Singh, I.P. Man and his Environment.
14. Turk Jonathan: Introduction to Environmental studies, Saunders College Publishing.
15. Turk, Jonathan, Turk Amos, Armas Karen: "Environmental Science". Saunders College publishing, Philadelphia, New York, London.
16. Turk Jonathan, Wittes Janet, T, Wittes Robert and turk Amos "Ecology, Pollution, Environment", Saunders College Pub.
17. Encyclopaedia of Environmental Science, Macgraw Hill.
18. The state of India's Environment. The first citizens report. Centre for science and Environment, New Delhi.
19. The state of India's Environment. The second citizen's report; centre for science and Environment, New Delhi.
20. Developing India's wasted Lands, centre for science and environment, New Delhi.

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Course No.Gg-

PRINCIPLES OF GEOMORPHOLOGY

1. Nature and scope of geomorphology.
   Brief account of development of geomorphic thoughts.
   Introduction of geological time scale.

2. Fundamental Concepts and approaches in geomorphology:
   i) Catastrophism.
   ii) Uniformitarianism.
   iii) Steady State
   iv) Dynamic equilibrium
   v) Cyclic at development of Land forms.
   vi) Concept of morphogenetic regions.

3. Origin and Evolution of earth's primary relief.
   i) Continential drift theory and palaeo magnetism.
   ii) Sea floor spreading
   iii) Plate tectonic theory.

4. Subaerial processes and Land forms:
   Weathering: Factors, types and effects.
   Mass wastings- Factors, characteristics and types.
   slopes- Elements of slope and Concepts of Slope development: Davis, penck, wood and king.
   Concept of characteristic angles & limiting angles.

5. Davision Concept of cycle of erosion and its assement by his contemporary and later geomorphologists.

6. Fluvial Landforms.
   Mechanism of Fluvial erosion, transportation and deposition, and associated landforms.

7. Arid & Semiarid Landforms.
   Mechanism of wind erosion, transportation and deposition and associated landforms.
   Pediments, scarps and Piedmont zone.
   The concept of Pediplanation.

8. Coastal Landforms.
   Coastal terminology.
   Mechanism of wave erosion, transportation and deposition and associated Landforms.

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BOOKS

1. Richard J. Chorely, Stanley ., Schumm, David E Sugden. (Methuen & Com.Ltd). - Geomorphology.

2. William D. Thornbury- Principles of Geomorphology. (Willey eastern Ltd.)

3. Harry Robinson- Morphology & Landscape (University tutorial P.London)

4. A.N.Strahler- Physical Geography(Wiley International Book New York)

5. Young & Young- Slope development (Mac Millan)

6. Wooldridge S.W. & R.S.Morgan- An out line of Geomorphology-

7. Sparks- Geomorphology.

8. F.J.Small- Study of Landforms

9. A.C.BLOOM- Geomorphology.

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Course No. Gg.

PRACTICALS IN HUMAN GEOGRAPHY

PART A: ECONOMIC GEOGRAPHY

1) Crop combination analysis- Weaver, Thomas, Dois methods- Index of Concentration and diversification - Bhatia, Measurement of Agricultural efficiency- Bhatia, Kendall.

2) Representation of data: Use of Semilog Scale and Log scales, Measurement of Industrial activity, Location Quotients and Lorenz Curves.

3) Graph theoretic measures of transport network, minimum distance paths, connectivity Index.

PART B:

I). TECHNIQUES IN POPULATION GEOGRAPHY

1. Age Sex Pyramids.
2. Child Woman ratio
3. Dependency ratio
4. Infant mortality rate
5. Population growth rate
6. Population projection.

II) TECHNIQUES IN URBAN GEOGRAPHY

1. Rank Size rule.
2. Functional classification of towns- Methods used by H.J.Nelson and G.Alexanders son.
3. Calculation of Entrality and Hierachy of central places. K_3, K_4 and K_7 models.

III) TECHNIQUES IN GEOGRAPHY OF RURAL SETTLEMENT

1. Methods used to calculate degree of dispersion: Demangeon, Barnard, Debouverie.
2. Gravity model and growth pole concept.
3. Nearest Neighbour analysis.
4. Measurement of rural urban gradient.

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BOOKS:

1. Richard S.Thoman/ Peter Corbin. : The Geography of Economic activity.

2. Dr.M.R.Chaudhari : Economic Geography.

3. V.A.Janaki : Factors influencing the Location of Economic Activity.

4. B.W.Hodder and Roger Lee : Economic Geography

5. Alexander,J.W. : Economic Geography Prentice Hall 1963

6. Chisholm, M. : Geography and Economics

7. Lloyd and Dicken : Location in Space: A Theoretical Approach to Economic Geography. Harper and Row, New York, 1972.

8. Mccarty and Lindberg : A preface to Economic Geography, Prentice Hall, 1966.

9. Thoman, Conkling and Yeates, : Geography of Economic Activity, McGraw Hill, 1974, New York

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NORTH MAHARASHTRA UNIVERSITY, JALGAON

PRINCIPLES OF POPULATION & SETTLEMENT GEOGRAPHY

Gg. Course No.

1. Introduction to population Geography:
   Meaning, Objectives & scope of population geography.
   Evolution of population Geography.

2. History of world population distribution, in relation to stages of man's evolution and civilization.
   History of Indian Census.

3. Dynamics of population growth, Ecological checks on growth, History of world population growth. Demographic Transition model. Malthus theory.

4. Introduction to settlement geography: Meaning, objectives and scope of settlement geography.
   Evolution of settlement geography.
   Approaches and principles of settlement geography.
   Models in settlement geography.

5. Evolution of human settlements, since the dawn of civilization, variations in shelter and settlement patterns in relation to changes in technology from Neolithic to modern.

6. Classification of settlements, theories of classification, settlement hierachies.
   Factors of dispersion, and nucleation
   Nearest Neighbour Method
   Lorenz Curve.

7. Concept of nodality and centrelity,
   Christaller's Central Place Theory, 'K' Model, Range threshold,
   Rank- size distribution
   Methods of measuring centrality
   Hierarchy of central places.
   Rural service centres,
   Urban centres.

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BOOKS

1. Garnier- B.J. - Geography of Population
Longman Group Ltd., London 1966

2. Chandana R.C. - A Geography of Population
Concepts, Determinants and Patterns,
Kalyani Publishers, New Delhi, 1986

3. Clark. J.I. Population Geography (Second edition)
Pergamon Press Ltd. Oxford. 1972

4. Clark. J.I. (edited) Geography of Population
Approaches & Applications
Pergamon Press, Oxford 1984.

5. M.G.Bradford & W.A.- "Human Geography"
Theories and their applications,
Oxford University Press

6. L.S.Bourne, R.Sinclair- "Urbanization and Settlement
K.Dziewonski (ed-1984) Systems, International Perspectives"
Oxford University Press.

7. Ronald V.Cook
James H.Johnson
(ed-1969) "Trends in Geography". An introductory
Survey. Pergamon Press.

8. Mahesh Chand, - "Regional Planning in India"
V.K.Puri (1983)
Allied Publishers Pvt.Ltd.,
New Delhi.

9. Peter Haggett. - "Geography-A modern Synthesis",
(1983)
Harper and Row Publishers, New York.

10. F.S.Hudson (1977)- "Geography-of settlements" ,
Macdonald and Evans.

11. R.B.Mandal (1979) - "Introduction to rural Settlements"
Concept Publishing Company,
New Delhi.

12. R.B.Mandal,
V.N.P.Sinha - "Recent trends and Concepts in
(ed-1980) Geography".
Concept Publishing Company,
New Delhi.

13. R.P.Mishra (Gene- "Population Geography"
ral Editor)
K.V.Sundaram,
Sudesh Nagia.
(eds 1983)
Heritage Publishers
New Delhi

13. R.P.Mishra(General editor) : Contributions to Indian Geography.
K.V.Sundaram.Sudesh Nagia "Population Geography"
(eds) 1983) Heritage Publishers,New Delhi.

14. R.L.Singh,K.N.Singh(1975) : "Readings in Rural Settlement Settlement Geography"
National Geographical Society of India, Varnasi.

15. Charles Whynne,Hammond : "Elements of Human Geography"
(1979) George Allen and Unwin,Lndon

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NORTH MAHARASHTRA UNIVERSITY, JALGAON

PHYSICAL AND REGIONAL GEOGRAPHY OF INDIA

COURSE No.Gg.

1. Location, space relations and geopolitical importance.

2. Geological structure, relief and drainage of the i) Peninsular and (ii) Extra peninsular India.

3. Climate- Meaning and genesis of the Indian monsoon, with reference to recent views.

   Impact of tropical easterly and subtropical westerly jet streams.

4. Soils and natural vegetation:
   Soil types, their related problems and controlling measures.
   Forest regions- Their role in Indian economy- Problems of deforestration, role of social forestry.

5. Agriculture: Development agriculture in India after independence. Agricultural regions of India, problems of Indian agriculture, ecology and agricultural development policy of India.

6. Minerals and energy resources-
   Important minerals & their role in industrial development of India. Conventional & non conventional energy resources, Demand of energy from different sectors of economy and Govt. policy for its development.

7. Industries:
   Major industrial regions of India,
   The metallurgical, machine tool & heavy engineering industries, chemical & electronic industries, textile and sugar industries.

   The industrial policy of India in the post independence period.

8. Population: Growth, stage in demographic transition,
   The problems of population explision,
   Disparities in regional economic development in relation to population.

9. The role of languages and religions in the national integration.

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BOOKS:

1) India Pakistan & Ceylon- O.H.K.Spate & Learmoths
2) Indian A regional geography- Dr.R.L.Singh.
3) Geology of India- Wadia D.N.
4) Geology of India- Krishnan M.S.
5) Geography of India - C.B.Memoria
6) Industrial geography of India- B.N.Sinha
7) Geography of India- Gopalsing
8) Indian Agriculture- A policy perspective- B.N.Bhatia.
9) Population - Dr.S.N.Agrawal.
10) India Resources and development - Johnson.
11) Geography of Himalayas - S.C. Borse.
12) The monsoons - P.K. Das.

NORTH MAHARASHTRA UNIVERSITY,
JALGAON

COURSE NO. Gg. PRINCIPLES OF CLIMATOLOGY

1. Nature and scope of climatology and its relationship with meteorology.

   The development of modern climatology: The role of satellites in weather and climatic studies.

2. The composition and structure of atmosphere. Ozone problem. Solar insolation and earth's heat balance.

3. Atmospheric pressure and winds:
   General circulation of the atmosphere and its seasonal and diurnal variations.

   Pressure gradient force, coriolis effect- geostrophic wind, jet streams.

4. Humidity and Precipitation.
   Humidity and its measurement.
   Condensation- Formation and types of precipitation,
   Stable and unstable air: Lapse rate, adiabetic rate, stable and unstable and conditional equitibrium.

5. Air masses and fronts -
   Source regions, classification and modification of air masses.

   Frontogenesis, atmosperic disturbances, Thunderstorms.

6. Classification of climates: Purpose and problems of climatic classification, bases of climatic classification, critical study of Koppen's and Thornwaite's, climatic classification.

7. Principles of weather forecasting: Meaning and scope, the methods-path, Geostrophic wind, issalloberic method.

8. Climatic changes:
   Indicators of past climates, causes of climatic changes, world climates during geological periods and recorded history.

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BOOKS:

1. Trewartha- G.T.- : An introduction to weather & climate.
2. Austin millar: Climatology.
3. Kendrew: Climate of the continents.
4. Critchchfield H.J.: General climatology.
5. Patterson S: Introduction to meteorology
6. Crowe: Concepts in climatology
7. J.D.Ayoade: Introduction to climatology in tropics.
8. Das P.K. : The monsoons.
9. Subrahmanyam V.P.: General climatology Vo.3 Heritage Pub.
10. Subrahmanyam V.P.: Applied climatology Vol.14,Heritage Pub.
11. Stringer E.T. Foundations of climatology, surjeet publication N.Delhi.

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REFERENCE BOOKS:

1. Carter Herold- The Study of Urban Geography, Edward, Arnold- 1977.
2. Charles Whynne, Hammond- Elements of Human Geography.
3. Hans Raj- Fundamental of Demography, Surjeet Pub.
4. Hudson F.S.- Geography of settlements, Macdonald and evans- 1976.
5. Michael E. and - Transportation Geography, Comments and Readings.
6. Pollard, A.H. and Farhad, Yusuf-Demographic Techniques, Pergammon Press, Australia, 1974.
7. Singh, R.L.- Readings in Rural Settlement Geography.
8. Yeats, M.H.- An Introduction to Quantitative Analysis in Human Geography, McGraw Hill New York.
9. R.B.Mandal- Statistics for Geographers & Social Scientists.
   Concept Publishing Company- New Delhi.
10. Majid Husain- Crop combinations in India, Concept publishing Company- New Delhi.

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