

# **CURRICULUM**

**B.A. Honours in Geography**  
(w.e.f. 2017-2018)



**UNDER CHOICE BASED CREDIT SYSTEM**

# **COOCH BEHAR PANCHNAN BARMA UNIVERSITY**

## **COOCH BEHAR, WEST BENGAL**

There will be six semesters in the three- year B.A./ B.Sc. Honours in Geography. The Curriculum consists of –

- 14 Core Courses (**C**),
- 2 Ability Enhancement Compulsory Courses (**AECC**),
- 2 Skill Enhancement Courses (**SEC**)
- 4 Discipline Specific Elective (**DSE**) Courses and
- 4 Generic Elective (**GE**) courses [to be taken from the pool of Generic Elective courses].

**Each course is of 50 marks. L stands for *Lecture Hour*, T for *Tutorial Hour* and P for *Practical Hour*.**

# Cooch Behar Panchanan Barma University

## Curriculum

### B. A. Honours in Geography

(6 Semesters Pattern)

(With effect from 2017-2018 academic session and onwards)



### B.A. Honours in GEOGRAPHY

There will be six semesters in the three- year B.A Honours in **Geography**. The Curriculum consists of 14 Core Courses (C), 2 Ability Enhancement Compulsory Courses (AECC), 2 Skill Enhancement Courses (SEC) and 4 Discipline Specific Elective (DSE) Courses and 4 Generic Elective (GE) courses [to be taken from the pool of Generic Elective courses]. Each course is of 50 marks. L stands for Lecture Hour, T for Tutorial Hour and P for Practical Hour.

#### B.A Honours in Geography: 1<sup>st</sup> Semester

| Course Code | Course Title  | Course type | (L-T-P)    | Credit | Marks |
|-------------|---|-------------|------------|--------|-------|
|             | Geomorphology   | C-1         | 5 - 1 - 0  | 6      | 50    |
|             | Cartographic Techniques (Practical)   | C-2         | 0 - 0 - 12 | 6      | 50    |
|             | Choose from Pool of Generic Electives( Choose any One)<br>a) Geological aspect in Geomorphology<br>b) Disaster Management | GE-1        | 5-1-0      | 6      | 50    |
|             | Environment Studies   | AECC-1      | 4 - 0 - 0  | 4      | 50    |
|             |   | SEMESTER    | TOTAL:     | 22     | 200   |

#### B.A Honours in Geography : 2<sup>nd</sup> Semester

| Course Code | Course Title  | Course type | (L-T-P)   | Credit | Marks |
|-------------|---|-------------|-----------|--------|-------|
|             | Human Geography   | C-3         | 5 – 1 - 0 | 6      | 50    |
|             | Thematic cartography and Topographical Map Interpretation (Practical)   | C-4         | 0-0- 12   | 6      | 50    |
|             | Choose from Pool of Generic Electives (any one to be chosen)<br>c) Rural Development<br>d) Geography of Tourism | GE-2        | 5-1-0     | 6      | 50    |
|             | English / MIL   | AECC-2      | 2 - 0 - 0 | 2      | 50    |
|             |   | SEMESTER    | TOTAL:    | 20     | 200   |

### B.A Honours in Geography: 3<sup>rd</sup> Semester

| Course Code | Course Title  | Course type | (L-T-P)   | Credit | Marks |
|-------------|---|-------------|-----------|--------|-------|
|             | Climatology   | C-5         | 5 – 1- 0  | 6      | 50    |
|             | Soil Geography and Biogeography   | C-6         | 5 - 1 - 0 | 6      | 50    |
|             | Statistical Methods in Geography (Practical)                                    | C-7         | 0-0-12    | 6      | 50    |
|             | Choose from Pool of Generic Electives (any one to be chosen)                    | GE-3        | 5-1-0     | 6      | 50    |
|             | e) Gender Studies   |             |           |        |       |
|             | f) Climate Change: Vulnerability and Adaptation                                 |             |           |        |       |
|             | Choose from Pool of Skill Enhancement Course c Electives (any one to be chosen) | SEC-1       | 2-0-2     | 4      | 50    |
|             | i) Remote Sensing and GPS (Practical)   |             |           |        |       |
|             | ii) Environment Impact Assessment (Practical)                                   |             |           |        |       |
|             |   | SEMESTER    | TOTAL:    | 28     | 250   |

### B.A Honours in Geography: 4<sup>th</sup> Semester

| Course Code | Course Title  | Course type | (L-T-P)   | Credit | Marks |
|-------------|---|-------------|-----------|--------|-------|
|             | Geographical Thought  | C-8         | 5 - 1 - 0 | 6      | 50    |
|             | Economic and Environmental Geography                                | C-9         | 5 - 1 - 0 | 6      | 50    |
|             | Techniques of Report Writing and Project (Practical)                | C-10        | 0-0-12    | 6      | 50    |
|             | Choose from Pool of Generic Electives (any one to be chosen)        | GE-4        | 5-1-0     | 6      | 50    |
|             | i. Industrial Geography   |             |           |        |       |
|             | ii. Sustainable Development   |             |           |        |       |
|             | Choose from Pool of Skill Enhancement Course (any one to be chosen) | SEC-2       | 2-0-2     | 5      | 50    |
|             | iii) Research Methodology (Practical)                               |             |           |        |       |
|             | iv) Geographic Information System (Practical)                       |             |           |        |       |
|             |   | SEMESTER    | TOTAL:    | 28     | 250   |

## B.A Honours in Geography: 5<sup>th</sup> Semester

| Course Code | Course Title   | Course type | (L-T-P)   | Credit | Marks |
|-------------|--|-------------|-----------|--------|-------|
|             | Regional planning and Transport Geography            | C-11        | 5 - 1 - 0 | 6      | 50    |
|             | Computer Application in Geography (Practical)        | C-12        | 0-0-12    | 6      | 50    |
|             | <b>Any two from Group A ( Any Two to be chosen )</b> | DSE-1       | 5 - 1 - 0 | 6      | 50    |
|             | <b>DSE Group A</b>                                   | DSE-2       | 5 - 1 - 0 | 6      | 50    |
|             | a) Urban Geography                                   |             |           |        |       |
|             | b) Geography of Health and Wellbeing                 |             |           |        |       |
|             | c) Fluvial Geomorphology                             |             |           |        |       |
|             | d) Cartography                                       |             |           |        |       |
|             | e) Population Geography                              |             |           |        |       |
|             |  | SEMESTER    | TOTAL:    | 24     | 200   |

## B.A Honours in Geography: 6<sup>th</sup> Semester

| Course Code | Course Title                                | Course type | (L-T-P)   | Credit     | Marks |
|-------------|---|-------------|-----------|------------|-------|
|             | Geography of India and West Bengal          | C-13        | 5 - 1 - 0 | 6          | 50    |
|             | Fieldwork and Research Methods ( Practical) | C-14        | 0-0-12    | 6          | 50    |
|             | <b>Any two from Group B (Given below)</b>   | DSE-3       | 5 - 1 - 0 | 6          | 50    |
|             | <b>DSE Group B</b>                          | DSE-4       | 5 - 1 - 0 | 6          | 50    |
|             | a) Regional Planning                        |             |           |            |       |
|             | b) Tribal Studies                           |             |           |            |       |
|             | c) Agricultural Geography                   |             |           |            |       |
|             | d) Social Geography                         |             |           |            |       |
|             | e) Political Geography                      |             |           |            |       |
|             | f) Hydrology and Oceanography               |             |           |            |       |
|             |   | SEMESTER    | TOTAL:    | 24         | 200   |
|             |   | GRAND       | TOTAL:    | <b>142</b> | 1300  |

# Syllabus

## B.A Honours in Geography: 1<sup>st</sup> Semester

### Geomorphology:

1. **Basic ideas of Geomorphology:** Nature and scope of Geomorphology, Fundamental concepts of Geomorphology.
2. **The constitution of Earth's interior:** interior of the earth, theories of the Isostasy, Plate Tectonic, Sea floor spreading and Continental Drift.
3. **Concept of Earth's Movement:** Types of Folds and Faults, Earth quake, Mountain Buildings Theories.
4. **Geomorphic Processes:** Weathering, Mass Wasting, Cycle of Erosion (Davis and Penck).
5. **Evolution of Landforms:** Fluvial, Aeolian, Karst, Glacial and Coastal.

### Suggested Readings:

1. Bloom A. L., 2003: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, New Delhi.
2. Bridges E. M., 1990: World Geomorphology, Cambridge University Press, Cambridge.
3. Christopherson, Robert W., (2011), Geosystems: An Introduction to Physical Geography, 8 Ed., Macmillan Publishing Company
4. Kale V. S. and Gupta A., 2001: Introduction to Geomorphology, Orient Longman, Hyderabad.
5. Knighton A. D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.
6. Richards K. S., 1982: Rivers: Form and Processes in Alluvial Channels, Methuen, London.
7. Selby, M.J., (2005), Earth's Changing Surface, Indian Edition, OUP
8. Skinner, Brian J. and Stephen C. Porter (2000), The Dynamic Earth: An Introduction to physical Geology, 4th Edition, John Wiley and Sons
9. Thornbury W. D., 1968: Principles of Geomorphology, Wiley.
10. Gautam, A (2010): Bhautik Bhugol, Rastogi Publications, Meerut
11. Tikkaa, R N (1989): Bhautik Bhugol ka Swaroop, Kedarnath Ram Nath, Meerut
12. Singh, S (2009): Bhautik Bhugol ka Swaroop, Prayag Pustak, Allahabad

### Cartographic Techniques (Practical):

1. Cartography – Nature and Scope.
2. Scales – Concept and application; Graphical Construction of Plain, Comparative and Diagonal Scales.
3. Map Projections – Classification, Properties and Uses; Graphical Construction of Polar Zenithal Stereographic, Bonne's and Mercator's Projections, and reference to Universal Transverse Mercator (UTM) Projection.
4. Topographical Map – Interpretation of a Mountain area with the help of Cross and Longitudinal Profiles.

5. Slope Analysis – Wentworth's method.

### **Suggested Readings:**

1. Gupta K.K. and Tyagi, V. C., 1992: Working with Map, Survey of India, DST, New Delhi.
2. Mishra R.P. and Ramesh, A., 1989: Fundamentals of Cartography, Concept, New Delhi.
3. Monkhouse F. J. and Wilkinson H. R., 1973: Maps and Diagrams, Methuen, London.
4. Rhind D. W. and Taylor D. R. F., (eds.), 1989: Cartography: Past, Present and Future, Elsevier, International Cartographic Association.
5. Robinson A. H., 2009: Elements of Cartography, John Wiley and Sons, New York.
6. Sharma J. P., 2010: Prayogic Bhugol, Rastogi Publishers, Meerut.
7. Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
8. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi
9. Singh R L & Rana P B Singh(1991) Prayogtmak Bhugol ke Mool Tatva, Kalyani Publishers, New Delhi
10. Sharma, J P (2010) Prayogtmak Bhugol ki Rooprekha, Rastogi Publications, Meerut
11. Singh, R L & Dutta, P K (2012) PrayogatmakBhugol, Central Book Depot, Allahabad

### **Geological aspect in Geomorphology:**

1. Implications of geological knowledge in geomorphological investigation: concept and scope; Evolution of lithosphere, hydrosphere, atmosphere, biosphere, and cryosphere.
2. Geological succession of India; Quaternary stratigraphy of India– continental records (fluvial, glacial, aeolian, palaeosols and duricrust).
3. Geometry and mechanics of development of folds, lineations; Faulted topography; Himalayan orogeny.
4. Classification of sediments and sedimentary rocks; Sedimentary facies and environments, reconstruction of paleoenvironments.
5. Tectonic geomorphology, neotectonics, active tectonics and their applications to natural hazard assessment.

### **References:**

1. Bierman, P.R. and Montgomery, D.R.; Key Concepts in Geomorphology, Macmillan Learning, New York, USA, 2013
2. Boggs, S.; Principles of Sedimentology & Stratigraphy, Pearson Education, London, UK, Fifth edition, 2016
3. Burbank, D.W. and Anderson, R.S.; Tectonic Geomorphology, Blackwell Science Ltd, Oxford, UK, First Edition, 2001
4. King, C.A.M.; Techniques in Geomorphology, Edward Arnold, London, 1966
5. Billings, M.P.; Structural Geology, Pearson Education, London, UK, Third edition, 2016
6. Penck, W.; Morphological analysis of landforms, St. Martin's Press, New York, USA, 1953
7. Wadia, D. N.; Geology of India, MacMillan and Company, London and Madras, Student edition, 1959

## **Disaster Management:**

1. Disasters: Definition and Concepts: Hazards, Disasters; Risk and Vulnerability; Classification
2. Disasters in India: (a) Flood: Causes, Impact, Distribution and Mapping; Landslide: Causes, Impact, Distribution and Mapping; Drought: Causes, Impact, Distribution and Mapping
3. Disasters in India: (b) Earthquake and Tsunami: Causes, Impact, Distribution and Mapping; Cyclone: Causes, Impact, Distribution and Mapping.
4. Manmade disasters: Causes, Impact, Distribution and Mapping
5. Response and Mitigation to Disasters: Mitigation and Preparedness, NDMA and NIDM; Indigenous Knowledge and Community-Based Disaster Management; Do's and Don'ts During and Post Disasters

## **Suggested Readings:**

1. Government of India. (1997) Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.
2. Kapur, A. (2010) Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
3. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
4. Singh, R.B. (2005) Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi. Chapter 1, 2 and 3
5. Singh, R. B. (ed.), (2006) Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.
6. Sinha, A. (2001). Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.
7. Stoltman, J.P. et al. (2004) International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht.
8. Singh Jagbir (2007) "Disaster Management Future Challenges and Opportunities", 2007. Publisher- I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India

## **B.A Honours in Geography: 2<sup>nd</sup> Semester**

### **Human Geography:**

1. Introduction: Defining Human Geography; Major Themes; Contemporary Relevance
2. Space and Society: Cultural Regions; Race; Religion and Language
3. Population: Population Growth and Distribution; Population Composition; Demographic Transition Theory
4. Settlements: Types of Rural Settlements; Classification of Urban Settlements; Trends and Patterns of World Urbanization with special reference to India
5. Population-Resource Relationship

### **Suggested Readings**

1. Chandna, R.C. (2010) Population Geography, Kalyani Publisher.
2. Hassan, M.I. (2005) Population Geography, Rawat Publications, Jaipur



3. Daniel, P.A. and Hopkinson, M.F. (1989) *The Geography of Settlement*, Oliver & Boyd, London.
4. Johnston R; Gregory D, Pratt G. et al. (2008) *The Dictionary of Human Geography*, Blackwell Publication.
5. Jordan-Bychkov et al. (2006) *The Human Mosaic: A Thematic Introduction to Cultural Geography*. W. H. Freeman and Company, New York.
6. Kaushik, S.D. (2010) *Manav Bhugol*, Rastogi Publication, Meerut.
7. Maurya, S.D. (2012) *Manav Bhugol*, Sharda Pustak Bhawan. Allahabad.
8. Hussain, Majid (2012) *Manav Bhugol*. Rawat Publications, Jaipur

## **Thematic Cartography and Topographical Map Interpretation (Practical):**

### **Thematic Cartography**

1. **Maps:** Definition, Characteristics and Classification (on different bases).

2. **Presentation of Data Using Different Cartographic Techniques:**

- Bar graphs: Simple, Compound and Composite (showing industrial data or literacy data)
- Dots and Spheres (representing rural and urban population).
- Proportional Pie Diagrams (showing variation in occupational structure or areal coverage under different crops)
- Choropleth (showing population density)
- Pyramid Diagram (showing Age-sex structure of population)

3. **Techniques of Thematic Mapping Using:**

- Point Symbol: a comparative study of employment structure of the metropolitan cities of India/ West Bengal represented by Nelson's Dominant and Distinctive Functions.
- Line Symbol: Road accessibility represented by Physical Accessibility and Shortest Path Matrix (Shimbel Index)
- Area Symbol: Zones of concentration represented by Location Quotient and Z-Score (single criterion and two or three criteria).

### **Topographical Map Interpretation:**

4. **Analysis and interpretation of S.O.I. Maps of Plateau area under the following heads:**

- Broad Physiographic Divisions based on break-of- slopes along Representative Profile;
- Serial Profiles; Superimposed, Projected and Composite Profiles;
- Longitudinal and Cross Profiles of river;
- Identification of Drainage Patterns and Drainage Characteristics (typical sketches);
- Morphometric Techniques: Relative Relief (after Smith), Average Slope (after Wentworth), Drainage Density (Horton), Dissection Index (Dov Nir), Ruggedness Index, Homestead Frequency, Road Density;
- Identification of Settlement Patterns (typical sketches);
- Transect Chart showing the relationship between the Physical and Cultural features.

5. Laboratory note book and Viva-voce.

### **Suggested Readings**

1. Gupta K.K. and Tyagi, V. C., 1992: Working with Map, Survey of India, DST, New Delhi.
2. Mishra R.P. and Ramesh, A., 1989: Fundamentals of Cartography, Concept, New Delhi.
3. Monkhouse F. J. and Wilkinson H. R., 1973: Maps and Diagrams, Methuen, London.
4. Rhind D. W. and Taylor D. R. F., (eds.), 1989: Cartography: Past, Present and Future, Elsevier, International Cartographic Association.
5. Robinson A. H., 2009: Elements of Cartography, John Wiley and Sons, New York.
6. Sharma J. P., 2010: Prayogic Bhugol, Rastogi Publishers, Meerut.
7. Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
8. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi
9. Singh R L & Rana P B Singh(1991) Prayogtmak Bhugol ke Mool Tatva, Kalyani Publishers, New Delhi
10. Sharma, J P (2010) Prayogtmak Bhugol ki Rooprekha, Rastogi Publications, Meerut  
Singh, R L & Dutta, P K (2012) Prayogatmak Bhugol, Central Book Depot, Allahabad

### **Rural Development:**

1. Defining Development: Inter-Dependence of Urban and Rural Sectors of the Economy; Need for Rural Development, Gandhian Approach of Rural Development.
2. Rural Economic Base: Panchayatiraj System, Agriculture and Allied Sectors, Seasonality and Need for Expanding Non-Farm Activities, Co-operatives, PURA.
3. Area Based Approach to Rural Development: Drought Prone Area Programmes, PMGSY.
4. Target Group Approach to Rural Development: SJSY, MNREGA, Jan Dhan Yojana and Rural Connectivity.
5. Provision of Services – Physical and Socio-Economic Access to Elementary Education and Primary Health Care and Micro credit

### **Suggested Readings:**

1. Gilg A. W., 1985: *An Introduction to Rural Geography*, Edwin Arnold, London.
2. Krishnamurthy, J. 2000: *Rural Development - Problems and Prospects*, Rawat Pubs., Jaipur
3. Lee D. A. and Chaudhri D. P. (eds.), 1983: *Rural Development and State*, Methuen, London.
4. Misra R. P. and Sundaram, K. V. (eds.), 1979: *Rural Area Development: Perspectives and Approaches*, Sterling, New Delhi.
5. Misra, R. P. (ed.), 1985: *Rural Development: Capitalist and Socialist Paths*, Vol. 1, Concept, New Delhi.
6. Palione M., 1984: *Rural Geography*, Harper and Row, London.
7. Ramachandran H. and Guimaraes J.P.C., 1991: *Integrated Rural Development in Asia – Learning from Recent Experience*, Concept Publishing, New Delhi.
8. Robb P. (ed.), 1983: *Rural South Asia: Linkages, Change and Development*, Curzon Press.
9. UNAPDI 1986: *Local Level Planning and Rural Development: Alternative Strategies*. (United Nations Asian & Pacific Development Institute, Bangkok), Concept Pubs. Co., New Delhi.
10. Wanmali S., 1992: *Rural Infrastructure Settlement Systems and Development of the Regional Economy in South India*, International Food Policy Research Institute, Washington, D.C.
11. Yugandhar, B. N. and Mukherjee, Neela (eds.) 1991: *Studies in Village India: Issues in Rural Development*, Concept Pubs. Co., New Delhi.

### **Geography of Tourism:**

1. Tourism Geography: Definition, Nature and Scope; Importance of Tourism; Tourism as an interdisciplinary subject
2. Factors affecting Tourism Development: Physical factors and Socio-cultural factors; Identification of Tourism Potential, SWOT Analysis
3. Classification of Tourism: On the basis of Nationality, Function, Organisation, Intensity, Age Group, Funding Sources; Recent Trends of Tourism
4. Tourism and Linkage: Role of Public and Private Sector; Accommodation, Food Facility, Transportation, Intermediaries, Key Elements of Tour, Travel related Services
5. Tourism Impact Analysis: Environmental and Socio-economic Impact

### **Suggested Readings:**

1. Aerni, M.J. (1972). The Social Effect of Tourism. Current Anthropology. Vol. 13
2. Anand, M.M. (1976). Tourism and Hotel Industry in India. New Delhi. Prentice-Hall
3. Bhatia, A.K. (1997). Tourism Development: Principles and Practices. New Delhi. Sterling
4. Burton, R. (1995). Travel Geography. London. Pitman
5. Bulter, R.W. (1974). The Social Implication of Tourism Development. Tourism Research. Vol. 2. Issue 2
6. Cooper, C. (1993). Tourism Principles and Practices. London. Pitman
7. Davis, H.D. (1968). Potentials for Tourism of Developing Countries. London. Finance and Development
8. Edward. J. M. (1981). The Psychology of Leisure Travel. Boston. CBI Publishing Company
9. Geetanjali (2010). Tourism Geography. New Delhi. Centrum Press
10. Ghosh, B (2008). Tourism and Travel Management. New Delhi. Vikas Publishing House
11. Gunn, C. (1998) Tourism Planning. New York. Taylor and Francis
12. Kotler, P. (1999). Principles of Marketing. New York. Prentice-Hall
13. Mill, R.C. (1985). The Tourism System. London. Prentice-Hall
14. Pearce, D. (1987). Tourism Today. Harlow. Longman
15. Ratti, M (2007). History and Geography of Tourism. New Delhi. Rajat Publications
16. Robinson, H. (1976). A Geography of Tourism. London. MacDonal and Evans
17. Saxena, H.M. (2010). Transport Geography. Jaipur. Rawat Publication
18. Smith, S.L.J. (1983). Recreation Geography. Harlow. Longman
19. White, J. (1967). History of Tourism. London. Leisure Art

## **B.A Honours in Geography : 3<sup>rd</sup> Semester**

### **Climatology:**

1. Composition and structure of the atmosphere
2. Heat budget of the earth; Latitudinal and seasonal variation of Insolation; Distribution of temperature; Inversion of Temperature, Green house gases and global warming.
3. Atmospheric pressure and general circulation of winds;
4. Monsoons and Jet streams; El-Nino, La-Nina, ENSO; Air masses;
5. Temperate and tropical cyclones;
6. Humidity, Condensation and Precipitation;
7. Koppen's and Thornthwaite's scheme of classification, Climate change.

### **Suggested Readings:**

1. Barry R. G. and Carleton A. M., 2001: *Synoptic and Dynamic Climatology*, Routledge, UK.
2. Barry R. G. and Corley R. J., 1998: *Atmosphere, Weather and Climate*, Routledge, New York.
3. Critchfield H. J., 1987: *General Climatology*, Prentice-Hall of India, New Delhi
4. Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: *The Atmosphere: An Introduction to Meteorology*, Prentice-Hall, Englewood Cliffs, New Jersey.
5. Oliver J. E. and Hidore J. J., 2002: *Climatology: An Atmospheric Science*, Pearson Education, New Delhi.
6. Trewartha G. T. and Horne L. H., 1980: *An Introduction to Climate*, McGraw-Hill.
7. Gupta L S(2000): *Jalvayu Vigyan*, Hindi Madhyam Karyanvay Nidishalya, Delhi Vishwa Vidhyalaya, Delhi
8. Lal, D S (2006): *Jalvayu Vigyan*, Prayag Pustak Bhavan, Allahabad
9. Vatal, M (1986): *Bhautik Bhugol*, Central Book Depot, Allahabad
10. Singh, S (2009): *Jalvayu Vigyan*, Prayag Pustak Bhawan, Allahabad

## **Soil Geography and Biogeography:**

### **A. Soil Geography:**

- Definition of soil, scope and content of Pedology
- Factors affecting soil formation (active and passive)
- Processes of soil formation (general and special processes)
- Development of an idealized soil profile, development of soil profiles under different climatic conditions: Laterite, Chernozem and Podzol
- Physical properties of soil (texture, structure, colour and moisture)
- Soil organic matter
- Chemical properties of soil (Soil P<sup>H</sup>, Base Exchange etc.)
- Soil-plant-water relationship
- Soil erosion: Types, factors and management and soil conservation
- Soil Classification: Genetic school and USDA (Taxonomic classes)

### **B. Bio-geography:**

- Definition, nature and scope of Bio-geography.
- Some Concepts: Biosphere, Ecology, Population, Habitat, Species structure, Ecological Niche, Noosphere, Succession, Climax.
- Ecosystem: Components, Trophic structure, Productivity and Energy flow in Ecosystem; Types of Food Chain, Food Web; Ecological Pyramids.
- Bio-geo-chemical cycles: Nitrogen, Oxygen and Carbon.
- Concept of Biome, Ecotone and Community; Study of different Biotic Regions of the world: Equatorial Evergreen Rain Forests, Tropical Savannah, Steppes, Taiga and Tundra.
- Concept of Biodiversity and its importance.
- Deforestation and its impact on environment.
- Wetlands: Characteristics, Conservation and Management

### **Suggested Readings:**

1. Anderson: *Ecology for Environmental Science*.
2. Biswas, T.D. and Mukherjee, S. K. 1987: *Text book of Soil Science*, Tata McGraw Hill, new Delhi.

3. Buckman, H.R. and Brady, N.C. 1974: Nature and Properties of Soil, McMillan, New York.
4. Bunting, A. 1965: Geography of Soil, Hutchinson, London.
5. Chapman, J.L. and Reiss, M.J. 1992: Ecology Principles and Applications, Cambridge University Press, Cambridge.
6. Daji, J.A., Kadam, J.R. and Patil, N.D. 1996: A Textbook of Soil Science, Media Promoters and Publishers Pvt Ltd, Mumbai.
7. Das, P and Basu, S. 2003: Mrittikar Katha O Damodar Upattakar Mrittika Khayer Ruparekha, (Bengali), Sandip, Kolkata.
8. De, N. K. and Sarkar, M. K. 1994: Mrittika Bhu-vidya, (Bengali) Paschim Banga Rajya Pustak Parshad, Kolkata.
9. Nebel, J.B. 1981: Environmental Science, Prentice Hall, New York.
10. Odum, F.P. 1971: Fundamentals of Ecology, W.B. Sanders, Philadelphia.
11. Shukla, R.S. and Chandel, P.S. 1930: Plant Ecology and Soil Science, S Chand, New Delhi.

### Statistical Methods in Geography (Practical):

#### 1. Descriptive Statistics:

- **Sources of Data:** Primary and Secondary.
- **Variables:** Discrete and Continuous; Parametric and Non-parametric.
- **Scales of Measurement:** Nominal, Ordinal, Cardinal, Ratio, Interval.
- Different types of **Sampling; Geographical Data Matrix.**
- **Tabulation, Classification and Presentation of Data.**

#### 2. Applied Statistics:

- **Frequency Distribution:** Histogram, Frequency Polygon, Frequency Curve, Ogives, **Normal distribution and Skewed distribution** (Pearson's 1<sup>st</sup> and 2<sup>nd</sup> Measures; Bowley's Measure).
- **Measures of Central Tendencies:** Mean, Median, Mode.
- **Partition Values:** Quartiles, Deciles and Percentiles.
- **Measures of Dispersion:** Range, Mean Deviation, Quartile Deviation, Standard Deviation, Co-efficient of variation and Variance.
- **Simple Bi-variate Analysis**, Fitting of Regression Trend Line by least square method; Residuals.
- **Rank Co-relation** (Spearman's Method) and **Product Moment Co-relation** (Pearson's Method)
- **Measures of Inequalities:** Lorenz Curve and Gini's Co-efficient.

3. Laboratory note book and Viva-voce.

### Suggested Readings

1. Berry B. J. L. and Marble D. F. (eds.): *Spatial Analysis – A Reader in Geography*.
2. Ebdon D., 1977: *Statistics in Geography: A Practical Approach*.
3. Hammond P. and McCullagh P. S., 1978: *Quantitative Techniques in Geography: An Introduction*, Oxford University Press.
4. King L. S., 1969: *Statistical Analysis in Geography*, Prentice-Hall.
5. Mahmood A., 1977: *Statistical Methods in Geographical Studies*, Concept.
6. Pal S. K., 1998: *Statistics for Geoscientists*, Tata McGraw Hill, New Delhi.
7. Sarkar, A. (2013) *Quantitative geography: techniques and presentations*. Orient Black Swan Private

Ltd., New Delhi

8. Silk J., 1979: *Statistical Concepts in Geography*, Allen and Unwin, London.
9. Spiegel M. R.: *Statistics, Schaum's Outline Series*.
10. Yeates M., 1974: *An Introduction to Quantitative Analysis in Human Geography*, McGraw Hill, New York.
11. Shinha, Indira (2007) *Sankhyiki bhugol*. Discovery Publishing House, New Delhi

### **Gender Studies:**

1. **Introduction to Gender Studies :** Gender Perspectives of Body, Social Construction of Femininity, Social Construction of Masculinity, Women's Studies and Gender Studies.
2. **Gender and Society:** Gender, Family and Economy, Gender Lens: Political and Legal Systems, Gender and Education, Social Dynamics of Gender
3. **Feminist Movement:** Historical Overview of Feminist Movements, Feminist Movement in Europe and US, Women's Movement in pre-independent India, Women's participation in the movements in post-independent India, Grass root Movements.
4. **Gender and Development:** Approaches and Strategies: Approaches to women development, Approaches to women development, Approaches to women development, Women development: Role of non-state actors.

### **Suggested Readings:**

1. Khullar, Mala (2005). *Writing the Women's Movement: A Reader* ed. New Delhi: Zubaan.
2. Jain, Devaki and Pam Rajput (1942). *Narratives from the Women's Studies Family: Recreating knowledge*. New Delhi: Sage.
3. *Programme of Women's Studies*.(1977) New Delhi: ICSSR, 1977.
4. Desai, Neera and Maithrey Krishnaraj.(1987) *Women and Society in India*. Delhi: Ajantha.
5. Nagla, Bhupendra Kumar. (1991). *Women, Crime and Law*. Rawat: New Delhi.
6. Nanda, B.R.(1976) *Indian Women: From Purdah to Modernity*. Delhi: Vikas
7. *Women's Studies in India: A Reader*.(2008) Ed. *Mary John*. Penguin: New Delhi.
8. Sahai, Shailly.(1991). *Social Legislation and Status of Hindu Women*. Jaipur: Rawat, 1986. Singh, Alka. *Women in Muslim Personal Law*. Rawat. Jaipur.

### **Climate Change: Vulnerability and Adaptation:**

1. **Global climatic change:** Concept, causes and consequences; Role and response of man in climatic changes, Global warming and sea level change; environmental impacts.
2. **Extreme weather:** cyclone, drought, flood, delay monsoon.

### **Suggested Readings:**

1. Government of India. (1997) *Vulnerability Atlas of India*. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.
2. Kapur, A. (2010) *Vulnerable India: A Geographical Study of Disasters*, Sage Publication, New Delhi.
3. Modh, S. (2010) *Managing Natural Disaster: Hydrological, Marine and Geological Disasters*,

Macmillan, Delhi.

4. Singh, R.B. (2005) Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi. Chapter 1, 2 and 3
5. Singh, R. B. (ed.), (2006) Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.
6. Sinha, A. (2001). Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.
7. Stoltman, J.P. et al. (2004) International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht.
8. Singh Jagbir (2007) “Disaster Management Future Challenges and Opportunities”, 2007. Publisher-I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India

### **Remote Sensing and GPS (Practical):**

1. **Remote sensing:** definition, scope and types; Electro-magnetic radiation: characteristics, interaction with matter; Remote sensing regions and bands; Spectral signature.
2. **Aerial photograph:** types, scale, resolution and geometry.
3. **Satellite imagery:** Orbital characteristics of remote sensing satellites; Satellites: Landsat, SPOT and IRS, Characteristics of sensors: MSS, LISS and OLI. Application of remote sensing data in different areas Global Positioning System (GPS): principles and applications.

### **Suggested Readings**

1. Bhatta , B. (2008) Remote Sensing and GIS, Oxford University Press, New Delhi.
2. Campbell J. B., 2007: Introduction to Remote Sensing, Guildford Press
3. Chauniyal, D. (2010) Sudur Samvedana Avam Bhaugolik Suchna Pranali, Sharda Pustak Bhawan, Allahabad.
4. Jensen, J. R. (2005) Introductory Digital Image Processing: A Remote Sensing Perspective, Pearson Prentice-Hall.
5. Joseph, G. 2005: Fundamentals of Remote Sensing, United Press India.
6. Lillesand T. M., Kiefer R. W. and Chipman J. W., 2004: Remote Sensing and Image Interpretation, Wiley. (Wiley Student Edition).
7. Li, Z., Chen, J. and Batsavias, E. (2008) Advances in Photogrammetry, Remote Sensing and Spatial Information Sciences CRC Press, Taylor and Francis, London
8. Mukherjee, S. (2004) Textbook of Environmental Remote Sensing, Macmillan, Delhi.
9. Nag P. and Kudra, M., 1998: Digital Remote Sensing, Concept, New Delhi.
10. Singh R. B. and Murai S., 1998: Space-informatics for Sustainable Development, Oxford and IBH Publication.

### **Environment Impact Assessment (Practical):**

1. The Project Report based on any one field based case studies among following -
  - Flood
  - Drought
  - Cyclone
  - Earthquake
  - Landslides

- Human Induced Disasters: Fire Hazards, Chemical, Industrial accidents

### **Suggested Readings**

1. Chandna R. C., 2002: *Environmental Geography*, Kalyani, Ludhiana.
2. Cunningham W. P. and Cunningham M. A., 2004: *Principals of Environmental Science: Inquiry and Applications*, Tata Macgraw Hill, New Delhi.
3. Goudie A., 2001: *The Nature of the Environment*, Blackwell, Oxford.
4. Singh, R.B. (Eds.) (2009) *Biogeography and Biodiversity*. Rawat Publication, Jaipur
5. Miller G. T., 2004: *Environmental Science: Working with the Earth*, Thomson BrooksCole, Singapore.
6. MoEF, 2006: *National Environmental Policy-2006*, Ministry of Environment and Forests, Government of India.
7. Singh, R.B. and Hietala, R. (Eds.) (2014) *Livelihood security in Northwestern Himalaya: Case studies from changing socio-economic environments in Himachal Pradesh, India*. *Advances in Geographical and Environmental Studies*, Springer
8. Odum, E. P. et al, 2005: *Fundamentals of Ecology*, Ceneage Learning India.
9. Singh S., 1997: *Environmental Geography*, Prayag Pustak Bhawan. Allahabad.
10. UNEP, 2007: *Global Environment Outlook: GEO4: Environment For Development*, United Nations Environment Programme.
11. Singh, M., Singh, R.B. and Hassan, M.I. (Eds.) (2014) *Climate change and biodiversity: Proceedings of IGU Rohtak Conference, Volume 1*. *Advances in Geographical and Environmental Studies*, Springer
12. Singh, R.B. (1998) *Ecological Techniques and Approaches to Vulnerable Environment*, New Delhi, Oxford & IBH Pub.

## **B.A Honours in Geography: 4<sup>th</sup> Semester**

### **Geographical Thought:**

1. Pre-Modern – Early Origins of Geographical Thinking with reference to the Classical and Medieval Philosophies.
2. Modern – Evolution of Geographical Thinking and Disciplinary Trends in Germany, France, Britain, United States of America.
3. Debates – Environmental Determinism and Possibilism, Systematic and Regional, Ideographic and Nomeothetic. Paradigm in Geography
4. Trends – Quantitative Revolution and its Impact, Behaviouralism, Systems Approach, Radicalism, Feminism; Towards Post Modernism – Changing Concept of Space in Geography, Future of Geography.

### **Suggested Readings:**

1. Arentsen M., Stam R. and Thuijjs R., 2000: *Post-modern Approaches to Space*, ebook.
2. Bhat, L.S. (2009) *Geography in India (Selected Themes)*. Pearson
3. Bonnett A., 2008: *What is Geography?* Sage.
4. Dikshit R. D., 1997: *Geographical Thought: A Contextual History of Ideas*, Prentice– Hall India.
5. Hartshone R., 1959: *Perspectives of Nature of Geography*, Rand MacNally and Co.
6. Holt-Jensen A., 2011: *Geography: History and Its Concepts: A Students Guide*, SAGE.
7. Johnston R. J., (Ed.): *Dictionary of Human Geography*, Routledge.
8. Johnston R. J., 1997: *Geography and Geographers, Anglo-American Human Geography since 1945*,



Arnold, London.

9. Kapur A., 2001: *Indian Geography Voice of Concern*, Concept Publications.
10. Martin Geoffrey J., 2005: *All Possible Worlds: A History of Geographical Ideas*, Oxford.
11. Soja, Edward 1989. *Post-modern Geographies*, Verso, London. Reprinted 1997: Rawat Publ., Jaipur and New Delhi.

## **Economic and Environmental Geography:**

### **Economic Geography:**

1. Introduction: Concept and classification of economic activity
2. Factors Affecting location of Economic Activity with special reference to Agriculture (Von Thunen theory), Industry (Weber's theory).
3. Primary Activities: Subsistence and Commercial agriculture, forestry, fishing and mining.
4. Secondary Activities: Manufacturing (Cotton Textile, Iron and Steel), Concept of Manufacturing Regions, Special Economic Zones and Technology Parks.
5. Tertiary Activities: Transport, Trade and Services.

### **Suggested Readings**

1. Alexander J. W., 1963: *Economic Geography*, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
2. Coe N. M., Kelly P. F. and Yeung H. W., 2007: *Economic Geography: A Contemporary Introduction*, Wiley-Blackwell.
3. Hodder B. W. and Lee Roger, 1974: *Economic Geography*, Taylor and Francis.
4. Combes P., Mayer T. and Thisse J. F., 2008: *Economic Geography: The Integration of Regions and Nations*, Princeton University Press.
5. Wheeler J. O., 1998: *Economic Geography*, Wiley..
6. Durand L., 1961: *Economic Geography*, Crowell.
7. Bagchi-Sen S. and Smith H. L., 2006: *Economic Geography: Past, Present and Future*, Taylor and Francis.
8. Willington D. E., 2008: *Economic Geography*, Husband Press.
9. Clark, Gordon L.; Feldman, M.P. and Gertler, M.S., eds. 2000: *The Oxford*

### **Environmental Geography:**

1. Environmental Geography – Concept and Scope
2. Human-Environment Relationships – Historical Progression, Adaptation in different Biomes.
3. Ecosystem – Concept, Structure and Functions
4. Environmental Problems in Tropical, Temperate and Polar Ecosystems
5. Environmental Programmes and Policies – Global, National and Local levels

### **Suggested Readings**

1. Chandna R. C., 2002: *Environmental Geography*, Kalyani, Ludhiana.
2. Cunningham W. P. and Cunningham M. A., 2004: *Principals of Environmental Science: Inquiry and Applications*, Tata Macgraw Hill, New Delhi.
3. Goudie A., 2001: *The Nature of the Environment*, Blackwell, Oxford.
4. Singh, R.B. (Eds.) (2009) *Biogeography and Biodiversity*. Rawat Publication, Jaipur
5. Miller G. T., 2004: *Environmental Science: Working with the Earth*, Thomson BrooksCole, Singapore.
6. MoEF, 2006: *National Environmental Policy-2006*, Ministry of Environment and Forests, Government of India.

7. Singh, R.B. and Hietala, R. (Eds.) (2014) *Livelihood security in Northwestern Himalaya: Case studies from changing socio-economic environments in Himachal Pradesh, India*. Advances in Geographical and Environmental Studies, Springer
8. Odum, E. P. et al, 2005: *Fundamentals of Ecology*, Ceneage Learning India.
9. Singh S., 1997: *Environmental Geography*, Prayag Pustak Bhawan. Allahabad.
10. UNEP, 2007: *Global Environment Outlook: GEO4: Environment For Development*, United Nations Environment Programme.
11. Singh, M., Singh, R.B. and Hassan, M.I. (Eds.) (2014) *Climate change and biodiversity: Proceedings of IGU Rohtak Conference, Volume 1*. Advances in Geographical and Environmental Studies, Springer
12. Singh, R.B. (1998) *Ecological Techniques and Approaches to Vulnerable Environment*, New Delhi, Oxford & IBH Pub.

### **Techniques of Report Writing and Project (Practical):**

- Title
- Authors
- Abstract
- Table of contents
- Introduction
- Experimental techniques and methods
- Results and discussion
- Summary/conclusions
- References
- Appendices (if used)

### **Suggested Readings:**

1. Ahuja, Ram 2001. *Research Methods*. Rawat Publications, Jaipur and New Delhi.
2. Bolton, T. and Newbury, P.A. 1968. *Geography through Fieldwork*. Blandford Press, London.
3. Denzin, N. K. and Lincoln, Y.S. (eds.) 2000. *Handbook of Qualitative Research*. Sage Publ., Thousand Oaks CA.
4. Flowerdew, R. and Martin, D. (eds.) 1997. *Methods in Human Geography. A Guide for Students Doing a Research Project*. Longman, Harlow.
5. Hay, Iain (ed.) 2004. *Communicating in Geography and the Environmental Sciences*. Oxford University Press, Melbourne. 2<sup>nd</sup> Ed.
6. Hay, Iain (ed.) 2005. *Qualitative Research Methods in Human Geography*. Oxford University Press, Melbourne. 2<sup>nd</sup> Ed.
7. Kitchen, Rob and Fuller, Duncan 2005. *The Academic's Guide to Publishing*. Vistaar Publs. (Sage), New Delhi.
8. Kitchen, Rob and Tate, Nicholas J. 2009. *Conducting Research into Human Geography: Theory, Methodology & Practice*. Prentice Hall-Pearson, Harlow U.K. 2<sup>nd</sup> Ed.
9. Knight, Peter G. and Parsons, Tony 2003. *How to do your Essays Exams & Coursework in Geography and Related Disciplines*. Nelson Thornes, Cheltenham U.K.
10. Lee, Roger Smith, David M. (eds.) 2004. *Geographies and Moralities: International Perspectives on Development, Justice and Place*. Wiley-Blackwell, Oxford.

## Industrial Geography:

1. Nature and Scope of Industrial Geography
2. Types, Geographical Characteristics and Location of Industries (Weber's Theory): Small and Medium Industries, Heavy Industries: Coal and Iron based industries, Rural based Industries, Footloose Industry.
3. **Mega Industrial Complexes:** National Capital Region, Mumbai-Pune Industrial Region, Bengaluru-Chennai Industrial Region and Chota Nagpur Industrial Region
4. **Impact of Industrialisation in India:** Environmental; Social and Economic
5. Industrial Policy of India

## Suggested Readings

1. Alexander J.W. (1979). Economic Geography, Printice Hall of India Pvt. Ltd., New Delhi.
2. Goh Cheng Leong (1997). "Human and economic geography", Oxford University Press, New York.
3. Thoman, R.S., Conkling E.C. and Yeates, M.H. (1968). Geography of Economic Activity, McGraw Hill Book Company, 1968.
4. Miller, E. (1962) Geography of Manufacturing Printice Hall - Englewood Cliff, New Jersey
5. Gunnar Alexandersson (1967). "Geography of Manufacturing, Prentice Hall, New Jersey  
Truman, A. Harishorn, John W. Alexander (2000) " Economic Geography", Prentice Hall of India Ltd., New Delhi.
6. Singh, Jagdish 2003: *India - A Comprehensive & Systematic Geography*, Gyanodaya Prakashan, Gorakhpur.
7. Tirtha, Ranjit 2002: *Geography of India*, Rawat Publs., Jaipur & New Delhi.
8. Pathak, C. R. 2003: *Spatial Structure and Processes of Development in India*. Regional Science Assoc., Kolkata.
9. Tiwari, R.C. (2007) Geography of India. Prayag Pustak Bhawan, Allahabad
10. Sharma, T.C. (2013) Economic Geography of India. Rawat Publication, Jaipur

## Sustainable Development:

1. **Sustainable Development:** Concept, Principles, Guidelines and Historical Background.
2. **Indicators and Approaches of Sustainable Development:** Per Capita Income, Energy, Demographic and others Indicators; Economic, Environmental and Social approach.
3. **The Millennium Development Goals and Earth Charter:** National Strategies and International Experience; post 2017 Development Agenda.
4. **Sustainable Regional Development:** Need and examples from different Ecosystems.
5. **Inclusive Development:** Education, Health; Climate Change: The role of higher education in sustainable development; The human right to health; Poverty and disease; The Challenges of Universal Health Coverage; Policies and Global Cooperation for Climate Change.

6. **Sustainable Development Policies and Programmes:** The proposal for SDGs at Rio+20; Illustrative SDGs; Goal-Based Development; Financing for Sustainable Development; Principles of Good Governance; National Environmental Policy, CDM.
7. Role of NGOs for Sustainable Development.

### Suggested Readings

1. Agyeman, Julian, Robert D. Bullard and Bob Evans (Eds.) (2003) *Just Sustainabilities: Development in an Unequal World*. London: Earthscan. (Introduction and conclusion).
2. Ayers, Jessica and David Dodman (2010) "Climate change adaptation and development I: the state of the debate". *Progress in Development Studies* 10 (2): 161-168.
3. Baker, Susan (2006) *Sustainable Development*. Milton Park, Abingdon, Oxon; New York, N.Y.: Routledge. (Chapter 2, "The concept of sustainable development").
4. Brosius, Peter (1997) "Endangered forest, endangered people: Environmentalist representations of indigenous knowledge", *Human Ecology* 25: 47-69.
5. Lohman, Larry (2003) "Re-imagining the population debate". *Corner House Briefing* 28.
6. Martínez-Alier, Joan et al (2010) "Sustainable de-growth: Mapping the context, criticisms and future prospects of an emergent paradigm" *Ecological Economics* 69: 1741-1747.
7. Merchant, Carolyn (Ed.) (1994) *Ecology*. Atlantic Highlands, N.J: Humanities Press. (Introduction, pp 1-25.)
8. Osorio, Leonardo et al (2005) "Debates on sustainable development: towards a holistic view of reality". *Environment, Development and Sustainability* 7: 501-518.
9. Robbins, Paul (2004) *Political Ecology: A Critical Introduction*. Blackwell Publishing.
10. Singh, R.B. (Eds.) (2001) *Urban Sustainability in the Context of Global Change*, Science Pub., Inc., Enfield (NH), USA and Oxford & IBH Pub., New Delhi.

### Research Methodology (Practical):

1. Geographic Enquiry: Definition and Ethics; Framing Research Questions, Objectives and Hypothesis; Literature Review; Preparing Sample Questionnaire
2. Data Collection: Type and Sources of Data; Methods of Collection; Input and Editing
3. Data Analysis: Qualitative Data Analysis; Quantitative Data Analysis; Data Representation Techniques
4. Structure of a Research Report: Preliminaries; Text; References, Bibliography and Citations; Abstract
5. Preparation of Research Report

### Suggested Readings

1. Creswell J., 1994: *Research Design: Qualitative and Quantitative Approaches* Sage Publications.
2. Dikshit, R. D. 2003. *The Art and Science of Geography: Integrated Readings*. Prentice-Hall of India, New Delhi.
3. Evans M., 1988: "Participant Observation: The Researcher as Research Tool" in *Qualitative Methods in Human Geography*, eds. J. Eyles and D. Smith, Polity.
4. Misra, R.P. (2002) *Research Methodology*, Concept Publications, New Delhi.

5. Mukherjee, Neela 1993. Participatory Rural Appraisal: Methodology and Application. Concept Pubs. Co., New Delhi.
6. Mukherjee, Neela 2002. Participatory Learning and Action: with 100 Field Methods. Concept Pubs. Co., New Delhi
7. Robinson A., 1998: "*Thinking Straight and Writing That Way*", in *Writing Empirical Research Reports: A Basic Guide for Students of the Social and Behavioural Sciences*, eds. by F. Pryczak and R. Bruce Pryczak, Publishing: Los Angeles.
8. Special Issue on "Doing Fieldwork" *The Geographical Review* 91:1-2 (2001).
9. Stoddard R. H., 1982: *Field Techniques and Research Methods in Geography*, Kendall/Hunt.
11. Wolcott, H. 1995. *The Art of Fieldwork*. Alta Mira Press, Walnut Creek, CA.
12. Yadav, H. (2013) *Shodh Pravidhi Evam Matratamak Bhugol*, Raja Publications, Delhi.

### **Geographic Information System (Practical):**

1. **Definition and evolution of GIS:** Components of GIS; Geographical data: types and characteristics; Earth's shape, coordinate systems and datum.
2. **Digital representation of geographical data:** data structure, spatial data model, database management systems, raster and vector models.
3. **Digital Elevation Model (DEM):** Characteristics and applications; Remote sensing and GIS integration; Applications of GIS.

### **Suggested Readings**

1. Bhatta, B. (2010) *Analysis of Urban Growth and Sprawl from Remote Sensing*, Springer, Berlin Heidelberg.41
2. Burrough, P.A., and McDonnell, R.A. (2000) *Principles of Geographical Information System- Spatial Information System and Geo-statistics*. Oxford University Press
3. Chauniyal, D.D. (2010) *Sudur Samvedan evam Bhogolik Suchana Pranali*, Sharda Pustak Bhawan, Allahabad
4. Heywoods, I., Cornelius, S and Carver, S. (2006) *An Introduction to Geographical Information system*. Prentice Hall.
5. Jha, M.M. and Singh, R.B. (2008) *Land Use: Reflection on Spatial Informatics Agriculture and Development*, New Delhi: Concept.
6. Nag, P. (2008) *Introduction to GIS*, Concept India, New Delhi.
7. Sarkar, A. (2015) *Practical geography: A systematic approach*. Orient Black Swan Private Ltd., New Delhi
8. Singh, R.B. and Murai, S. (1998) *Space Informatics for Sustainable Development*, Oxford and IBH, New Delhi.

## B.A Honours in Geography: 5<sup>th</sup> Semester

### Regional Planning and Transport Geography:

#### Regional Planning:

1. **Region:** Definition; Types and Characteristics of Natural, Formal, Functional and Planning Regions; Hierarchy of Planning regions (Macro, Meso, Micro); Delineation of Regions.
2. **Schemes of Regionalization in India:** Natural Region, Planning Region, Economic Region.
3. **Regional Planning:** Definition; Basic Principles; Types of Planning.

#### Suggested Readings:

1. Blij H. J. De, 1971: *Geography: Regions and Concepts*, John Wiley and Sons.
2. Claval P.I, 1998: *An Introduction to Regional Geography*, Blackwell Publishers, Oxford and Massachusetts.
3. Friedmann J. and Alonso W. (1975): *Regional Policy - Readings in Theory and Applications*, MIT Press, Massachusetts.
4. Gore C. G., 1984: *Regions in Question: Space, Development Theory and Regional Policy*, Methuen, London.
5. Gore C. G., Köhler G., Reich U-P. and Ziesemer T., 1996: *Questioning Development; Essays on the Theory, Policies and Practice of Development Intervention*, Metropolis- Verlag, Marburg.
6. Haynes J., 2008: *Development Studies*, Polity Short Introduction Series.
7. Johnson E. A. J., 1970: *The Organization of Space in Developing Countries*, MIT Press, Massachusetts.
8. Peet R., 1999: *Theories of Development*, The Guilford Press, New York.
9. UNDP 2001-04: *Human Development Report*, Oxford University Press.
10. World Bank 2001-05: *World Development Report*, Oxford University Press, New York

#### Transport Geography:

1. **Introduction of Transportation:** Nature and Scope; Historical Development of Transport Geography: Models of Transportation; Importance of Transportation
2. **Structure of Transport Network:** Connectivity of Networks; Accessibility and Associated Number; Shimble and Detour Index; Centrality within the Networks; Spread and Diameter of Networks;
3. **Traffic Flow Analysis:** Traffic of the Networks; Traffic Flow Characteristics; Parameters of Traffic Flow
4. **Transport Problems:** Problems of Urban and Rural Transport.

## Suggested Readings

1. Adams, J., (1981) 'Transport Planning, Vision and practice', Routledge & Kegan Paul Ltd., London, UK.
2. Arora, N.L. (2003). A Text Book of Transportation Engineering. Delhi: New Indian Publishing House.
3. Black, W. R. (2004). Recent developments in US Transport Geography. In Hensher, D.A et. al (2004). *Hand book of transport geography and spatial system*.
4. Ramanathan R. (2004). Indian transport towards the new millennium. New Delhi: Concept publishing company.
5. Ramanujam, K.N. (1993). *Rural transportation in India*. New Delhi: Mittal Publication.
6. Rodrigue, J.P. et.al. 2<sup>nd</sup> ed. (2006). *The Geography of Transport System*. USA (Oxon): Routledge.
7. Taaffe, E.J., Gauthier, H.L. (1973). *Geography of Transportation*, Prentice Hall
8. Saxena, H.M. (2010). *Transport Geography*. New Delhi: Rawat Publication.

## Computer Application in Geography (Practical):

- Components of Hardware and Software
- Use of MS-Office ( Word, Excel, PowerPoint)
- Page Maker and Corel Draw
- Drawing of Maps and Diagrams using MS-Excel
- Statistical Application using MS-Excel

## Suggested Readings:

1. Ahn, J. K. (1984). *Automatic Name Placement System*. Publication No. IPL-TR-063, Image Processing Laboratory, Rensselaer Polytechnic Institute, Troy, NY.
2. Andrews, S. K., and D. W. Tilton, (1993). "How Multimedia and Hypermedia Are Changing the Look of Maps." *Proceedings, AUTOCARTO 11, Eleventh Inter-national Symposium on Computer Assisted Cartography*, Minneapolis.
3. Hall, S. S. (1992). *Mapping the Next Millennium: The Discovery of New Geographies*. New York: Random House.
4. Moellering, H. (1983). "Designing Interactive Cartographic Systems Using the Concepts of Real and Virtual Maps." *Proceedings, AUTOCARTO 6, Sixth International Symposium on Computer-Assisted Cartography*, Ottawa.
5. Moellering, H., ed. (1991). "Special Content: Analytical Cartography." *Cartography and Geographic Information Systems*.
6. Morrison, J. L. (1980). "Computer Technology and Cartographic Change. " in *The Computer in Contemporary Cartography*, edited by D. R. F. Taylor. New York: Wiley.
7. Tobler, W. R. (1959). "Automation and Cartography." *Geographical Review*.
8. Tobler, W. R. (1976). "Analytical Cartography." *American Cartographer*.
9. Wolter, J. A. (1975). *The Emerging Discipline of Cartography*. Department of Geography, University of Minnesota, Ph.D. Dissertation, University Microfilms, Ann Arbor, MI.

## Urban Geography:

1. Urban geography: Introduction, nature and scope
2. Patterns of Urbanisation in developed and developing countries
3. Functional classification of cities and Urban Morphology
4. Urban Issues: problems of housing, slums, civic amenities

## Suggested Readings

1. Fyfe N. R. and Kenny J. T., 2005: *The Urban Geography Reader*, Routledge.
2. Graham S. and Marvin S., 2001: *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*, Routledge.
3. Hall T., 2006: *Urban Geography*, Taylor and Francis.
4. Kaplan D. H., Wheeler J. O. and Holloway S. R., 2008: *Urban Geography*, John Wiley.
5. Knox P. L. and McCarthy L., 2005: *Urbanization: An Introduction to Urban Geography*, Pearson Prentice Hall New York.
6. Knox P. L. and Pinch S., 2006: *Urban Social Geography: An Introduction*, Prentice-Hall.
7. Pacione M., 2009: *Urban Geography: A Global Perspective*, Taylor and Francis.
8. Sassen S., 2001: *The Global City: New York, London and Tokyo*, Princeton University Press.
9. Ramachandran R (1989): *Urbanisation and Urban Systems of India*, Oxford University Press, New Delhi
10. Ramachandran, R., 1992: *The Study of Urbanisation*, Oxford University Press, Delhi
11. Singh, R.B. (Eds.) (2001) *Urban Sustainability in the Context of Global Change*, Science Pub., Inc., Enfield (NH), USA and Oxford & IBH Pub., New Delhi.
12. Singh, R.B. (Ed.) (2015) *Urban development, challenges, risks and resilience in Asian megacities*. *Advances in Geographical and Environmental Studies*, Springer

## Geography of Health and Well-Being:

1. Perspectives on Health: Definition; linkages with environment, development and health; driving forces in health and environmental trends - population dynamics, urbanization, poverty and inequality.
2. Pressure on Environmental Quality and Health: Human activities and environmental pressure land use and agricultural development; industrialisation; transport and energy.
3. Exposure and Health Risks: Air pollution; household wastes; water; housing; workplace.
4. Health and Disease Pattern in Environmental Context with special reference to India, Types of Diseases and their regional pattern (Communicable and Lifestyle related diseases).
5. Climate Change and Human Health: Changes in climate system – heat and cold; Biological disease agents; food production and nutrition.

## Suggested Readings

1. Akhtar Rais (Ed.), 1990 : *Environment and Health Themes in Medical Geography*, Ashish Publishing House, New Delhi.
2. Avon Joan L. and Jonathan A Patzed.2001 : *Ecosystem Changes and Public Health*, Baltimin, John Hopling Unit Press(ed).



3. Bradley, D., 1977: *Water, Wastes and Health in Hot Climates*, John Wiley Chichester.
4. Christaller George and Hristopoulos Dionissios, 1998: *Spatio Temporal Environment Health Modelling*, Boston Kluwer Academic Press.
5. Cliff, A.D. and Peter, H., 1988 : *Atlas of Disease Distributions*, Blackwell Publishers, Oxford.
6. Gatrell, A., and Loytonen, 1998 : *GIS and Health*, Taylor and Francis Ltd, London.
7. Hardham T. and Tannav M., (eds): *Urban Health in Developing Countries; Progress, Projects, Earthgoan*, London.
8. Murray C. and A. Lopez, 1996 : *The Global Burden of Disease*, Harvard University Press.
9. Moeller Dade wed., 1993: *Environmental Health*, Cambridge, Harvard Univ. Press.
10. Phillips, D. and Verhasselt, Y., 1994: *Health and Development*, Routledge, London.
11. Tromp, S., 1980: *Biometeorology: The Impact of Weather and Climate on Humans and their Environment*, Heydon and Son.

### **Fluvial Geomorphology:**

1. **Fundamentals of river hydraulics:** Fluid mechanics, channel forces, factors controlling flow velocity, velocity and its distribution, measurement of velocity and water discharge, types of stream flow.
2. **Fluvial processes:** erosional processes and landforms development-valley development, valley widening, river terraces. Depositional processes and landforms development-alluvial fan, flood plain and delta.
3. **Channel patterns:** origin, development and characteristics of Straight channel, braided channel, meandering channel and floodplain channels.
4. **River profiles:** longitudinal and transverse profile.
5. **Drainage Basin as a Fundamental Geomorphic Unit:** definition, function and characteristics of drainage basin and morphometric units.
6. **Problems related to river:** river bank erosion, sedimentation, flood problem with particular reference to the sub Himalayan Rivers in North Bengal.

### **Suggested Readings:**

1. Ahmed, E. 1985. *Geomorphology*. Kalyani Publishers, New Delhi.
2. Allison, Robert J. (ed.) 2002. *Applied Geomorphology: Theory and Practice*. John Wiley, Chichester UK.
3. Bloom, A. L. 1998/ 2001. *Geomorphology*. 3<sup>rd</sup> edition. Prentice Hall of India, New Delhi.
4. Chorley, R.J., Schumm, S. A. and Sugden, D. E. 1984. *Geomorphology*. Methuen and Company Ltd., London.
5. Fairbridge, R.W. (ed.) 1968. *Encyclopaedia of Geomorphology*. Reinhold Book Corporation., New York
6. Goudie, Andrew (ed.) 2004. *Encyclopedia of Geomorphology*. Volume 2. Routledge, London.
7. Gregory, K.J. and Walling, D.E. 1973. *Drainage Basin Form and Process*. Edward Arnold, London.
8. Jog, S. R. (ed.) 1995. *Indian Geomorphology* (2 vols.). Rawat Publications, Jaipur
9. Kale, V. and Gupta, A. 2001. *Introduction to Geomorphology*. Orient Longman, Hyderabad.
10. King, C.A.M. 1966. *Techniques in Geomorphology*. Edward Arnold, London.
11. Kondolf, G. Mathias and Piégay, Hervé (eds.) 2003. *Tools in Fluvial Geomorphology*. John Wiley, Chichester UK.
12. Marchetti, Mauro and Rivas, Victoria (eds.) 2001. *Geomorphology and Environmental Impact*

*Assessment*. Swets & Zeitlinger, the Netherlands.

13. Pethick, J. 1984. *An Introduction to Coastal Geomorphology*. Arnold, London. Indian reprint 2000.
14. Sparks, B.W. 1986. *Geomorphology*. Longmans, London.
15. Thornbury, W.D. 2005. *Principles of Geomorphology*. John Wiley, New York. Rev. Ed.
16. Wooldridge, S.W. and Morgan, R.S. 1959. *The Physical Basis of Geography: An Outline of Geomorphology*. Longman, London.

### **Cartography:**

1. Types of Maps; Techniques for the study of spatial patterns of distribution; Choropleth; Isopleth and Chorochromatic maps and Pie Diagram; Mapping of location-specific data; Accessibility and Flow Maps
2. Remote Sensing and Computer application in Mapping; Digital Mapping; GIS

### **Suggested Readings:**

1. Gupta K.K. and Tyagi, V. C., 1992: Working with Map, Survey of India, DST, New Delhi.
2. Mishra R.P. and Ramesh, A., 1989: Fundamentals of Cartography, Concept, New Delhi.
3. Monkhouse F. J. and Wilkinson H. R., 1973: Maps and Diagrams, Methuen, London.
4. Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
5. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi
6. Singh R L & Rana P B Singh(1991) Prayogtmak Bhugol ke Mool Tatva, Kalyani Publishers, New Delhi
7. Sharma, J P (2010) Prayogtmak Bhugol ki Rooprekha, Rastogi Publications, Meerut
8. Singh, R L & Dutta, P K (2012) Prayogtmak Bhugol, Central Book Depot, Allahabad
9. Bhatta, B. (2010) Analysis of Urban Growth and Sprawl from Remote Sensing, Springer, Berlin Heidelberg.41
10. Burrough, P.A., and McDonnell, R.A. (2000) Principles of Geographical Information System-Spatial Information System and Geo-statistics. Oxford University Press
11. Chauniyal, D.D. (2010) Sudur Samvedan evam Bhogolik Suchana Pranali, Sharda Pustak Bhawan, Allahabad
12. Heywoods, I., Cornelius, S and Carver, S. (2006) An Introduction to Geographical Information system. Prentice Hall.
13. Jha, M.M. and Singh, R.B. (2008) Land Use: Reflection on Spatial Informatics Agriculture and Development, New Delhi: Concept.
14. Nag, P. (2008) Introduction to GIS, Concept India, New Delhi.
15. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi

## Population Geography:

1. **Nature and Scope:** Scope and Content of Population Geography; Sources of Data with special reference to India.
2. **Population Dynamics:** Spatial and temporal changes in the size, composition and distribution of population- global perspective with special focus on India; Population Structure: Age-Sex Specific; Population Composition: Economic and Ethnic.
3. **Demographic Attributes:** Fertility, Mortality and Migration: measures and determinants; Concepts of ageing: Inter-relationship between population ageing, fertility, mortality and migration: Stationary and Stable population; Problems of under, over, declining and zero population.
4. **Theories:** Theories of Population Growth: Malthus, Marx, Optimum and Demographic transition; Migration theories: Ravenstien and Everetts Lee.
5. **Population and Development:** Population resource regions of the world; Changing concept of Development: Physical Quality of Life Index (PQLI); Human Development Index (HDI); Gender Development Index (GDI); Concepts and Measures of Poverty: Human Poverty Index (HPI).
6. **Population Policies:** Population policies in developed and developing countries (case study of India). National Health and Family Planning Programmes: RCH, National Population Policy 2000, National Health Policy 2002, and National Rural Health Mission 2005.

## Suggested Readings:

1. Barrett H. R., 1995: *Population Geography*, Oliver and Boyd.
2. Bhende A. and Kanitkar T., 2000: *Principles of Population Studies*, Himalaya Publishing House.
3. Chandna R. C. and Sidhu M. S., 1980: *An Introduction to Population Geography*, Kalyani Publishers.
4. Clarke J. I., 1965: *Population Geography*, Pergamon Press, Oxford.
5. Jones, H. R., 2000: *Population Geography*, 3<sup>rd</sup> ed. Paul Chapman, London.
6. Lutz W., Warren C. S. and Scherbov S., 2004: *The End of the World Population Growth in the 21st Century*, Earthscan
7. Newbold K. B., 2009: *Population Geography: Tools and Issues*, Rowman and Littlefield Publishers.
8. Pacione M., 1986: *Population Geography: Progress and Prospect*, Taylor and Francis.
9. Wilson M. G. A., 1968: *Population Geography*, Nelson.
10. Panda B P (1988): *Janasankya Bhugol*, M P Hindi Granth Academy, Bhopal
11. Maurya S D (2009) *Jansankya Bhugol*, Sharda Putak Bhawan, Allahabad
12. Chandna, R C (2006), *Jansankhya Bhugol*, Kalyani Publishers, Delhi

## B.A Honours in Geography: 6<sup>th</sup> Semester

### Geography of India and West Bengal:

1. Physical: Physiographic Divisions, soil and vegetation, climate (characteristics and classification)
2. Population: Distribution and growth, Structure
3. Economic: Mineral and power resources distribution and utilisation of iron ore, coal, petroleum, gas; agricultural production and distribution of rice and wheat, industrial development : automobile and Information technology

4. Social: Distribution of population by race, caste, religion, language, tribes and their correlates
5. Regionalisation of India: Physiographic (R. L. Singh), Socio – cultural (Sopher), Economic (Sengupta)

### Suggested Readings

1. Deshpande C. D., 1992: *India: A Regional Interpretation*, ICSSR, New Delhi.
2. Johnson, B. L. C., ed. 2001. *Geographical Dictionary of India*. Vision Books, New Delhi.
3. Mandal R. B. (ed.), 1990: *Patterns of Regional Geography – An International Perspective. Vol. 3 Indian Perspective*.
4. Sdyasuk Galina and P Sengupta (1967): *Economic Regionalisation of India*, Census of India
5. Sharma, T. C. 2003: *India - Economic and Commercial Geography*. Vikas Publ., New Delhi.
6. Singh R. L., 1971: *India: A Regional Geography*, National Geographical Society of India.
7. Singh, Jagdish 2003: *India - A Comprehensive & Systematic Geography*, Gyanodaya Prakashan, Gorakhpur.
8. Spate O. H. K. and Learmonth A. T. A., 1967: *India and Pakistan: A General and Regional Geography*, Methuen.
9. Tirtha, Ranjit 2002: *Geography of India*, Rawat Publs., Jaipur & New Delhi.
10. Pathak, C. R. 2003: *Spatial Structure and Processes of Development in India*. Regional Science Assoc., Kolkata.
11. Tiwari, R.C. (2007) *Geography of India*. Prayag Pustak Bhawan, Allahabad
12. Sharma, T.C. (2013) *Economic Geography of India*. Rawat Publication, Jaipur

### Field Work and Research Methods:

1. **Field Work:** Types and Methods
2. **Geographic Enquiry:** Definition and Ethics; Framing Research Questions, Objectives and Hypothesis; Literature Review; Preparing Sample Questionnaire
3. **Data Collection:** Type and Sources of Data; Methods of Collection; Input and Editing
4. **Data Analysis:** Qualitative Data Analysis; Quantitative Data Analysis; Data Representation Techniques
5. **Structure of a Research Report:** Preliminaries; Text; References, Bibliography and Citations; Abstract
6. Preparation of Research Report

### Suggested Readings

1. Creswell J., 1994: *Research Design: Qualitative and Quantitative Approaches* Sage Publications.
2. Dikshit, R. D. 2003. *The Art and Science of Geography: Integrated Readings*. Prentice-Hall of India, New Delhi.
3. Evans M., 1988: "Participant Observation: The Researcher as Research Tool" in *Qualitative Methods in Human Geography*, eds. J. Eyles and D. Smith, Polity.
4. Misra, R.P. (2002) *Research Methodology*, Concept Publications, New Delhi.
5. Mukherjee, Neela 1993. *Participatory Rural Appraisal: Methodology and Application*. Concept Pubs. Co., New Delhi.
6. Mukherjee, Neela 2002. *Participatory Learning and Action: with 100 Field Methods*. Concept Pubs. Co., New Delhi
7. Robinson A., 1998: "Thinking Straight and Writing That Way", in *Writing Empirical Research Reports: A Basic Guide for Students of the Social and Behavioural Sciences*, eds. by F. Pryczak and

R. Bruce Pryczak, Publishing: Los Angeles.

8. Special Issue on "Doing Fieldwork" *The Geographical Review* 91:1-2 (2001).
9. Stoddard R. H., 1982: *Field Techniques and Research Methods in Geography*, Kendall/Hunt.
13. Wolcott, H. 1995. *The Art of Fieldwork*. Alta Mira Press, Walnut Creek, CA.
14. Yadav, H. (2013) *Shodh Pravidhi Evam Matratamak Bhugol*, Raja Publications, Delhi.

### **Regional Planning:**

Regional Concept in Geography; Concept of planning region; Types of regions; Methods of regional delineation; Regional planning in India; Indicators of Development; Regional imbalances; Evolution, nature and scope of town planning with special reference to India; Fundamentals of Town and Country Planning.

### **Suggested Readings:**

1. Blij H. J. De, 1971: *Geography: Regions and Concepts*, John Wiley and Sons.
2. Claval P.I, 1998: *An Introduction to Regional Geography*, Blackwell Publishers, Oxford and Massachusetts.
3. Friedmann J. and Alonso W. (1975): *Regional Policy - Readings in Theory and Applications*, MIT Press, Massachusetts.
4. Gore C. G., 1984: *Regions in Question: Space, Development Theory and Regional Policy*, Methuen, London.
5. Gore C. G., Köhler G., Reich U-P. and Ziesemer T., 1996: *Questioning Development; Essays on the Theory, Policies and Practice of Development Intervention*, Metropolis- Verlag, Marburg.
6. Haynes J., 2008: *Development Studies*, Polity Short Introduction Series.
7. Johnson E. A. J., 1970: *The Organization of Space in Developing Countries*, MIT Press, Massachusetts.
8. Peet R., 1999: *Theories of Development*, The Guilford Press, New York.
9. UNDP 2001-04: *Human Development Report*, Oxford University Press.
10. World Bank 2001-05: *World Development Report*, Oxford University Press, New York

### **Tribal Studies:**

1. **Tribe** : Definition; General Characteristics; Special characteristics; nomenclature; geographical distribution; linguistic classification; racial classification; economic classification; cultural classification; religious classification; Antiquity of Indian Tribes; Tribes in translation and transcription; tribes in ancient; medieval and Modern present time.
2. **Tribes and Constitution:** 5<sup>th</sup> Schedule and 6<sup>th</sup> schedule of Constitution; Administration of Scheduled area- special power of Governor; Report to President; Tribal Advisory Council;(TAC) Administration of Tribal Areas.
3. **Problems of Tribes:** Nature of problems; tribes in transitions; education; economical;Health; communication; administrative infrastructures etc.
4. **Indian Tribes:** Santal, Garo, Naga, Bhil, Andamanese, Khasi, Gond

### **Suggested Readings:**

1. Sharma, B.D : Planning for tribal Development, Prachi Prakashan, New Delhi. 1984( relevant chapters only).
2. Sharma T.C. & D.N. Mazumdar (eds.) :Eastern Himalayas, Cosmo Publication, New Delhi (1980) relevant chapters only.
3. Thaper, Ramesh (Ed) : Tribe, Caste and Religion in India, Macmillan, Delhi, 1977 (relevant articles only.)
4. Vidharthi, L.P. and B.K. Rai : The Tribal Culture of India, Concept Publishing, New Delhi, 2nd Edition, 1985 (relevant parts).
5. Xaxa, Virginius (2008) : *State Society and Tribes : Issues in Post Colonial India*, Dorling Kindersley, Delhi.
6. Mibang.T. and Behera, M.C. 2007: *Tribal Studies: Emerging Frontiers of Knowledge*, (Edited), Mittal, New Delhi.
7. Behera, M.C. (2004): *Globalization and Development Dilemma-Reflections from North East India*, (Edited), Mittal Publications, New Delhi.
8. Behera, M.C. (2000): *Tribal Religion, Change and Continuity (Ed.)*, Commonwealth Publishers, New Delhi
9. Behera, M.C. (1997) : *Trends in Agrarian Structure in the Hills of North-East India* (Co-edited), Common wealth Publishers, New Delhi.

### **Agricultural Geography:**

1. Defining the Field: Introduction, nature and scope; Land use/ land cover definition and classification.
2. Determinants of Agriculture: Physical, Technological and Institutional
3. Agricultural Regions of India: Agro-climatic, Agro-ecological & Crop Combination Regions.
4. Agricultural Systems of the World (Whittlesey's classification) and Agricultural Land use model (Von Thuenen, modification and relevance).
5. Agricultural Revolutions in India: Green, White, Blue, Pink

### **Suggested Readings**

1. Basu, D.N., and Guha, G.S., 1996: *Agro-Climatic Regional Planning in India*, Vol.I & II, Concept Publication, New Delhi.
2. Bryant, C.R., Johnston, T.R, 1992: *Agriculture in the City Countryside*, Belhaven Press, London.
3. Burger, A., 1994: *Agriculture of the World*, Aldershot, Avebury.
4. Grigg, D.B., 1984: *Introduction to Agricultural Geography*, Hutchinson, London.
5. Ilbery B. W., 1985: *Agricultural Geography: A Social and Economic Analysis*, Oxford University Press.
6. Mohammad, N., 1992: *New Dimension in Agriculture Geography*, Vol. I to VIII, Concept Pub., New Delhi.
7. Roling, N.G., and Wageruters, M.A.E.,(ed.) 1998: *Facilitating Sustainable Agriculture*,

Cambridge University Press, Cambridge.

8. Shafi, M., 2006: *Agricultural Geography*, Doring Kindersley India Pvt. Ltd., New Delhi
9. Singh, J., and Dhillon, S.S., 1984: *Agricultural Geography*, Tata McGraw Hill, New Delhi.
10. Tarrant J. R., 1973: *Agricultural Geography*, David and Charles, Devon.

## Social Geography

1. **Social Geography:** Concept, Origin, Nature and Scope.
2. **Peopling Process of India:** Technology and Occupational Change; Migration.
3. **Social Categories:** Caste, Class, Religion, Race and Gender and their Spatial distribution
4. **Geographies of Welfare and Well being:** Concept and Components – Healthcare, Housing and Education.
5. Social Geographies of Inclusion and Exclusion, Slums, Gated Communities, Communal Conflicts and Crime.

## Suggested Readings:

1. Ahmed A., 1999: *Social Geography*, Rawat Publications.
2. Casino V. J. D., Jr., 2009) *Social Geography: A Critical Introduction*, Wiley Blackwell.
3. Cater J. and Jones T., 2000: *Social Geography: An Introduction to Contemporary Issues*, Hodder Arnold.
4. Holt L., 2011: *Geographies of Children, Youth and Families: An International Perspective*, Taylor & Francis.
5. Panelli R., 2004: *Social Geographies: From Difference to Action*, Sage.
6. Rachel P., Burke M., Fuller D., Gough J., Macfarlane R. and Mowl G., 2001: *Introducing Social Geographies*, Oxford University Press.
7. Smith D. M., 1977: *Human geography: A Welfare Approach*, Edward Arnold, London.
8. Smith D. M., 1994: *Geography and Social Justice*, Blackwell, Oxford.
9. Smith S. J., Pain R., Marston S. A., Jones J. P., 2009: *The SAGE Handbook of Social Geographies*, Sage Publications.
10. Sopher, David (1980): *An Exploration of India*, Cornell University Press, Ithasa
11. Valentine G., 2001: *Social Geographies: Space and Society*, Prentice Hall.

## Political Geography

1. **Introduction:** Concepts, Nature and Scope.
2. **State, Nation and Nation State:** Concept of Nation and State, Attributes of State – Frontiers, Boundaries, Shape, Size, Territory and Sovereignty, Concept of Nation State; Geopolitics; Theories (Heartland and Rimland)
3. **Electoral Geography:** Geography of Voting, Geographic Influences on Voting pattern, Geography of Representation, Gerrymandering.
4. **Political Geography of Resource Conflicts:** Water Sharing Disputes, Disputes and Conflicts Related to Forest Rights and Minerals.
5. **Politics of Displacement:** Issues of relief, compensation and rehabilitation: with reference to Dams and Special Economic Zones

## Suggested Readings:

1. Agnew J., 2002: *Making Political Geography*, Arnold.

2. Agnew J., Mitchell K. and Toal G., 2003: *A Companion to Political Geography*, Blackwell.
3. Cox K. R., Low M. and Robinson J., 2008: *The Sage Handbook of Political Geography*, Sage Publications.
4. Cox K., 2002: *Political Geography: Territory, State and Society*, Wiley-Blackwell
5. Gallaher C., et al, 2009: *Key Concepts in Political Geography*, Sage Publications.
6. Glassner M., 1993: *Political Geography*, Wiley.
7. Jones M., 2004: *An Introduction to Political Geography: Space, Place and Politics*, Routledge .
8. Mathur H M and M M Cernea (eds.) *Development, Displacement and Resettlement – Focus on Asian Experience*, Vikas, Delhi
9. Painter J. and Jeffrey A., 2009: *Political Geography*, Sage Publications.
10. Taylor P. and Flint C., 2000: *Political Geography*, Pearson Education.
11. Verma M K (2004): *Development, Displacement and Resettlement*, Rawat Publications, Delhi
12. Hodder Dick, Sarah J Llyod and Keith S McLachlan (1998), *Land Locked States of Africa and Asia* (vo.2), Frank Cass

## Hydrology and Oceanography

1. Hydrological Cycle: Systems approach in hydrology, human impact on the hydrological cycle; Precipitation, interception, evaporation, evapo-transpiration, infiltration, ground-water, run off and over land flow; Hydrological input and output.
2. River Basin and Problems of Regional Hydrology: Characteristics of river basins, basin surface run-off, measurement of river discharge; floods and droughts.
3. Ocean Floor Topography and Oceanic Movements – Waves, Currents and Tides.
4. Ocean Salinity and Temperature – Distribution and Determinants.
5. Coral Reefs and Marine Deposits and Ocean Resources: Types and Theories of Origin; Biotic, Mineral.

## Suggested Readings

1. Andrew. D. ward and Stanley, Trimble (2004): *Environmental Hydrology*, 2nd edition, Lewis Publishers, CRC Press.
2. Karanth, K.R., 1988 : *Ground Water: Exploration, Assessment and Development*, Tata- McGraw Hill, New Delhi.
3. Ramaswamy, C. (1985): *Review of floods in India during the past 75 years: A Perspective*. Indian National Science Academy, New Delhi.
4. Rao, K.L., 1982 : *India's Water Wealth* 2nd edition, Orient Longman, Delhi,.
5. Singh, Vijay P. (1995): *Environmental Hydrology*. Kluwar Academic Publications, The Netherlands.
6. Anikouchine W. A. and Sternberg R. W., 1973: *The World Oceans: An Introduction to Oceanography*, Prentice-Hall.
7. Garrison T., 1998: *Oceanography*, Wordsworth Company, Belmont.
8. Kershaw S., 2000: *Oceanography: An Earth Science Perspective*, Stanley Thornes, UK.
9. Pinet P. R., 2008: *Invitation to Oceanography* (Fifth Edition), Jones and Barlett Publishers, USA, UK and Canada.
10. Sharma R. C. and Vatal M., 1980: *Oceanography for Geographers*, Chaitanya Publishing House, Allahabad.





# **CURRICULUM**

**B.A. General in Geography**  
(w.e.f. 2017-2018)



**UNDER CHOICE BASED CREDIT SYSTEM**

|            | <b>CORE COURSE<br/>(12)</b>        | <b>Ability<br/>Enhancement<br/>Compulsory<br/>Course<br/>(AECC) (2)</b> | <b>Skill<br/>Enhancement<br/>Course (SEC)<br/>(2)</b>                    | <b>Discipline<br/>Specific<br/>Elective DSE<br/>(4)</b> | <b>Generic<br/>Elective<br/>GE (2)</b> |
|------------|------------------------------------|---|--|---|--|
| <b>I</b>   | English/MIL-1                      | (English/MIL<br>Communication) /<br>Environmental<br>Science            |  |   |  |
|            | Physical Geography                 |   |  |   |  |
|            | DSC- 2 A                           |   |  |   |  |
| <b>II</b>  | English/MIL-1                      | Environmental<br>Science/<br>(English/MIL<br>Communication)             |  |   |  |
|            | Human Geography                    |   |  |   |  |
|            | DSC- 2 B                           |   |  |   |  |
| <b>III</b> | English/MIL-2                      |   | Regional<br>Planning and<br>Development                                  |   |  |
|            | General Cartography<br>(Practical) |   |  |   |  |
|            | DSC- 2 C                           |   |  |   |  |
| <b>IV</b>  | English/MIL-2                      |   | Remote Sensing<br>and GPS based<br>Project Report                        |   |  |
|            | Environmental<br>Geography         |   |  |   |  |
|            | DSC- 2 D                           |   |  |   |  |
| <b>V</b>   |                                    |   | GIS based<br>Project Report<br>(Practical)                               | Geography of<br>India<br>or<br>Economic<br>Geography    | GE-1                                   |
|            |                                    |   |  | DSE-2 A   |  |
| <b>VI</b>  |                                    |   | Field<br>Techniques and<br>Survey based<br>Project Report<br>(Practical) | Disaster<br>Management<br>or<br>Geography of<br>Tourism | GE-2                                   |
|            |                                    |   |  | DSE-2 B   |  |

**Note:**

**1. Practical paper will not have tutorials**



# **B.A./B.Sc. Geography**

## **Core Course (4 Compulsory Papers)**

### **Semester I**

1. Physical Geography

### **Semester II**

2. Human Geography

### **Semester III**

3. General Cartography (Practical)

### **Semester IV**

4. Environmental Geography

## **Skill Enhancement Course (2 Compulsory Papers)**

### **Semester III**

1. Regional Planning and Development

### **Semester IV**

2. Remote Sensing and GPS based Project Report

### **Semester V**

3. GIS based Project Report (Practical)

### **Semester VI**

4. Field Techniques and Survey based Project Report (Practical)

## **Discipline Specific Elective Papers (2 Compulsory Papers)**

### **Semester V**

1. Geography of India
2. Economic Geography

### **Semester VI**

3. Disaster Management
4. Geography of Tourism

## **Generic Elective (2)**

### **Semester V**

1. Disaster Risk Reduction

### **Semester VI**

2. Sustainability and Development

# **B.A./B.Sc. Geography**

## **Core Courses**

### **Physical Geography**

1. Physical Geography –Scope and Content.
2. Atmosphere – Heat Balance, Global Circulation Pattern, Tropical Cyclones, Monsoon, Climatic Classification (Koppen and Thornthwaite).
3. Lithosphere – Internal Structure of Earth based on Seismic Evidence, Plate Tectonics and Continental Drift; Earthquake and Vulcanicity
4. Fluvial Cycle of Erosion – Davis and Penck.
5. Hydrosphere – Hydrological Cycle, Ocean Bottom Relief Features, Tides and Currents.

### **Suggested Readings**

1. Conserva H. T., 2004: Illustrated Dictionary of Physical Geography, Author House, USA.
2. Gabler R. E., Petersen J. F. and Trapasso, L. M., 2007: Essentials of Physical Geography (8th Edition), Thompson, Brooks/Cole, USA.
3. Garrett N., 2000: Advanced Geography, Oxford University Press.
4. Goudie, A., 1984: The Nature of the Environment: An Advanced Physical Geography, Basil Blackwell Publishers, Oxford.
5. Hamblin, W. K., 1995: Earth's Dynamic System, Prentice Hall, N.J.
6. Husain M., 2002: Fundamentals of Physical Geography, Rawat Publications, Jaipur.
7. Monkhouse, F. J. 2009: Principles of Physical Geography, Platinum Publishers, Kolkata.
8. Strahler A. N. and Strahler A. H., 2008: Modern Physical Geography, John Wiley & Sons, New York.

## **Human Geography**

1. Definition, Nature and Scope, Major Subfields, Contemporary Relevance.
2. Space and Society: Cultural Regions; Race; Religion and Language
3. Population: Population Growth and Demographic Transition Theory.
4. World Population Distribution and Composition (Age, Gender and Literacy).
5. Settlements: Types and Patterns of Rural Settlements; Classification of Urban Settlements; Trends and Patterns of World and Indian Urbanization

## **Suggested Readings**

1. Chandna, R.C. (2010) Population Geography, Kalyani Publisher.
2. Daniel, P.A. and Hopkinson, M.F. (1989) The Geography of Settlement, Oliver & Boyd, London.
3. Johnston R; Gregory D, Pratt G. et al. (2008) The Dictionary of Human Geography, Blackwell Publication.
4. Jordan-Bychkov et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.
5. Kaushik, S.D. (2010) Manav Bhugol, Rastogi Publication, Meerut.
6. Maurya, S.D. (2012) Manav Bhugol, Sharda Pustak Bhawan. Allahabad.
7. Ghosh, S. (2015) Introduction to settlement geography. Orient Black Swan Private Ltd., Kolkata
8. Hussain, Majid (2012) Manav Bhugol. Rawat Publications, Jaipur

## **General Cartography (Practical)**

1. Maps – Types, Elements and Uses
2. Map Scale – Types ( Linear, Comparative, Diagonal and Vernier) and Application, Reading Distances on a Map.
3. Map Projections – Criteria for Choice of Projections; Attributes and Properties of: Zenithal Gnomonic Polar Case, Cylindrical Equal Area, Mercator's Projection, Conical Projection with One Standard Parallel, Bonne's Projection.
4. Representation of Data – Bar, Simple Pie, Dots and Sphere, Choropleth, Isopleth and Flow Diagrams
5. Interpretation of Topographical Maps.

**Note:** This paper is not a practical paper, and the objective is to give basic information about various tools and techniques used in making maps. Students will not be involved in any laboratory work or hands on exercises, though a few demonstrations in the laboratories by teachers are recommended.

## **Suggested Readings**

1. Dent B. D., 1999: *Cartography: Thematic Map Design*, (Vol. 1), McGraw Hill.
2. Gupta K. K and Tyagi V. C., 1992: *Working with Maps*, Survey of India, DST, New Delhi.
3. Mishra R. P. and Ramesh A., 1989: *Fundamentals of Cartography*, Concept Publishing.
4. Robinson A., 1953: *Elements of Cartography*, John Wiley.
5. Sharma J. P., 2010: *Prayogic Bhugol*, Rastogi Publishers.
6. Singh R. L. and Singh R. P. B., 1999: *Elements of Practical Geography*, Kalyani Publishers
7. Singh R. L., 1998: *Prayogic Bhoogol Rooprekha*, Kalyani Publications.
8. Steers J. A., 1965: *An Introduction to the Study of Map Projections*, University of London.



## **Environmental Geography**

1. Environmental Geography: Concepts and Approaches; Ecosystem – Concept and Structure; Ecosystem Functions.
2. Human-Environment Relationship in Equatorial, Desert, Mountain and Coastal Regions.
1. Environmental Problems and Management: Air Pollution; Biodiversity Loss; Solid and Liquid Waste.
2. Environmental Programmes and Policies: Developed Countries; Developing Countries.
3. New Environmental Policy of India; Government Initiatives.

## **Suggested Readings**

1. Casper J.K. (2010) Changing Ecosystems: Effects of Global Warming. Infobase Pub. New York.
2. Hudson, T. (2011) Living with Earth: An Introduction to Environmental Geology, PHI Learning Private Limited, New Delhi.
3. Miller, G.T. (2007) Living in the Environment: Principles, Connections, and Solutions, Brooks/ Cole Cengage Learning, Belmont.
4. Singh, R.B. (1993) Environmental Geography, Heritage Publishers, New Delhi.
5. UNEP (2007) Global Environment Outlook: GEO4: Environment For Development, United Nations Environment Programme. University Press, Cambridge.
6. Wright R. T. and Boorse, D. F. (2010) Toward a Sustainable Future, PHI Learning Pvt Ltd, New Delhi.
7. Singh, R.B. and Hietala, R. (Eds.) (2014) Livelihood security in Northwestern Himalaya:  
Case studies from changing socio-economic environments in Himachal Pradesh, India. Advances in Geographical and Environmental Studies, Springer

## **Skill Enhancement Course (2 Compulsory Papers)**

### **Regional Planning and Development**

1. Concept, Need and Types of regional Planning.
2. Characteristics and Delineation of Planning Region.
3. Regionalization of India for Planning (Agro Ecological Zones).
4. Models for Regional Planning: Growth Pole Theory; Core Periphery Model and Growth Foci Concept in Indian Context.
5. Backward Regions and Regional Plans- Special Area Development Plans in India; DVC-The Success Story and the Failures; NITI Aayog.

### **Suggested Readings**

1. Blij H. J. De, 1971: *Geography: Regions and Concepts*, John Wiley and Sons.
2. Claval P.I, 1998: *An Introduction to Regional Geography*, Blackwell Publishers, Oxford and Massachusetts.
3. Friedmann J. and Alonso W. (1975): *Regional Policy - Readings in Theory and Applications*, MIT Press, Massachusetts.
4. Gore C. G., 1984: *Regions in Question: Space, Development Theory and Regional Policy*, Methuen, London.
5. Gore C. G., Köhler G., Reich U-P. and Ziesemer T., 1996: *Questioning Development; Essays on the Theory, Policies and Practice of Development Intervention*, Metropolis- Verlag, Marburg.
6. Haynes J., 2008: *Development Studies*, Polity Short Introduction Series.
7. Johnson E. A. J., 1970: *The Organization of Space in Developing Countries*, MIT Press, Massachusetts.
8. Peet R., 1999: *Theories of Development*, The Guilford Press, New York.
9. UNDP 2001-04: *Human Development Report*, Oxford University Press.
10. World Bank 2001-05: *World Development Report*, Oxford University Press.

## **Remote Sensing and GPS based Project Report (Practical)**

1. Remote Sensing: Definition, Development, Platforms and Types.
2. Aerial Photography: Principles, Types and Geometry.
3. Satellite Remote Sensing: Principles, EMR Interaction with Atmosphere and Earth Surface; Satellites (Landsat and IRS) and Sensors.
4. Interpretation and Application of Remote Sensing: Land use/ Land Cover.
5. Global Positioning System (GPS) – Principles and Uses

**Practical Record:** A project file consisting of five exercises will be done from aerial photos, satellite images (scale, orientation and interpretation) and GPS field survey.

### **Suggested Readings**

1. Campbell J. B., 2007: *Introduction to Remote Sensing*, Guildford Press.
2. Jensen J. R., 2004: *Introductory Digital Image Processing: A Remote Sensing Perspective*, Prentice Hall.
3. Joseph, G. 2005: *Fundamentals of Remote Sensing*, United Press India.
4. Lillesand T. M., Kiefer R. W. and Chipman J. W., 2004: *Remote Sensing and Image Interpretation*, Wiley. (Wiley Student Edition).
5. Nag P. and Kudra, M., 1998: *Digital Remote Sensing*, Concept, New Delhi.
6. Rees W. G., 2001: *Physical Principles of Remote Sensing*, Cambridge University Press.
7. Singh R. B. and Murai S., 1998: *Space-informatics for Sustainable Development*, Oxford and IBH Pub.
8. Wolf P. R. and Dewitt B. A., 2000: *Elements of Photogrammetry: With Applications in GIS*, McGraw-Hill.

## **GIS based Project Report (Practical)**

1. Geographical Information System (GIS): Definition and Components.
2. GIS Data Structures: Types (spatial and Non-spatial), Raster and Vector Data Structure.
3. Application of GIS in Land Use/Land Cover Mapping.
4. Application of GIS in Urban Sprawl and Forests Monitoring

**Practical Record:** A project file consisting of 5 exercises on using any GIS Software on above mentioned themes.

## **Suggested Readings**

1. Bhatta, B. (2010) Analysis of Urban Growth and Sprawl from Remote Sensing, Springer, Berlin Heidelberg.41
2. Burrough, P.A., and McDonnell, R.A. (2000) Principles of Geographical Information System-Spatial Information System and Geo-statistics. Oxford University Press
3. Chauniyal, D.D. (2010) Sudur Samvedan evam Bhogolik Suchana Pranali, Sharda Pustak Bhawan, Allahabad
4. Heywoods, I., Cornelius, S and Carver, S. (2006) An Introduction to Geographical Information system. Prentice Hall.
5. Jha, M.M. and Singh, R.B. (2008) Land Use: Reflection on Spatial Informatics Agriculture and Development, New Delhi: Concept.
6. Nag, P. (2008) Introduction to GIS, Concept India, New Delhi.
7. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi
8. Singh, R.B. and Murai, S. (1998) Space Informatics for Sustainable Development, Oxford and IBH, New Delhi.

## **Field Techniques and Survey based Project Report**

1. Field Work in Geographical Studies – Role, Value and Ethics of Field-Work.
2. Defining the Field and Identifying the Case Study – Rural / Urban / Physical / Human / Environmental.
3. Field Techniques – Merits, Demerits and Selection of the Appropriate Technique; Observation (Participant / Non Participant).
4. Questionnaires (Open/ Closed / Structured / Non-Structured); Interview with Special Focus on Focused Group Discussions; Space Survey (Transects and Quadrants, Constructing a Sketch).
5. Designing the Field Report – Aims and Objectives, Methodology, Analysis, Interpretation and Writing the Report.

## **Practical Record**

1. Each student will prepare an individual report based on primary and secondary data collected during field work.
2. The duration of the field work should not exceed 10 days.
3. The word count of the report should be about **8000 to 12,000** excluding figures, tables, photographs, maps, references and appendices.
4. One copy of the report on A 4 size paper should be submitted in soft binding.

## **Suggested Readings**

1. Creswell J., 1994: *Research Design: Qualitative and Quantitative Approaches* Sage Publications.
2. Dikshit, R. D. 2003. *The Art and Science of Geography: Integrated Readings*. Prentice-Hall of India, New Delhi.
3. Evans M., 1988: "Participant Observation: The Researcher as Research Tool" in *Qualitative Methods in Human Geography*, eds. J. Eyles and D. Smith, Polity.
4. Mukherjee, Neela 1993. *Participatory Rural Appraisal: Methodology and Application*. Concept Publs. Co., New Delhi.
5. Mukherjee, Neela 2002. *Participatory Learning and Action: with 100 Field Methods*. Concept Publs. Co., New Delhi
6. Robinson A., 1998: "*Thinking Straight and Writing That Way*", in *Writing Empirical Research Reports: A Basic Guide for Students of the Social and Behavioural Sciences*, eds. by F. Pryczak and R. Bruce Pryczak, Publishing: Los Angeles.
7. Special Issue on "Doing Fieldwork" *The Geographical Review* 91:1-2 (2001).
8. Stoddard R. H., 1982: *Field Techniques and Research Methods in Geography*, Kendall/Hunt.
9. Wolcott, H. 1995. *The Art of Fieldwork*. Alta Mira Press, Walnut Creek, CA.

## **Discipline Specific Elective Papers (2 Compulsory Papers)**

### **Geography of India**

1. Physical Setting – Location, Structure and Relief, Drainage, Climate.
2. Population – Size and Growth since 1901, Population Distribution, Literacy, Sex Ratio.
3. Settlement System - Rural Settlement Types and Patterns, Urban Pattern.
4. Resource Base – Livestock (cattle and fisheries), Power (coal, and hydroelectricity), Minerals (iron ore and bauxite).
5. Economy – Agriculture (Rice, Wheat, Sugarcane, Groundnut, Cotton); Industries (Cotton Textile, Iron-Steel, Automobile), Transportation Modes (Road and Rail).

### **Suggested Readings**

1. Hussain M., 1992: *Geography of India*, Tata McGraw Hill Education.
2. Mamoria C. B., 1980: *Economic and Commercial Geography of India*, Shiva Lal Agarwala.
3. Miller F. P., Vandome A. F. and McBrewster J., 2009: *Geography of India: Indo- Gangetic Plain, Thar Desert, Major Rivers of India, Climate of India, Geology of India*, Alphascript Publishing.
4. Nag P. and Sengupta S., 1992: *Geography of India*, Concept Publishing.
5. Pichamuthu C. S., 1967: *Physical Geography of India*, National Book Trust.
6. Sharma T. C. and Coutinho O., 1997: *Economic and Commercial Geography of India*, Vikas Publishing.
7. Singh Gopal, 1976: *A Geography of India*, Atma Ram.
8. Spate O. H. K. and Learmonth A. T. A., 1967: *India and Pakistan: A General and Regional Geography*, Methuen.
9. Rana, Tejbir Singh, 2015, *Diversity of India*, R.K. Books, Delhi.

## **Economic Geography**

1. Definition, Approaches and Fundamental Concepts of Economic Geography; Patterns of Development.
2. Locational Theories – Agriculture (Von Thunen) and Industrial (Weber).
3. Primary Activities – Intensive Subsistence Farming, Commercial Grain Farming, Plantation, Commercial Dairy Farming, Commercial Fishing, and Mining (iron ore, coal and petroleum).
4. Secondary Activities – Cotton Textile Industry, Petro-Chemical Industry, Major Manufacturing Regions.
5. Tertiary and Quaternary Activities – Modes of Transportation, Patterns of International Trade, and Information and Communication Technology Industry.

## **Suggested Readings**

1. Alexander J. W., 1963: *Economic Geography*, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
2. Bagchi-Sen S. and Smith H. L., 2006: *Economic Geography: Past, Present and Future*, Taylor and Francis.
3. Coe N. M., Kelly P. F. and Yeung H. W., 2007: *Economic Geography: A Contemporary Introduction*, Wiley-Blackwell.
4. Combes P., Mayer T. and Thisse J. F., 2008: *Economic Geography: The Integration of Regions and Nations*, Princeton University Press.
5. Durand L., 1961: *Economic Geography*, Crowell.
6. Hodder B. W. and Lee R., 1974: *Economic Geography*, Taylor and Francis.
7. Wheeler J. O., 1998: *Economic Geography*, Wiley.
8. Willington D. E., 2008: *Economic Geography*, Husband Press.

## **Disaster Management**

1. Hazards, Risk, Vulnerability and Disasters: Definition and Concepts.
2. Disasters in India: (a) Causes, Impact, Distribution and Mapping: Flood, Landslide, Drought.
3. Disasters in India: (b) Causes, Impact, Distribution and Mapping: Earthquake, Tsunami and Cyclone.
4. Human induced disasters: Causes, Impact, Distribution and Mapping.
5. Response and Mitigation to Disasters: Mitigation and Preparedness, NDMA and NIDM; Indigenous Knowledge and Community-Based Disaster Management; Do's and Don'ts During Disasters

## **Suggested Readings**

1. Government of India. (1997) Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.
2. Kapur, A. (2010) Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
3. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
4. Singh, R.B. (2005) Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi. Chapter 1, 2 and 3
5. Singh, R. B. (ed.), (2006) Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.
6. Sinha, A. (2001). Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.
7. Stoltman, J.P. et al. (2004) International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht.



### **Geography of Tourism:**

1. Tourism Geography: Definition, Nature and Scope; Importance of Tourism; Tourism as an interdisciplinary subject
2. Factors affecting Tourism Development: Physical factors and Socio-cultural factors; Identification of Tourism Potential, SWOT Analysis
3. Classification of Tourism: On the basis of Nationality, Function, Organisation, Intensity, Age Group, Funding Sources; Recent Trends of Tourism
4. Tourism Impact Analysis: Environmental and Socio-economic Impact

### **Suggested Readings:**

1. Aerni, M.J. (1972). The Social Effect of Tourism. Current Anthropology. Vol. 13
2. Anand, M.M. (1976). Tourism and Hotel Industry in India. New Delhi. Prentice-Hall
3. Bhatia, A.K. (1997). Tourism Development: Principles and Practices. New Delhi. Sterling
4. Burton, R. (1995). Travel Geography. London. Pitman
5. Bulter, R.W. (1974). The Social Implication of Tourism Development. Tourism Research. Vol. 2. Issue 2
6. Cooper, C. (1993). Tourism Principles and Practices. London. Pitman
7. Davis, H.D. (1968). Potentials for Tourism of Developing Countries. London. Finance and Development
8. Edward. J. M. (1981). The Psychology of Leisure Travel. Boston. CBI Publishing Company
9. Geetanjali (2010). Tourism Geography. New Delhi. Centrum Press
10. Ghosh, B (2008). Tourism and Travel Management. New Delhi. Vikas Publishing House

## **Generic Elective (2)**

### **Disaster Risk Reduction**

1. Disaster; Hazards, Risk, Vulnerability and Disasters: Definition and Concepts.
2. Disasters in India: (a) Causes Impact, Distribution and Mapping: Flood and Drought.
3. Disasters in India: (b) Causes, Impact, Distribution and Mapping: Earthquake and Cyclone.
4. Human induced disasters: Causes, Impact, Distribution and Mapping.
5. Disaster Risk Reduction: Mitigation and Preparedness, NDMA and NIDM; Community-Based Disaster Management; Do's and Don'ts During Disasters

### **Suggested Readings**

1. Government of India. (1997) Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.
2. Kapur, A. (2010) Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
3. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
4. Singh, R.B. (2005) Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi. Chapter 1, 2 and 3
5. Singh, R. B. (ed.), (2006) Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.
6. Sinha, A. (2001). Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.
7. Stoltman, J.P. et al. (2004) International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht.

## **Sustainability and Development**

1. Sustainability: Definition, Components and Sustainability for Development.
2. The Millennium Development Goals: National Strategies and International Experiences
3. Sustainable Development: Need and examples from different Ecosystems.
4. Inclusive Development: Education, Health; Climate Change: The role of higher education in sustainability; The human right to health; Poverty and disease; Sustainable Livelihood Model; Policies and Global Cooperation for Climate Change
5. Sustainable Development Policies and Programmes: Rio+20; Goal-Based Development; Financing for Sustainable Development; Principles of Good Governance; National Environmental Policy, CDM.

## **Suggested Readings**

1. Agyeman, Julian, Robert D. Bullard and Bob Evans (Eds.) (2003) *Just Sustainabilities: Development in an Unequal World*. London: Earthscan. (Introduction and conclusion.).
2. Ayers, Jessica and David Dodman (2010) "Climate change adaptation and development I: the state of the debate". *Progress in Development Studies* 10 (2): 161-168.
3. Baker, Susan (2006) *Sustainable Development*. Milton Park, Abingdon, Oxon; New York, N.Y.: Routledge. (Chapter 2, "The concept of sustainable development").
4. Brosius, Peter (1997) "Endangered forest, endangered people: Environmentalist representations of indigenous knowledge", *Human Ecology* 25: 47-69.
5. Lohman, Larry (2003) "Re-imagining the population debate". *Corner House Briefing* 28.
6. Martínez-Alier, Joan et al (2010) "Sustainable de-growth: Mapping the context, criticisms and future prospects of an emergent paradigm" *Ecological Economics* 69: 1741-1747.
7. Merchant, Carolyn (Ed.) (1994) *Ecology*. Atlantic Highlands, N.J: Humanities Press. (Introduction, pp 1-25.)
8. Osorio, Leonardo et al (2005) "Debates on sustainable development: towards a holistic view of reality". *Environment, Development and Sustainability* 7: 501-518.
9. Robbins, Paul (2004) *Political Ecology: A Critical Introduction*. Blackwell Publishing.