Morigaon College (Autonomous)
Morigaon: Assam

SYLLABUS

Geography

(MA 1st Semester)

CBCS-based P.G.Course in Geography,2016

Syllabus of Core Course

Course Name: **Nature of Geography**

Course Code: GGY-PG-MCA-1014

Course Credit/Marks: 6Credit/100Marks

(Including 20Marks for Internal Assessment)

Total No. of Lectures: 60

Course objectives:

The paper *Nature of Geography* aims at explaining the nature of the subject. It throws light on the importance of geography and attempts to enrich knowledge. The paper illustrates the basic concepts as well as technical terms which are building blocks of geographic knowledge along with understanding of sophisticated models and techniques with space-time dimension. Through this paper an understanding of the pure and applied nature of Geography along with the key elements in the discipline is possible. The paper also focuses on the relationship of Geography with natural and social sciences.

Course outcome:

- Through understanding of the basics of the subject;
- Understanding of sophisticated models and techniques;
- Interdisciplinary field–a field that crosses traditional boundaries between academic disciplines or schools of thought.

[To answers even questions, three questions carrying 16 marks each and four questions carrying 8 marks each]

1. Defining the field of Geography; Planet earth as the home of man.
2. Place of Geography in the classification of knowledge; relation of geography with natural and social sciences; multi-disciplinary nature of Geography.
3. Geography as a spatial science; Spatial Concepts in Geography: Concept of space and place; Geographic space (Absolute Space and Relative Space); Spatial Process and Pattern; Spatial Organization; Spatial Relationship; Spatial Interaction; Spatial Integration; Spatial Diffusion; Spatial Modeling; Space-Time Dimension in Geography
4. Basic Branches and Approaches in Geography: Physical and Human; Systematic and Regional; Ideographic and Nomothetic.
5. Concept of Landscape and Region.
6. Geography: Pure and Applied; Society-Environment Interface.
7. Scientific Methods in Geography: Routes to scientific Explanation: Induction and Deduction; Key elements in scientific practice.
8. Modes of explanations in Geography: Cognitive explanation, Morphmetric explanation, Cause and effect explanation, temporal modes of explanation, Functional explanation, System analysis.

9. Hagget's Integrated Approaches in Geography: Spatial Analysis, Ecological Analysis and Regional Complex Analysis.
10. Pattern-Process Model for geographic enquiry.

Books Recommended

Abler, R.., Adams, J. and Gould, P.P., 1971: *Spatial Organization: The Geographers' View of the World*, Prentice-Hall, Englewood Cliff.

Ackerman,E.A.,etal,1965:*The Science of Geography*, Washington D.C., National Academy of Science/ National Research Council Pub. No. 1277.

Adhikari, Sudeepta, 2015: Fundamentals of Geographical Thought, Orient Black swan Pvt. Ltd., New Delhi.

Chorley, Richard,J. and Haggett, Peter(eds),1967:ModelsinGeography,Methuen, London.

Chorley,Richard,J.,1973:*Directions in Geography*, Methuen, London.

Dikshit,R.D.,1994: *The Art and Science of Geography*, Prentice Hall of India, New Delhi.

Haggett, P., 2001: *Geography: A Global Synthesis*, Pearson Education, Essex, UK.

Hartshorne,R.,1939:*TheNatureofGeography*,AssociationofAmericanGeographers, Lancaster, Penn.

Hartshorne,R.,1959: *Perspective on the Nature of Geography*, Rand Mckully, Chicago.

Harvey, D., 1969: Explanation in Geography, St. Martin's Press, New York, 1969.

Johnston, R.J. etal.(eds),1986: *The Dictionary of Human Geography*, Oxford ,Basil Blackwell.

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CBCS-based P.G.Course in Geography, 2016

Syllabus of Core Course

Course Name: **Geomorphology**

Course Code: GGY-PG-MCA-1024

Course Credit/Marks: 6 Credit/100 Marks

(Including 20 Marks for Internal Assessment)

Total No. of Lectures: 60 (One Hour Each)

Course objectives:

The paper *Principles and Concepts in Geomorphology* highlights on the history of development of geographic ideas along with the recent trends in geomorphology. The paper focuses on the theoretical and conceptual bases, the techniques used in applied geomorphology along with quantitative methods and processes. The development of slopes, morphogenetic regions and geomorphic process study are also discussed in this paper.

Course outcome:

- Understanding of Principles and Concepts in Geomorphology;
- Application of geomorphic concepts and techniques in the field;
- Knowledge enrichment of glacial, fluvial and Aeolian processes.

UnitI: Principles and Concepts in Geomorphology (48Marks)

[To answer four questions, two questions carrying 16 marks each and two questions carrying 8 marks each]

1. Nature of Geomorphology. (2 lectures)
2. History of development of geomorphic ideas; recent trends in Geomorphology. (6 lectures)
3. Theoretical bases of Geomorphology: Fundamental concepts in geomorphology: uniformitarism and catastrophism; system concepts in geomorphology; steady state; and dynamic equilibrium. (14 lectures)
4. Concepts and techniques in applied geomorphology: Fluvial geomorphology, Palaeo-geomorphology, Environmental geomorphology. (6 lectures).
5. Threshold concepts and applications in geomorphology. (4 lectures)
6. Quantitative methods and techniques in geomorphology. (4 lectures)

UNITII: Processes in Geomorphology (Marks32)

[To answer three questions, onequestioncarrying16marksandtwoquestions carrying 8 marks each]

1. Geomorphic processes: endogenetic and exogenetic; Glacial, Periglacial, Fluvial, karst, coastal and Aeolian processes. (10 lectures)

2. Failure criteria: Analyzing slope stability and potential failure. (2 lectures).
3. Morphogenetic regions: concept and genesis, differential intensity and rate of operation of geomorphic processes in various morph metric regions. (4 lectures)
4. Development of slopes: slope forming processes and slope forms. (4 lectures)
5. Anthropogenic Geomorphology. (4 lectures)

Books Recommended

1. Ahmad,E.,1985: *Geomorphology*, Kalyani Publishers, New Delhi
2. Bloom, Arthur L, 1978: Geomorphology-*A Systematic Analysis of Late Cenozoic Landforms*, Prentice Hall, Englewood Cliffs, N.J.
3. Chorley, Richard J, 1972: *Spatial Analysis in Geomorphology*, Harper &Row Publishers, New York, London.
4. Chorley, Richard J.(ed),1969:*Water,EarthandMan*,Methuen&Co.London.
5. Chorley,R.J.(ed.),1969:*IntroductiontoGeographicalHydrology*,Methuen&Co.
6. Chorley, R.J.(ed),1968:*ModelsinGeography*,Methuen&Co.London.
7. Chow,V.T.,1964:*HandbookofHydrology*,McGrawHill
8. Cooke,R.U.andDoornkamp,J.C.,1974:*GeomorphologyinEnvironmentalManagement*
9. Cooke,R.U.andWarren,A.,1973:*GeomorphologyinDeserts*,Batsford,London
10. Cotton,C.A.1945:*Geomorphology,*JohnWiley&sonsInc.New York
11. Crickmay,C.H.,1974: *Work of the River,* The McMillan Press Ltd. London.
12. Dayal,P.(2ndedition),1996:*ATextbookof Geomorphology*, Shukla Book Depot, Patna
13. Derbishire,E.(ed),1976:*GeomorphologyandClimate*,Wiley, London
14. Dixit, K.R.(ed), 1983: *Contribution to Indian Geography/ Geomorphology*, Heritage, New Delhi
15. Doornkamp,J.C.andKing,C.A.M.1971: *Numerical Analysis in Geomorphology :An Introduction*, St. Martins Press, New York
16. Dury,G.H.,1959:*TheFaceoftheEarth*,PenguinBooks.
17. Dury, G.H.(ed),1966: *Essays in Geomorphology*, William Heinmann, London.
18. Embelton ,C,Brunsden, D,and Jones,D.K.C.,(ed),1978: *Geomorphology: Present Problems and Future Prospects*, Oxford University Press, London.
19. Embleton,C.andThorns,J.1979: *Processes in Geomorphology*, Arnold Heinemann, First Indian Edition, 1982.
20. Engeln,O.D.Von,1942: *Geomorphology* ,McMillan, London
21. Fairbridge,R.W.(ed),1968:*EncyclopediaofGeomorphology*,Reinhold,NewYork.
22. Faniran,A.andJeje,L.R.,1983:*HumidTropicalGeomorphology*,Longman, London.
23. Goudie,Andrew,et.Al.(eds),1981:*GeomorphologicalTechniques*,GeorgeAllen& Unwin, London.
24. Gregory,K.J.,1985: *The Nature of Physical Geography*, Edward Arnold, London.
25. Gregory,K,J.andWalling,D.E.,1973:*DrainageBasin-FormandProcess*,Edward Arnold, London
26. HailsJohn,R.(ed)1978:*AppliedGeomorphology*,ElseiverScientificPublishing Company, Amsterdam, Oxford, New York.
27. King.C.A.M.,1966: *Techniques in Geomorphology*, Edward Arnold, London.
28. Leopold, L.B.,Wolman,M.G.andMiller,J.P.,1964: *Fluvial Processes in Geomorphology*, Freeman, San Francisco.
29. Lobeek,A.K.,1939: *Geomorphology*, McGraw Hill ,New York.
30. Morisawa,MarieM.,1968:*Streams,TheirDynamicsandMorphology*,McGrawHills, New York
31. Morisawa,MarieM.(ed),1981:*FluvialGeomorphology*,GeorgeAllen&Unwin,London.
32. Morisawa,MarieM.,1985: *River Forms and Process*, Longman, London and New York.
33. Nelson,J.G.andChambers,M.J.(ed):*Geomorphology:ProcessesandMethods.*
34. Penck,W.,1924:*MorphologicalAnalysisofLandforms*,McMillan, London.

35. Petts,G.E.1983*:Rivers (Sources and Methods in Geography)*,Butterworths ,London-Boston.
36. Petts,G.E. and I.Foster,1985: *Rivers and Landscape*, Edward Arnold, London.
37. Pitty,A.F.,1971:*Introduction to Geomorphology*, Barnes and Nobel,NewYork
38. Richards,K,1982:*Rivers*, Methuen, London.
39. Scheidegger, A.E., 1970: *Theoretical Geomorphology*, Soringer- Verlag, Berlin, Heidelberg, New Work.
40. Schumm,S.A.,(ed),1977:*DrainageBasinMorphology*,DowdenHutchinson&Ross Inc.
41. Schumm,S.A,1977:*TheFluvialSystems*,Wiley,New Work
42. Sharma,H.S,(ed),1982:*PerspectivesinGeomorphology*,VolsItoIV,Concept,New Delhi.
43. Sharma, V.K., 1986: *Geomorphology, Earth Surface Processes and Forms*, Tata McGraw Hill, New Delhi.
44. Sparks,B.W.1960: *Geomorphology*, Longman, London, Second Edition.
45. Strahler,A.N.,1968: *The Earth Science*, Harper International Edition.
46. Strahler,A.N.,1969:*Physical Geography*,3rd edition, Wiley.
47. Thomas,M.F.,1974:*Tropical Geomorphology*, McMillan, London.
48. Thorn bury, W.D. 1969: *Principles of Geomorphology*, 2nd ed., Wiley International Edition, Wiley Eastern Reprin, 1984.
49. Wooldridge, S.W. and Morgan, R.S., 1948: *The Physical Basis of Geography*, Longman (First Published in 1937).
50. Worcester, P.G., 1965: AText *book of Geomorphology*, Van Nostrand, 2ndEdition, East West Edition, New Delhi.
51. Young,A,1972: *Slope*, Longman, New York, Oliver and Boyd, Edinburgh.

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CBCS-basedP.G.CourseinGeography,2016

Syllabus for Core Course

Course Name: Climatology **and Biogeography**

Course Code: GGY-PG-MCA-1034

Course Credit/Marks: 6 Credit/100 Marks

(Including 20 Marks for Internal Assessment)

Total No. of Lectures: 60(One Hour Each)

Course objectives:

The paper *Climatology and Biogeography* has been divided into two parts. While the first part discusses about the climatology, its field and importance, elements of weather, factors influencing the climate, insolation, global wind system, air masses and fronts along with climatic disturbances, monsoons and classification of world climate among others, the second part concentrates on biogeography in geographic studies. The areas of concern of this part of the paper include the important concepts of biogeography, such as bio-energy cycle, food chain, plant-animal association in varying habitats and ecosystem besides the national forest and environmental policies.

Course outcome:

- Knowledge about different phenomena of weather and climate specially vagaries of Indian monsoon and techniques of weather forecasting;
- Deeper understanding of plant-animal association in varying habitats and environments;
- Practical utility in the field while carrying out research on issues of climate and bio-geography.

Unit-I: Climatology (48Marks)

[To answer four questions, two questionscarrying16markseachandtwoquestions carrying 8 marks each]

1. Defining the field of Climatology; Importance of Climatology in geographical studies. (2 lectures)

2. Climate and Weather; Elements of Weather; factors influencing climate. (2 lectures)

3. Insolation; heat budget; atmospheric temperature; horizontal and vertical distribution of temperature. (4 lectures)

4. Atmospheric Pressure and Global Wind System: Vertical pressure gradient and horizontal pressure system; Surface winds, stratospheric winds, seasonal and local winds. (6 lectures)

5. Air masses and Fronts: Characteristics, Origin and modification of air masses ,stability and instability and their influence on weather and climate (5 lectures)

6. Meteorological hazards and disasters : cyclones, anticyclones, cloud bursts, drought, tornadoes, thunderstorms, GLOF (6 lectures)

7. Classification of World Climate: Schemes of Koppen and Thornthwaite. (5 lectures)

8. Monsoons: Mechanism of development, Distribution of monsoons, Trajectories and Irregularities, Effects of El-Nino. La-Nino, ENSO, Jet- Stream, Walker oscillation, etc (6 lectures)

9. Techniques of weather forecasting: conventional and modern (3 lectures)

10. Global warming and climate change: Causes, evidences and mitigation strategies. (4 lectures)

Unit-II Biogeography (32Marks)

[To answer three questions, one question carrying 16 marks and two questions carrying 8 marks each]

1. Defining the field of Biogeography; Its significance, development and approaches (3lectures)
2. Bio-energy cycles, Biomes: - Concepts and types. (3lectures)
3. Soil characteristic sands their significance. (3lectures)
4. Habitat, Environment and Ecosystem; Plant-Animal Association in varying habitats and environments (6lectures)
5. Concept of Bio-diversity; Conservation of forest and wildlife: Carbon Sink and carbon sequestration. (5lectures)
6. National forest and environment policies. (4lectures)

Books Recommended

Climatology

Barry, R.G. and Chorley, R.J., 1998: Atmosphere, *Weather and Climate*, Rout ledge, New York.

Critch field, H.J., 1975: *General Climatology*, Prentice Hall of India, New Delhi.

Blair, T.A., 1954: *Weather Elements*, Prentice-Hall.

Das,P.K.,1968:*The Monsoons*, National Book Trust, New Delhi.

Griffith,J.F.,1966:*Applied Climatology*, Oxford University Press.

Hobbs, J.E., 1980: Applied *Climatology*, Butter worths.

Lal,D.S.,1998: *Climatilogy*, Sharda Pustak Bhawan, Allahabad.

Lockwood,J.G.,1976:*WorldClimatology:EnvironmentalApproach*, Edward Arnold Ltd., 41 Bedford Square, Wc IB 3 Dq.

Lydolph,Paul,E.,1985: *The Climate of the Earth*, Rawman and Totowa, N.J. Miller,

A. A.,1953: Climatology, Dutton.

Rumney, George,R.,1968:*ClimatologyandWorld'sClimates*,McMillan,London.

Strahler, A.N., 1971: *Physical Geography*, John Wiley, New York

Stringer, E.T.,1982: *Foundations of Climatology.*

Hoirn,L.A.,1980:*An Introduction to Climate*, International Series.

Trewartha, G.T.and Horn,L.A.,1980: *An Introduction to Climate*, International Series.

Oliver, J.E. and Hiddore, J. J., 2002: Climatology: An Atmospheric Science, Pearson Education, Delhi.

Biogeography

Bhattacharyya, N.N., 2003: Biogeography, Rajesh Publications, New Delhi.

Bradshaw, M.J., 1979: Earth *and Living Planet*, ELBS, London. Bunting,

Goudie, Andrew, 1981: *The Human Impact*, Basil Blackwell, Oxford.

Hussain,M.(ed),1994:*Biogeography (PartI&II),*Anmol Publications Pvt. Ltd. New Delhi.

New begin: *Plant and Animal Geography.*

Odum, E.P., 1977: Ecology.

Robinson,H.,1982:*Biogeography*,E.L.B.S.,McDonald&Evans,London.

Russell, E.W., 1973: *Soil Condition and Plant Growth*, Long man, London.

Smith, R.L., 1977: *Ecology of Man-An Ecosystem Approach.*

Simmons, I.G., 1974: Biogeography: Natural *and Cultural*, London.

Tiby, 1982: *Biogeography*, Longman.

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CBCS-based P.G.Course in Geography,2016

Syllabus for Core Course

Course Name: Economic **Geography**

Course Code: GGY-PG-MCA-1044

Course Credit/Marks: 6 Credit/100 Marks

(Including 20 Marks for Internal Assessment)

Total No. of Lectures: 60 (One Hour Each)

Course objectives:

The paper *Economic Geography* aims at explaining the significance and theoretical development of this sub branch of geography along with the approaches, concepts and models. Understanding of technology and economic development, economic geography and primary activity, power resources, international trade in selected commodities are key areas of concerning this paper. Besides, the paper also highlights on pattern and problems of manufacturing of selected commodities in USA, UK and Japan.

Course outcome:

- Understanding of location, distribution and spatial organization of **economic** activities across the world;
- Knowledgeofgeographicalandotherfactorswhichinfluenceman'sproductivity;
- Knowledgeofdifferentfarmingtechniquesandmodernizationofagriculture;
- Practical utility in the field while carrying out research on agriculture and economic geography.

[To answers even questions, three questionscarrying16 marks each and four questions carrying 8 marks each]

1. Field of Economic Geography: Meaning, significance and theoretical development(4lectures)

2. Approaches to Economic Geography: Theoretical, Institutional and Problem solving(3lectures)

3. Concepts and Models in Economic Geography: Von Thunen's theory of geographic rent, Spatial Demand Cone, A. Weber , A. Losch ; E.M. Hoover and D.M. Smiths industrial location model, Suiclair's model, Rostow's model, Growth Pole model. (8 lectures)

4. Technology and Economic Development: Relation between technology and development, regional disparities in technology applications, levels of economic development-global perspective.

(5lectures)

5. Economic activities: Geography of pastoral farming, Geography of agriculture, place of agriculture in global economy, critical study of large-scale & small-scale agriculture, Regional pattern of agriculture in the world and automobile and ship building industries and ICT with special reference to Russia, Israel and China, Japan (12 lectures)

6. Modernization of Agriculture: Intensification, Crop diversification, Mixed farming. (6lectures)

7. Economic geography of power resources: Global pattern of energy production; World energy crises in Developed and developing countries. (8 lectures)

8. Economic Geography of manufacturing: Patterns and problems of manufacturing (mainly iron and steel and textiles) in the world with special reference to USA, UK and Japan. (8lectures)

9. Economic geography of International trade in selected commodities: Tea, Iron and Steel, Petroleum. (6lectures)

Books Recommended

Alexander, 1986: *Economic geography*, Prentice Hall Inc.(E.E.Edition)

Bhalla, G.S. and Tyagi, D.S., 1989: *Indian Agricultural Development*, I.S.I.D., New Delhi.

Chaudhury, M.R., 1970: Indian *Industries: Development and Location*, Oxford and IBH, Calcutta.

Das, M.M., 1984: Peasant *Agriculture in Assam*, EBH (India) Publishers, Guwahati.

Forbes, D.K., 1984: Geography of under Development, John Hopkins Univ. Press, Baltimore.

Gunner, Alexanderson, 1988: *Geography of Manufacturing*, Prentice HallInc,(E.E.Edition) Isard, W.,1956: *Location and Space Economy*, MIT Press, Cambridge.

Isard, W., 1975: Introduction *to Regional Sciences*, Engel wood, Cliffs.

Leong, G.C. and Morgan, G.C., 1992: Human and Economic Geography, Oxford University Press, New York.

Losch,A.,1954:*The Economics of Location*, New Haven.

Miller,E.W.,1977:*Manufacturing:A study of Industrial Location*, Pennsylvania State University Press, Pennsylvania.

Mohammad, N. (ed), 1992: *New Destinations in Agricultural Geography*, Concept Publishing Co., New Delhi

Pryde, P.R., 1983:Non-*Conventional Energy Resources*, Wiley, New York.

Rostov, W.W., 1960: The *Stages of Economic Growth*, Cambridge University Press, New York.

Roy, P.K .and Mukherjee,S.,1993(2nd Edition):*Economic Geography*: An Appraisal of Resources, New Central Book Agency, Calcutta.

Roy, P.(2007):Economic Geography: A Study of Resources, New Central Book Agency(P)Ltd, Kolkata.

Sharma,T.C.,2013:EconomicGeographyofIndia,RawatPublications,Jaipur.

Sushkin, Yulian, G., 1980: Economic *Geography*: Theory and Models, Progress Publishers, Moscow.

Smith, David M., 1981: Industrial Location: An Economic Geographical Analysis, Wiley, New York

Symons, L., 1979: Agricultural *Geography*, West views Press, Colorado.

Tarrant, J.R., 1980*: Agricultural Geography*, Wiley, New York.

Thomas, R.S .and Corbin, P.B., 1974: The *Geography of Economic Activity*, McGraw Hill, New York

Wheeler,J.O. and Muller,P.O.,1981:*EconomicGeography*,JohnWiley&Sons,NewYork.

CBCS-basedP.G.CourseinGeography,2016

Syllabus for Core Course

Course Name: **Practical on Geomorphology, Climatology and Economic Geography**

Course Code: GGY-PG-MCA-1054

Course Credit/Marks: 4 Credit/100Marks

(Including20MarksforInternalAssessment)

Total No. of Assignments: 40

Course objectives:

The paper highlights on *Practical utility in the field while carrying out research on issues of climate and bio-geography.* This paper has been divided into three sections. The first part - *Practical's on Geomorphology* helps in developing a deeper understanding about the morphometric analysis, analysis of basin morphology and area-height relationship study. The second part is devoted towards *Climatology*, here, ways and techniques of climatic data analysis have been discussed. The third part of this paper addresses the practical exercises on mapping and analysis of diverse issues of *Economic geography* like trend analysis, spatial analysis of crop concentration, determination of level of economic development among many others.

Course outcome:

- Practicalutilityinthefieldwhilecarryingoutresearchongeomorphology, climatology and economic geography.

Unit I: Geomorphology (39Marks)

1. Morphometric Analysis:
- (i) Profile drawing (2Assignments)
- (ii) Relative relief maps based on Smith's method (2Assignments)
- (iii) Slope maps using Wentworth's method (2Assignments)

2. Analysis of Basin Morphology:
- (i) Drainage ordering, calculation of bifurcation ratio ,length ratio, basin circularity ratio,
  Analysis of laws of stream number, stream length and drainage basin area (6Assignments)
- (ii) Preparation of drainage density, drainage frequency and drainage texture maps (3Assignments)

3. Area-Height Relationship:
- (i) Hypsometric curve and hypsometric integral (2Assignments)
- (ii) Altimetric frequency curve and histogram (2Assignments)

Unit II: Climatology (13Marks)

1. Climograph, Hythergraph and Ergograph (3Assignments)
2. Rainfall dispersion graph, rainfall variability and equipluve maps.(3 Assignments)

3. Water deficiency and surplus graphs (2 Assignments)

Unit III: Economic Geography (13Marks)

1. Spatial variation in land use and cropping pattern of North-East India using pie graph (2 Assignments)
2. Trend analysis of production of different commodities with the help of band graph and using moving average and least squares methods.(3Assignments)
3. Analysis of land holding and income pattern(2Assignments)
4. Choropleth mapping of cropping intensity of N.E.India (2 Assignments)
5. Determination of the levels of economic development using simple composite index (2Assignments)
6. Spatial analysis of crop concentration in N.E.India and Assam(2Assignments)

Books Recommended

Chorley,RichardJ.(ed),1969: *Water, Earth and Man*, Methuen& Co. London.

Chorley, R.J. (ed), 1968: *Models in Geography*, Methuen & Co. London.

Doornkamp,J.C.andKing,C.A.M.1971: *Numerical Analysis in Geomorphology: An Introduction*, St. Martins Press, New York.

Fairbridge,R.W.(ed),1968:*EncyclopediaofGeomorphology*,Reinhold,NewYork.

Faniran, A. and Jeje, L.R., 1983: *Humid Tropical Geomorphology*, Longman, London.

Goudie, Andrew,et.Al.(eds),1981: *Geomorphological Techniques*, George Allen& Unwin, London.

Gregory, K,J.andWalling,D.E.,1973:*DrainageBasin-FormandProcess*,Edward Arnold, London.

King.C.A.M.,1966: *Techniques in Geomorphology*, Edward Arnold, London.

Leopold, L.B., Wolman, M.G. and Miller, J.P., 1964: *Fluvial Processes in Geomorphology*, Freeman, San Francisco.

Misra,R.P.,andRamesh,A.,1989:*FundamentalsofCartography*,ConceptPublishingco.New Delhi.

Monkhouse,F.J.,andWilkinson,H.R.,1989:*MapsandDiagrams*,B.I.,PublicationsPvt. Ltd., New Delhi.

Petts,G.E.andI.Foster,1985:*RiversandLandscape*,EdwardArnold,London.

Singh,R.L.andSinghRana,P.B.,1998: *Elements of Practical Geography*, Kalyani Publishers, New Delhi.

Strahler,A.N.,1969: *PhysicalGeography*,3rd edition,Wiley.

Anderson,T.W.,1958:*IntroductiontoMultivariateStatisticalMethod*,JohnWiley& sons,

New York.

Berry,B.J.L.andMarble,D.F.,1968:*SpatialAnalysis:AReaderinStatisticalGeography*, Prentice-Hall, Inc.

Chorley ,R.J.and Haggett,P.,(ed),1968:*ModelsinGeography*,Methuen&Co.Ltd. Fitgerald,

Brian, P., (General editor): *Science in Geography*, Series 1 to 4, Oxford University Press.

Gregory,S.,1978: *Statistical Methods and the Geographers*, Longman.

Hammond, R. and McCullagh,P.,1977: *Quantitative Techniques in Geography*: *An Introduction*, Clarendon Press.

Johnston,R.J.,1978:*MultivariateStatisticalAnalysisinGeography*,Longman. King,

L.J., 1969: *Statistical Analysis in Geography*, Prentice Hall. Inc.

Mahmood,A.,2005:*StatisticalMethodsinGeographicalStudies*,RajeshPublications,New Delhi.

Sarkar,Ashis.,2008:PracticalGeography:ASystematicApproach,OrientBlackSwan,NewDelhi.