# NORTH EASTERN HILL UNIVERSITY

## SHILLONG

# REVISED UNDERGRADUATE SYLLABUS

# GEOGRAPHY

2019

## Features of UG Syllabus in Geography for CBCS Curriculum

1. As the CBCS Curriculum (a) *Arts Stream students* will have to complete three semesters Elective Papers and one semester English and MIL/Alt. English paper and (b) *Science Stream students* will have to complete four semesters with Elective Papers.

2. In the 'Arts Stream' Geography Honours students can opt for any two of the following elective subjects:

(i) Political Science (ii) Economics (iii) History (iv) Sociology (v) Anthropology

(vi) Philosophy (vii) Education

3. In the 'Science Stream' Geography Honours students can opt for any two of the following elective subjects:

(i) Botany (ii) Zoology,(iii) Chemistry (iv) Physics (v) Mathematics (vi) Geology

(vii) Environmental Science (vii) Statistics

4. Geography Honours students will have to prepare a Project Report in Sixth Semester. The report will carry 25 marks (19 marks for the report and viva-voce + 6 marks for Internal Assessment). Out of 19 marks, 14 marks will be for the report and 5 marks for Viva-voce. The Topic of the project is to be related the optional paper of the student. Students are to conduct an independent research (study) of a small areal unit (village/town/ town ward/wards etc).

# Revised UG Syllabus in Geography for CBCS Curriculum Structure

## Arts Stream:

| Category | SEMESTER | | | | | | Total Papers |
|---|---|---|---|---|---|---|---|
| | I | II | III | IV | V | VI | |
| English | | | | 1 | 1 | | 2 |
| Environmental Studies | | | | | | 1 | 1 |
| MIL/Alt. Eng | | | | 1 | | | 1 |
| Elective I | 1 | 1 | 1 | | | | 3 |
| Elective II | 1 | 1 | 1 | | | | 3 |
| Elective (Hon) | Human Geography | Physical Geography | Geography of India | Economic Geography | • Regional Geography of India<br>• Map Reading, RS & GIS** | • Geography of Resources<br>• Optional Papers | 8 |
| Marks Distribution | Theory - 19:56=75 (Internal evaluation : External evaluation) | | | | | | |
| | Practical - 06:19=25 (Internal evaluation : External evaluation) | | | | | | |
| | ** Map reading, RS & GIS: Theory - 12:38 = 50 & Practical - 12:38 = 50 | | | | | | |

## Science Stream:

| Category | SEMESTER | | | | | | Total Papers |
|---|---|---|---|---|---|---|---|
| | I | II | III | IV | V | VI | |
| English | | | | | 1 | | 1 |
| Environmental Studies | | | | | | 1 | 1 |
| MIL/Alt. Eng | | | | | | | |
| Elective I | 1 | 1 | 1 | 1 | | | 4 |
| Elective II | 1 | 1 | 1 | 1 | | | 4 |
| Elective (Hon) | Human Geography | Physical Geography | Geography of India | Economic Geography | • Regional Geography of India<br>• Map Reading, RS & GIS** | • Geography of Resources<br>• Optional Papers | 8 |
| Marks Distribution | Theory - 19:56=75 (Internal evaluation : External evaluation) | | | | | | |
| | Practical - 06:19=25 (Internal evaluation : External evaluation) | | | | | | |
| | ** Map reading, RS & GIS: Theory - 12:38 = 50 & Practical - 12:38 = 50 | | | | | | |

## Credit Distribution and Outline of Courses for Honours and Pass (Geography)

| Semester | Paper No. & Title | Paper (Th./Prac.) | Credits | Marks division ( Internal +External) | Total Marks | Total Credits |
|---|---|---|---|---|---|---|
| I (Hons. and Pass) | Paper I (GE: 101) Human Geography | Theory | 3 | 19 + 56 =75 | 100 | 4 |
| | | Practical | 1 | 06+19 = 25 | | |
| I (Hons. and Pass) | Paper II (GE: 201) Physical Geography | Theory | 3 | 19 + 56 =75 | 100 | 4 |
| | | Practical | 1 | 06+19 = 25 | | |
| III (Hons. and Pass) | Paper III (GE: 301) Geography of India | Theory | 4 | 25 + 75 | 100 | 4 |
| IV (Hons.) and Pass for only Science Stream | Paper IV (GE: 401) Economic Geography | Theory | 3 | 19 + 56 =75 | 100 | 4 |
| | | Practical | 1 | 06+19 = 25 | | |
| V (Hons.) | Paper V (GE: 501) Regional Geography of North East India | Theory | 4 | 25 + 75 | 100 | 4 |
| | Paper VI (GE: 502) Map Reading, RS, GIS and Surveying | Theory | 2 | 12+38= 50 | 100 | 4 |
| | | Practical | 2 | 12+38= 50 | | |
| VI (Hons.) | Paper VII (GE: 601) Geography of Resources | Theory | 4 | 25 + 75 | 100 | 4 |
| | Paper VIII (GE: 602) Optional Paper (Any one from the following): (a) Geomorphology (b) Biogeography (c) Population Geography (d) Urban Geography (e) Agricultural Geography | Theory | 3 | 19 + 56 =75 | 100 | 4 |
| | | Project | 1 | 06+19 = 25 | | |

Semester-I

Paper: I ( GE 101 )
HUMAN GEOGRAPHY
(Pass and Honours)

PART A: Theory Credits: 3 Marks 75 (Internal: 19)

(In the End Semester Examination, students are to answer 5 questions out of 10 selecting at least ONE from each unit. Unit 1 will carry 12 marks while the remaining units will carry 11 marks each)

**Unit 1- Introduction to Geography**

(i) Definition, Nature & Scope of Geography, Branches & Sub Branches (ii) Geography as a study of relationship between man and environment (Determinism/Possibilism/Neo-Determinism approaches), (iii) Relationship of Geography with other subjects Economics/sociology/history/botany/zoology/statistics).

**Unit II – History of Development of Geography**

Development of Geographical Thought: (i) Classical period: Greeks and Romans; (ii) Medieval period: Arabs; (iii) Modern: Alexander von Humboldt, Carl Ritter and Vidal de la Blache

**Unit-III - Social Geography**

(i) Definition, Nature & Scope (ii) Racial Strains in Human Population and their distribution (iii) Languages and their distribution (iv) Religion and their distribution

**Unit-IV - Population Geography**

(i) Definition, Nature &Scope (ii) Growth, distribution, density of human population in the world (iii) Demographic Transition model (iv) Concepts of optimum, over and under population

**Unit - V - Settlement Geography**
(i) Definition, Nature & Scope (ii) Types and pattern of rural settlements
(iii) Functional classification of urban settlement (iv) Concept of Towns, Cities, Metropolis, Conurbation.

**Part B- Practical** Credit 1 Marks 25 Time: 3Hrs (Internal:6)

(In the End Semester Examination, students are to attempt 2 questions out of 3. Question will carry 7 marks each. Practical Notebook will carry 3 marks & Viva voce will carry 2 marks)

(i) Scale of Maps: Enlargement and reduction of maps (square method)
(ii) Types of cartographic symbols and their uses: Population distribution maps (with uniform dots, spheres and choropleth methods)
(iii) Representation of Social Data ( Language & Religion) using pie diagram

References and Suggested Readings


Bergman,E.F.(1995): **Human Geography-Culture, Connections and Landscape,** Prentice Hall, New Jersey.

Chisholm,M.(1975):**Human Geography**, Penguin Books, Hermondsworth.

Cunningham, Lawrence et al., (1982): **Culture and Values**, Hort, Rinehart and Winston, New York.

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Dikshit R.D.(2000): **Geographical Thought-A Contextual History of Ideas** ,Prentice Hall of India, New Delhi.

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Hartshorne, R. (1959): **Perspective on the Nature of Geography**, McNally and Co., Chicago.

Harvey, D.(1972): **Explanations in Geography,** Edward-Arnold, London.

Hazra, Jayati et al., (1977): **Dimensions of Human Geography**, Rawat Publications, Jaipur.

Holt, J.A. (2001): **Geography; Its History and Concept**, Longman, London.

Hopkins, I. (1982): **An Introduction to Human Geography**, Widenfeld and Nicolson, London.

Husain, M. (1984): **Evolution of Geographical Thoughts**, Rawat Publications, Jaipur.

James, R. (2000): **Contemporary Human Geography**, Dorling-Kindersley Publications, London.

James, R.(2010): **The Cultural Landscape-An Introduction to Human Geography,** Prentice Hall of India, New Delhi.

James, P.E. (1980): **All Possible World: A History of Geographic Ideas**, Sachin Publications, Jaipur.

James, R. (2010): **The Cultural Landscape-An Introduction to Human Geography,** Prentice Hall of India, New Delhi.

Jhonston, R.J. et al., (1991):**The Dictionary of Human Geography(3rd Edition, Reprint),** Blackwell Publishers, U.K.

Knox, P.L. and Marston Sallie (2001): **Places and Regions in Global Context: Human Geography(2nd Edn.),** Prentice Hall, New Jersey.

Kobayashi, A. and Mackenzie, S. (1989): **Remaking Human Geography**, Unwin Hyman, Boston.

Minshull, R. (1970): **The Changing Nature of Geography,** Huchinston University Library, London.

Mohammad, N. (2008): **Practical Work in Geography**, Sunflower Publishers, New Delhi.

Monkhouse, F.J. and Wilkinson H.R. (1989): **Maps and Diagrams(Reprint)**, B.I. Publications, New Delhi.

Orford, E.J. (1935): **Senior Practical Geography,** University of London, London.

Perpillau, A.V. (1979): **Human Geography(2nd Edn.),** Longman, England.

Raisz, E. (1985): **Principles of Cartography**, McGraw Hill, New York.

Robinson, A.H. (1985): **Elements of Cartography,** John Willey & Sons. New York.

Sarkar, A. (1997): **Practical Geography**, Orient Longman, Kolkata.

Singh, Gopal (1998): **Map Work and Practical Geography,**Vikas Publishing, New Delhi.

Singh, L.R.(2006): **Fundamentals of Practical Geography,** Sharda pustak bhawan, Allahabad.

Singh, L.R. (2002): **Fundamentals of Human Geography**, ShardaPustakBhawan, Allahabad.

Singh. R.L. (1979): **Elements of Practical Geography** Kalyani Publishers, New Delhi.

Talukdar, S. (2008): **Introduction to Map Projections**, EBH Publishers, Guwahati.

Wooldridge, S.W. (1956): **The Geographer as Scientist**, Thomas Nelson and Sons Ltd., London.

Semester-II

Paper II (GE: 201) PHYSICAL GEOGRAPHY
(Honours and Pass)

Part A-Theory Credits 3 Marks 75 (Internal: 19)

(In the End Semester Examination, students are to answer 5 questions out of 10 selecting at least ONE from each unit. Unit 1 will carry 12 marks while the remaining units will carry 11 marks each)

**Unit-I : Geomorphology**

(i) Concept, Nature and Scope (ii) Geological Timescale (iii) Plate Tectonics (iv) Exogenetic geomorphic processes: weathering, mass wasting (v) Concept of landform development (Davis & Penck)

**Unit-II : Climatology**

(i) Definition, Nature and Scope (ii) Heat Budget and heat balance (iii) Classification of Air masses, fronts, cyclones and anti-cyclones (iv) Koppen's scheme of classification of world climate

**Unit-III : Oceanography**

(i) Definition, Nature and Scope (ii) Ocean floor configuration (Pacific, Atlantic & Indian) and Ocean deposits (iii) Ocean Currents (Pacific, Atlantic & Indian) (iv) Coral reefs: classification

**UNIT IV : Biogeography**

(i) Concept, Nature and Scope (ii) Global distribution of plants (iii) Global distribution of plants and animals (iv) Concept of biomes: Tropical forest & Grassland biomes (iv) Biodiversity: concept and significance

**UNIT V : Pedology**

(i) Factors of Soil formation (ii) Soil forming processes (iii) Physical & Chemical Properties of Soil (iv) Soil Profiles (laterite, podzol, chernozem).

Part B- Practical Credit 1 Marks 25 Time: 3Hrs (Internal: 6)

(In the End Semester Examination, students are to attempt 2 questions out of 3. Question will carry 7 marks each. Practical Notebook will carry 3 marks & Viva voce will carry 2 marks)

(i) Interpretation of landforms with the help of Serial, Superimposed, Projected and Composite profiles (Toposheets of Survey of India); Slope Analysis: Smith's Method
(ii) Morphometric Analysis of Drainage Basins: Stream Ordering and Drainage Frequency
(iii) Representation of temperature and rainfall data ( Hythergraph and Climograph)

References and Suggested Readings


Ahmad, E.(2001): **Geomorphology,** Kalyani Publishers, New Delhi.

Ahmad, E.(2001): **Physical Geography (Reprint),** Kalyani Publishers, New Delhi

Birch, T.W. (1968): **Maps: Topographical and Statistical,** Clarendon Press, Oxford.

Christopherson, R.W. (2011): **Geosystems: An Introduction to Physical Geography,** Prentice Hall, New Jersey.

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Gabler, R.E., Pettersen, J.F., and Trapasso, L.M. (2006): **Essentials of Physical Geography (8th Edition),**Cenegage Learning, USA.

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Kale, V.S. and Gupta Abhijit (2001): **Introduction to Geomorphology,** Orient Longman, Calcutta.

Khan, Md. Z. A. (1998): **Textbook of Practical Geography,** Concept Publishing, New Delhi.

Kumar, A. (2008): **Biodiversity and Environmental Management,** DVS Publ., New Delhi.

Lal, D.S. (2005): **Climatology,**Sharda Pustak Bhawan, Allahabad.

Lal, D.S. (2009): **Physical Geography,** ShardaPustakBhawan, Allahabad.

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Mohammad, N. (2008): Practical Work in Geography, Sunflower Publishers, New Delhi.

Monkhouse, F.J. and H.R.Wilkinson (1989): **Maps and Diagrams(Reprint),** B.I. Publications, New Delhi.

Negi, B.S. (2002): **Climatology and Oceanography,** Kedar Nath Ram Nath, Meerut.

Negi, B.S. (2000): **Physical Geography,** Kedar Nath Ram Nath, Meerut

Pettersen, J.F., Sack, D., and Robert, E. (2010): **Fundamentals of Physical Geography,** Cenegage Learning, USA.

Sharma, Y.K. (2007): **Physical Geography,** Lakshmi Narain Agarwal, Agra.

Singh, S. (1998): **Geomorphology,** Prayag Pustakalaya, Allahabad.

Strahler, A.N. and Strahler, A.H. (1992): **Modern Physical Geography,** John Willey & Sons, New York.

Thompson, R.D. et al., (1986): **Processes in Physical Geography,** Longman, London.

Thornbury, W.D. (1960): **Principles of Geomorphology,** John Willey & Sons, New York.

Trewartha, G.T. (1980): **An Introduction to Climate,** McGraw Hills, New York.

Wooldrige, S.W. and Morgan, R.S. (1959): **The Physical Basis of Geography-An Outline of Geomorphology,** Longman Green & Co., London.


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Semester-III

Paper III: GE 301
GEOGRAPHY OF INDIA
(Honours)
Theory Credits 4 Marks 100 (Internal: 25)

(In the End Semester Examination, students are to answer 5 questions out of 10, selecting at least 1 from each unit. The questions will be of equal value, carrying 15 marks each)

**Unit-I Physical Environment**

(i) Physiography (ii) Climate and Climatic regions (Koppen's scheme) (iii) Soil and (iv) Natural Vegetation

**Unit-II Human Environment**

(i) Growth, Distribution and density of population in India since Independence and associated problems (ii) Population composition: Literacy (iii) Urban growth and process of Urbanisation

**Unit-III: Resource Base**

(i) Forest (flora) (ii) Energy (coal, petroleum, uranium) (iii) Minerals (iron ore, manganese & bauxite) (iv) Agricultural resources (tea, rubber, rice, wheat, cotton)

**Unit-IV: Economic Regions**

(i) Agricultural Regions (ICAR, 1982) and their characteristics (ii) Industrial belts and their characteristics (iii) Modes of transportation and its distribution (Road, Railway & Inland Waterways)

**Unit-V: Basis of Regionalisation**

(i) Spate's & R.L. Singh's Scheme of Regional Division of India (ii) Detailed Study of Any One Macro region under (a) Physiography (b)Climate (c) Drainage (d) Soil (e) Natural Vegetation

**References and Suggested Readings**


Ahmad, A. (1999): **Social Geography**, Rawat Publications, Jaipur.
Gautam, A. (2006): **Advanced Geography of India**, Sharda Pustak bhawan, Allahabad.
Gopalakrishnan, R. (1991): **North-East India: Land, People and Economy**, Vikash Publishing House, New Delhi.
Khullar, D. (2000): **India-A Comprehensive Geography**, Kalyani publishers, New Delhi.
Mathur, S. M. (2004): **Physical Geography of India**, National Book Trust of India, New Delhi.
Nag, P. and Roy, P. (1998): **Geography of India**, Concept Publications, New Delhi.
Paul, S. (1967): **Physical Geography of India**, Orient Longman, Calcutta.
Shafi, M. (2000): **Geography of South Asia**, McMillan &Co., Calcutta.
Singh, R.L. (1971): **India: A Regional geography**, The National Geographic Society, Varanasi.
Spate, O.H.K. and A.T. Learmonth (1967): **India and Pakistan: A General and Regional Geography**,Methuen & Co., London.
Taher, M and Ahmed, P. (1998): **Geography of North East India**, Eldorado Publications, Guwahati.

Tirtha, R. (1996): **Geography of India,** Rawat Publications, Jaipur.
Tirtha R. and Gopal Krishnan R. (1996): **Emerging India,** Rawat Publications, Jaipur.

## Semester IV

## Paper IV : GE 401
## ECONOMIC GEOGRAPHY
## (Honours)

**Part A- Theory** **Credits 3** **Marks 75 (Internal: 19)**

(In the End Semester Examination, students are to answer 5 questions out of 10 selecting at least ONE from each unit. Unit 1 will carry 12 marks while the remaining units will carry 11 marks each)

### Unit -I Basic Concepts

(i) Definition , Nature and Scope (ii) Evolution of the world economic systems (iii) Growth and Development (iv) Basic characteristics of developed and developing Economies

### Unit-II Resources and Economic Activities

(i) Concept and Classification of Resources (ii) Sectors of Economy: Primary, Secondary, Tertiary , Quaternary, Quinary

### Unit-III Primary Sector and Related Activities

(i) Agricultural systems of the World (Whittlesey): (a) Intensive subsistence (b) Commercial grain farming and (c) Plantation farming (ii) Von Thunen's Theory (iii) World distribution of Crude Oil, Coal, Iron ore.

### Unit-IV Secondary Sector and Related Activities

(i) Factors affecting location of industry (ii) Theory of Industrial Location (Weber) (iii) Classification of manufacturing industries (iv) World distribution of Iron and Steel, Automobiles and Petrochemical Industries

### Unit-V Tertiary, Quaternary and Quinary Activities

(i) Modes of transportation: Land & Water (ii) Trade Blocs: South Asia, Asia-Pacific, Principal Trade Routes (Panama, Suez) (iii) Service industries: Tourism (iv) Knowledge services- ITES and IT services

**Part B- Practical** **Credit 1** **Marks 25 Time: 3 Hrs** **(Internal: 6)**

(In the End Semester Examination, students are to attempt 2 questions out of 3. Question will carry 7 marks each. Practical Notebook will carry 3 marks & Viva voce will carry 2 marks)

Application of statistical techniques in analysis of economic data:

(i) Frequency Distribution and Measurement of central tendency (Mean, Median and Mode)
(ii) Measures of dispersion (Mean and Standard deviation); Bi-variate Co-relation, Regression analysis and students 't' test
(iii) Use of time series analysis and Index numbers in geographical studies

References and Suggested Readings


Alexander, J.E. (1974): **Economic Geography,** Prentice Hall; New Jersey.

Berry, Blij L., et al., (1991): **Global Economy,** Prentice Hall Englewood Cliffs, New Jersey.

Boesch, H. (1964): **Geography of World Economy,** D. Van Nostrand Co., New York.

Chapman Mc Grew, J. and Monroe, C.B. (2000): **An Introduction to Statistical Problems Solving in Geography,** McGraw Hills, New York.

Clarke William A.V. and Hosking, P.L. (1986): **Statistical Methods for Geographers,** John Willey, New York.

Cryson, J., Henry, N., Keeble, D. and Maertin, R. (2004): **The Economic Geography Reader,** John Willey & Sons. Ltd., Chichester.

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Hartshorne, T.N. and Alexdander, J.W. (1988): **Economic Geography,** Prentice Hall, New Delhi.

King, L.J. (1969): **Statistical Analysis in Geography,** Prentice Hall, New York.

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Mamoria, C.B.(1997): **Economic and Commercial Geography of India,** Shiva Lal Publications, Agra.

Miller, E. (1962): **Geography of Manufacturing Industries,** Prentice Hall, New York.

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Peet, Richard (1999): **Theories of Development,** Rawat Publication, Jaipur.

Raza, M. and Agarwal, Y. (1986): **Transport Geography of India,** Concept Publishing, New Delhi.

Rogerson, P.A. (2010): **Statistical Methods for Geography:** A Student's Guide, Sage Publication, Kolkata.

Roy, Prithwish Kumar (1986): **Economic Geography** New Central Book, Kolkata.

Sarkar, A. (2015): **Practical Geography: A systematic approach,** Orient BlackSwan, New Delhi

Singh, R.L. (1998): **Elements of Practical Geography (Revised),** Kalyani Publishers, New Delhi.

Smith, D.M. (1971): **Industrial Location-An Economic Geographical Approach,** John Willey, New York.

Thakur, A.K. (2011): **Economic Geography and Development,** Lakshi Publ., Guwahati.

Thomas, R. S. (1962): **The Geography of Economic Activities,** McGraw Hill, New York.

Semester V

## Paper V: GE5 501
## REGIONAL GEOGRAPHY OF NORTH EAST INDIA
## (Honours)

Theory Credit 4 Marks 100 (Internal: 25)

(In the End Semester Examination, students are to answer 5 questions out of 10, selecting at least 1 from each unit. The questions will be of equal value, carrying 15 marks each)

**Unit-I: Physical Environment of North East India**

(i) Physical Setting. Location, Physiography, Climate, Drainage, Soil, Natural Vegetation

**Unit-II: Demographic Dimensions**

(i) Population growth since Independence (ii) Population distribution, density (iii) Age-Sex composition (iv) Literacy (v) Migration

**Unit – III: Social Dimension**

(i) Racial strains in Population (ii) Tribe (iii) Language (iv) Religion

**Unit – IV: Economic Dimension**

(i)Agriculture: types and characteristics of agricultural practices (ii) Shifting Cultivation: Characteristics, Problems and Consequences (iii) Mineral and Energy resources (limestone, silliminite, coal, oil and hydro) (iv) Industries (Oil refining, Petrochemical, Small scale and cottage, Tourism)

**Unit – V: Development & Contemporary Issues**

(i) Transportation (Land: Road & Railway; Inland Waterway), (ii) Communication – problems and prospects (iii) Integrated Rural Development and Planning for Backward Area (iv) Act East Policy

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## References and Suggested Readings


Dikshit, K.R. et al (2014): North-East India: Land , People and Economy, Advances in Asian Human Environment Research, Springer, New York-London.

Gopalakrishnan, R. (1991): **North-East India: Land, People and Economy,** Vikash Publishing House, New Delhi.

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Barpujari, H.K. (1970): **Problems of the Hill Tribes of North East India**, Volume 1, Lawyers Book Stall, Gauhati.

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Nongkynrih, A.K. (2010): **Scheduled Tribes and the Census: A Sociological Inquiry**, in Economic and Political Weekly, XIV (19); 43-47.

Hazarika, Joysankar(1996): **Geopolitics of North East India: A Strategical Study**.

Sharma,Suresh Kant & Usha Sharma (2015): **Discovery of North-East India: Geography, History, Culture, Religion, Politics, Sociology, Science, Education and Economy. North-East India**. Volume one, Volume 1, Mittal Publications.

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Col Ved Prakash, (2006): **Encyclopaedia of North-East India**, Vol. 1.

T.Raatan (2004); "**Various Ethnic Groups," Encyclopaedia of North- East India**, Volume 3, Kalpaz Publications, Delhi- 110052, p 17.

Bhattcharyya, Narendra(2009): North East India: A Systematic Geography.

Semester- V

## Paper VI: GE 502
## MAP READING, RS, GIS AND SURVEYING
## (Honours)

Part A- TheoryCredits 2 Marks 50 (Internal: 12)

(In the end semester examination, students are to answer 4 questions out of 8, selecting one from each unit. Unit 1 & 2 carry 10 marks each and Unit 3 & 4 carry 9 marks each)

**Unit-I: Map Reading**

(i) History of Map-making (ii) Types of Maps and their functions (iii) Map Reading Techniques: Concepts of point, line and area (iv) Map projections: Definition, Classification

**Unit-II: Field Survey**

(i) Importance of Field Study in Geography (ii) Field Techniques in data collection: Physical & Socio-economic Survey (Household Schedule and Focused Group Discussion)

**Unit-III: Remote Sensing**

(i) Definition, Nature and importance (ii) Historical background (iii) Basic Principles (iv) Components (v) Applications

**Unit IV: GIS**

(i) Definition, Nature and importance (ii) Historical background (iii) Basic Principles (iv) Components (v) Applications

Part B- Practical Credits 2 Marks 50 (Internal:12) ( 4½ Hours)

(In the end semester examination students are to answer any 3 questions selecting at least 1 from each unit. The questions are of equal value, each question carrying 10 marks. The Viva-voce and Practical Notebook carries 4 marks each)

**Unit I: Projections**

(1) Zenithal Gnomonic Projection (ii) Simple Conical Projection with Two Standard Parallels (iii) Cylindrical Equal Area Projection

**Unit II: Surveying**

(i) Plane Table Survey- Land survey to establish linear measurement (Radial method)
(ii) Prismatic Compass: Open and Closed traverse survey
(iii) Transit Theodolite: Preparation of contour maps

**Unit II: Remote Sensing & Geographical Information System**

(i) Visual interpretation of land use and land cover mapping using aerial photo and satellite imagery
(ii) Map digitization and co-ordinate registration using GIS software

## References and Suggested Readings

Books on Projection:


Archer, J. E. and Dalton, T.H. (1968): **Field Work in Geography**, William Clowes and Sons Ltd., London.

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Steingberg, S. J. and Steingberg, Sheila S. (2006): **GIS: Geographical Information System for Investigating Space and Place**, Sage Publications, London.

Stilwel, J. and Clarke, G.(2004): **Applied GIS and Spatial Analysis**, John Willey & Sons, USA.


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Semester-VI

Paper VII: GE 601

GEOGRAPHY OF RESOURCES

Theory Credits 4 Marks 100 (Internal: 25)

(In the End Semester Examination, students are to answer 5 questions out of 10, selecting 1 from each unit. The questions will be of equal value, carrying 15 marks each)

**UNIT-I Basic Concepts**

(i) Concept, Classification and Significance of Resources (ii) Concept of Human Resource (iii) Population-Resource Relationship ( Ackerman's) (iv) Concept of Human Development Index

**UNIT-II Biotic Resources**

(i) Global distribution of Forest Resources (ii) Global distribution of marine fishing: over-fishing and consequences (iii) Global biodiversity& hot-spots

**UNIT-III: Abiotic Resources**

(i) Global distribution of Energy (Hydro, Atomic &Non-Conventional) (ii) Distribution of Ferrous (Iron ore, Bauxite, Copper) & Non-ferrous minerals (Limestone, Gypsum) (iii) Marine resources (excluding Fishing)

**UNIT-IV: Resource, Environment and Development**

(i) Environment –Development dilemma (ii) Territorial conflict in use of water resources (Indus & Cauvery) (iii) Environmental consequences of natural resource consumption: Pollution (air, water & land) and Global warming

**UNIT- V: Resource Conservation**

(i) Global arable land, food resources and food security (ii) Principles of conservation: efficiency in uses, recycling & substitutions (iii) Concept of sustainability

**References and Suggested Readings**


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Coe, N., Kelly, P. and Yeung, H.W.C. (2007): **Economic Geography: A Contemporary Introduction**, John Wiley and Sons, New York.

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## Semester VI

## Paper VIII : GE 602
## (Honours-Optional)
## (One of the given Optional Papers MUST be chosen)

## Paper VIII – GE 602 (a) GEOMORPHOLOGY

**Part A- Theory Credits 3 Marks 75 (Internal: 19)**

(In the End Semester Examination, students are to answer 5 questions out of 10 selecting at least ONE from each unit. Unit 1 will carry 12 marks while the remaining units will carry 11 marks each)

**Unit-I Fundamentals**

(i) Definition, nature and scope of Geomorphology (ii) History of development of geomorphic ideas- Classical and Modern (iii) Historical and Regional approaches to the study of Geomorphology

**Unit-II Geomorphic Processes**

(i) Endogenetic and Exogenetic Forces/Processes: Weathering and Mass Wasting processes (ii) Evolution of slope (iii) Processes of erosion, transportation and deposition and resultant landforms associated with work of running water, wind and glacier

**Unit-III Evolution of Landforms**

(i) Evolution of landforms and drainage with special reference to folded and faulted structure
(ii) Concepts of stream ordering given by Horton and Strahler (iii) Development of drainage systems and patterns

**Unit-IV Concept of Base Level and Erosion Surfaces**

(i) Concepts of base level, graded profile and poly-cyclic erosion (rejuvenation of cycles)
(ii) Concepts of erosion surfaces- identification and characteristics of Peneplain and Pediplain

**Unit-V Regional Geomorphology**

(i) Detailed geomorphological study of: (i) Eastern Himalaya Mountain (ii) Chottanagpur Plateau
(iii) Ganga Valley

**Part B- Project Credit 1 Marks 25 (Internal:6)**

(The Topic of the project is to be related to the optional paper of the student. Students are to conduct an independent research (study) of a small areal unit (village/town/ town ward/wards etc) from their respective district and are to collect necessary primary and secondary data. The data are to be used for preparation of the Project Report using suitable cartographic, statistical, RS and GIS techniques wherever necessary)

**(Mark distribution – 14 marks for Project Report and 5 marks for Viva-voce)**

## Reference and Suggested Reading


Ahmed, E. (2004): **Geomorphology (reprint),** Kalyani Publ., Ludhiana,

Bloom, A.L. (1978): **Geomorphology-A System of Late Cenozoic Landforms,** Prentice Hall, New Delhi.

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Cooke, R. U. and Doornkamp, J.C. (1974): **Geomorphology & Environmental Management – An Introduction.** Clarendon Press. Oxford.

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Dur, G.H. (1959): **The Face of the Earth,** Penguin, Harmondsworth .

Mitchell, C. W. (1973): **Terrain Evaluation,** Longman, London.

Ollier, C. D. (1979); **Weathering,** Longman, London.

Pitty, A. F. (1971): **Introduction to Geomorphology,** Methuen, London.

Sharma, H. S. (ed.) (1980): **Perspectives in Geomorphology.** Concepts, New Delhi,

Singh, S. (1998); **Geomorphology,**Prayag Pustak Bhavan, Allahabad.

Skinner, B. J. and Porter, S.C. (1995): **The Dynamic Earth.** John Wiley, New York.

Sparks, B. W. (1960): **Geomorphology,** Longman, London.

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## Paper VIII- GE 602 (b) BIOGEOGRAPHY

**Part A- Theory Credits 3 Marks 75 (Internal: 19)**

(In the End Semester Examination, students are to answer 5 questions out of 10 selecting at least ONE from each unit. Unit 1 will carry 12 marks while the remaining units will carry 11 marks each)

**Unit-I: Fundamentals**

(i) Nature, Scope and Significance (ii) Historical development of Biogeography (iii) Nature of biosphere (iv) Basic ecological principles

**Unit-II: Distribution of Plants and Animals**

(i) Geographical distribution of plants and animals (ii) Factors influencing their distribution (biotic, abiotic, anthropogenic and historical) (iii) Phyto-geographic and zoo-geographic regions of the world

**Unit-III: Concept and Types of Ecosystem**

(i) Concept of Ecosystem, Tropic Level, Food Chain, Food Web and Transfer of Energy (ii) Types of ecosystems: Terrestrial (grassland and desert ecosystem) and Aquatic (wetland and marine ecosystem)

**Unit-IV: Biodiversity**

(i) Concept of Biodiversity (ii) Biodiversity loss and its conservation (iii) Biodiversity 'hot spots' of the world (iv) Status of Biodiversity in North-East India

**Unit-V: Conservation and Management of Ecological Regions**

(i)Study of the following ecological regions of India in relation to plant and animal diversity, interrelations, problems, conservation and management:

(i) Tropical Rain Forest
(ii) Mangroves

**Part B- Project Credit 1 Marks 25 (Internal: 6)**

(The Topic of the project is to be related the optional paper of the student. Students are to conduct an independent research (study) of a small areal unit (village/town/ town ward/wards etc) from their respective district and are to collect necessary primary and secondary data. The data generated are to be used for preparation of the Project report using suitable cartographic, statistical, RS and GIS techniques wherever necessary)

**(Mark distribution – 14 marks for Project Report and 5 marks for Viva-voce)**

## References and Suggested Readings


Bansereau, M. (1957): **Biogeography-An Ecological Perspective**, Ronald Press, New York.

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## Paper VIII GE 602 (c) POPULATION GEOGRAPHY

**Part A- Theory** **Credits 3** **Marks 75** **(Internal: 19)**

(In the End Semester Examination, students are to answer 5 questions out of 10 selecting at least ONE from each unit. Unit 1 will carry 12 marks while the remaining units will carry 11 marks each)

**Unit-I Fundamentals**

(i) Definition, nature, scope and objective (ii) Development of population geography as a special field of study (iii) Sources of population data and their reliability

**Unit-II Population Composition**

(i) Composition of population of the world: (a) age and sex (b) literacy and level of education
(ii) Occupational and economic composition: its characteristics, determinants and regional pattern

**Unit-II Population Growth**

(i) History of world population growth (ii) Demographic Transition model and its applicability in India (iii) Theories of population growth: Malthus and Marxian view

**Unit-III Population Distribution**

(i) Distribution of global population: determinants; the emerging regional patterns and the associated problems

**Unit-IV Components of Population change**

Dynamics of Population: (i)Determinants of Fertility and Mortality (ii)Migration-Types, determinants and consequences (iii) Ravenstein's model of migration

**Part B- Project** **Credit 1Marks 25 (Internal: 6)**

(The Topic of the project is to be related to the optional paper of the student. Students are to conduct an independent research (study) of a small areal unit (village/town/ town ward/wards etc) from their respective district and are to collect necessary secondary and primary data. The data generated are to be used for preparation of the Project report using suitable cartographic, statistical, RS and GIS techniques where ever necessary)

**(Mark distribution – 14 marks for Project Report and 5 marks for Viva-voce)**

## References and Suggested Readings


Bogue, D.J. (1969): **Principles in Demography**, John Wiley, New York.

Bose, A. et al. (1974): **Population in India's Development (1947-2000)**, Vikas Publication House, New Delhi.

Chandna, R .C. (2000): **Geography of Population,** Kalyani Publ., New Delhi.

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Kochhar, Rajesh (2000): **The Vedic People: Their History and Geography,** Orient Longman Ltd. New Delhi.

Mamoria, C.B. (1981): **India's Population Problems**, Kitab Mahal, New Delhi.

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Wood, R. (1979): **Population Analysis in Geography**, Longman, London.

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## Paper VIII GE 602 (d): URBAN GEOGRAPHY

Part A- Theory Credits 3 Marks 75 (Internal: 19)

(In the End Semester Examination, students are to answer 5 questions out of 10 selecting at least ONE from each unit. Unit 1 will carry 12 marks while the remaining units will carry 11 marks each)

**Unit-I: Basic Concepts**

(i) Nature and scope (ii) Definition of urban places and urban agglomerations - city, metropolis, conurbation and megalopolis (iii) concept of urbanisation and urbanism

**Unit-II: Origin, Growth and Morphology of Urban Centres**

(i) Origin and growth of urban centres (ii) Functions and functional classification of towns
(iii) City hierarchy: Rank-size relationship & Primacy (iv) Urban morphology models :- Concentric Zone , Sector and Multiple Nuclei

**Unit-III: History and Growth of Urbanization in India**

(i) History of urbanization in India (a) Ancient period (b) Medieval period, and (c) Modern period

**Unit-IV: Growth of Indian Cities**

(i) Growth of Indian cities since independence (ii) Regional distribution of urban centres (iii) Problems of small and medium towns (with special reference to Shillong UA)

**Unit-IV: Metropolitan Cities and Planning in India**

(i) Characteristics, problems and planning issues: Delhi, Mumbai and Kolkata

Part B- Project Credit 1 Marks 25 (Internal: 6)

(The Topic of the project is to be related the optional paper of the student. Students are to conduct an independent research (study) of a small areal unit (village/town/ town ward/wards etc) from their respective district and are to collect necessary primary and secondary data. The data generated are to be used for preparation of the Project report using suitable cartographic, statistical, RS and GIS techniques where ever necessary)

**(Mark distribution – 14 marks for Project Report and 5 marks for Viva-voce)**

## References and Suggested Readings


Alam, S.M. (1964): **Hyderabad Secunderabad-Twin Cities**, Asia Publ. House, Bombay.

Berry, BJ.L. and Horton, F.F. (1970): **Geographic Perspectives on Urban Systems.** Prentice Hall, New Jersey.

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Gibbs, J.P. (1961): **Urban Research Methods** D. Van Nostrahd Co. Inc. Princeton, New Jersey.

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Raj Bala (1992): **Urbanisation in India,1901-1991**, Rawat, Jaipur.

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Rao, V.L.S.P. (2000): **Urbanisation in India- Spatial Dimensions**, Concept Publ., New Delhi.


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## Paper VIII GE 602 (e): AGRICULTURAL GEOGRAPHY

### Part A- Theory Credits 3 Marks 75 (Internal: 19)

(In the End Semester Examination, students are to answer 5 questions out of 10 selecting at least ONE from each unit. Unit 1 will carry 12 marks while the remaining units will carry 11 marks each)

**Unit-I Fundamentals**

(i) Definition, nature and scope (ii) Approaches to the study of Agricultural Geography (behavioural, commodity, economic, regional, systematic and ecological)

**Unit-II Origin and Diffusion of Agriculture**

(i) Origin and diffusion of agriculture: Carl Sauer's views (a) (ii) Physical, socio- economic and technological determinants of agriculture

**Unit-III Agricultural Systems of the World**

(i) Agricultural systems of the world (Whittlesey's scheme): Shifting cultivation, intensive and extensive agriculture, commercial grazing, plantation agriculture and truck farming (horticulture)

**Unit-IV Distribution and Pattern of Indian Agriculture**

(i) Bases of agricultural regionalization: crop concentration, crop combination, crop diversification
(ii) Distribution and characteristics of agro-climatic regions (iii) Production and productivity of the major food crops (iii) Food surplus and deficit areas and associated problems

**Unit-V Indian Agriculture: Characteristics and Issues**

(i) Green Revolution and recent development in Indian agriculture (ii) Agricultural development in North-East India: Problems and Prospects

### Part B- Project Credit 1 Marks 25 (Internal: 6)

(The Topic of the project is to be related the optional paper of the student. Students are to conduct an independent research (study) of a small areal unit (village/town/ town ward/wards etc) from their respective district and are to collect necessary primary and secondary data. The data generated are to be used for preparation of the Project report using suitable cartographic, statistical, RS and GIS techniques where ever necessary)

**(Mark distribution – 14 marks for Project Report and 5 marks for Viva-voce)**

References and Suggested Readings


Anderson, E. (1970): **Geography of Agriculture**, W.M. C. Brown Co, Iowa.

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Symon, L. (1968): **Agricultural Geography,** George Bell and Sons,London.

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**Reference and Suggested Readings (*for Project Report under Optional Paper)***


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Bolton, T. and Bewbury, P.A. (1968): **Geography through Fieldwork**, Blandford Press, London.

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