



CURRICULUM

B.A. Honours in Geography
(w.e.f. 2019-2020)

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: 1ST SEMESTER

Course Title	Course type	(L-T-P)	Credit	Marks for Written Examination	Attendance (4) + Continuous Evaluation(6) =10 Marks	Total Marks
Geomorphology	C-1	5 - 1 - 0	6	40	Attendance (4) Tutorial(6)	50
Cartographic Techniques and Identification of samples of Rocks and Minerals (Practical)	C-2	0 - 0 - 12	6	40	Attendance (4) LNB Evaluation(6)	50
Generic Electives*	GE-1	5 - 1 - 0	6	40	Attendance (4) Continuous Evaluation (6)	50
Environment Studies	AECC-1	4 - 0 - 0	4	40	Attendance (4) Continuous Evaluation (6)	50
	SEMESTER	TOTAL:	22			200

*Not allotted for Geography

B.A HONOURS IN GEOGRAPHY: 2ND SEMESTER

Course Title	Course type	(L-T-P)	Credit	Marks for Written Examination	Attendance (4) + Continuous Evaluation(6) =10 Marks	Total Marks
Human Geography	C-3	5 – 1- 0	6	40	Attendance (4) Seminar(6)	50
Statistical Methods in Geography, Analysis of Geological Maps and Topographical Map Interpretation (Practical)	C-4	0-0- 12	6	40	Attendance (4) LNB Evaluation(6)	50
Generic Electives*	GE-2	5-1-0	6	40	Attendance (4) Continuous Evaluation (6)	50
English / MIL	AECC-2	2 - 0 - 0	2	40	Attendance (4) Continuous Evaluation (6)	50
	SEMESTER	TOTAL:	20			200

*Not allotted for Geography

B.A. HONOURS IN GEOGRAPHY: 3RD SEMESTER

Course Title	Course type	(L-T-P)	Credit	Marks for Written Examination	Attendance (4) + Continuous Evaluation(6)=10 Marks	Total Marks
Climatology	C-5	5 – 1- 0	6	40	Attendance (4) Group Discussion(6)	50
Soil Geography and Biogeography	C-6	5 - 1 - 0	6	40	Attendance (4) Tutorial(6)	50
Statistics, Thematic Mapping & Meteorological Data Interpretation (Practical)	C-7	0-0-12	6	40	Attendance (4) LNB Evaluation(6)	50
Generic Electives	GE-3	5-1-0	6	40	Attendance (4) Continuous Evaluation (6)	50
i) Disaster Management						
Skill Enhancement Course	SEC-1	2-0- 2	2	40	Attendance (4) Project Report (6)	50
i) Environmental Impact Assessment (Practical)						
	SEMESTER	TOTAL:	26			250

B.A HONOURS IN GEOGRAPHY: 4TH SEMESTER

Course Title	Course type	(L-T-P)	Credit	Marks for Written Examination	Attendance (4) + Continuous Evaluation(6) =10 Marks	Total Marks
Geographical Thought	C-8	5 - 1 - 0	6	40	Attendance(4) Seminar(6)	50
Economic and Environmental Geography	C-9	5 - 1 - 0	6	40	Attendance (4) Article Review(6)	50
Remote Sensing and Surveying (Practical)	C-10	0-0-12	6	40	Attendance (4) LNB Evaluation(6)	50
General electives	GE-4	5-1-0	6	40	Attendance (4) Continuous Evaluation (6)	50
ii) Industrial Geography						
Skill Enhancement Course	SEC-2	2-0-2	2	40	Attendance (4) Research Report (6)	50
ii) Research Methodology						
	SEMESTER	TOTAL:	26			250

B.A HONOURS IN GEOGRAPHY: 5TH SEMESTER

Course Title	Course type	(L-T-P)	Credit	Marks for Written Examination	Attendance (4) + Continuous Evaluation(6) =10 Marks	Total Marks
Regional planning and Transport Geography	C-11	5 - 1 - 0	6	40	Attendance (4) Seminar(6)	50
Computer Application in Geography, GIS and GPS (Practical)	C-12	0-0-12	6	40	Attendance (4) LNB Evaluation(6)	50
Any two from Group A (Given below)	DSE-1	5 - 1 - 0	6	40	Attendance (4) Tutorial (6)	50
DSE Group A	DSE-2	5 - 1 - 0	6	40	Attendance (4) Tutorial(6)	50
1) Urban Geography	DSE-1					

2 Population Geography	DSE-1				
3. Cartography	DSE-2				
4. Fluvial Geomorphology	DSE-2				
	SEMESTER	TOTAL:24			200

B.A HONOURS IN GEOGRAPHY: 6TH SEMESTER

Course Title	Course type	(L-T-P)	Credit	Marks for Written Examination	Attendance (4) + Continuous Evaluation(6) =10 Marks	Total Marks
Regional Geography of India	C-13	5 - 1 - 0	6	40	Attendance (4) Group Discussion(6)	50
Field Work (Practical)	C-14	0-0-12	6	40	Attendance (4) Field Report Evaluation(6)	50
Any two from Group B (Given below)	DSE-3	5 - 1 - 0	6	40	Attendance (4) Tutorial (6)	50
DSE Group B	DSE-4	5 - 1 - 0	6	40	Attendance (4) Tutorial(6)	50
1) Regional Planning	DSE-3					
2) Agricultural Geography	DSE-3					
3) Political Geography	DSE-4					
4) Hydrology and Oceanography	DSE-4					
	SEMESTER	TOTAL:	24			200
	GRAND	TOTAL:	142			1300

SYLLABUS

B.A HONOURS IN GEOGRAPHY: 1ST SEMESTER C-1: GEOMORPHOLOGY

Time: 2 Hours

Full Marks: 50

- 1. Basic ideas of Geomorphology:** Nature and scope of Geomorphology (1), Fundamental concepts of Geomorphology.(2)
- 2. The constitution of Earth's interior:** interior of the earth (2), theories of the Isostasy (2), Plate Tectonic (2), Sea floor spreading (1) and Continental Drift (2)
- 3. Concept of Earth's Movement:** Types of Folds and Faults (4), Earth quake (2), Mountain Buildings Theories after Holmes and Kober (2)
- 4. Geomorphic Processes:** i) Weathering, (2) Mass Wasting, (2) Cycle of Erosion (Davis, Penck, King and Hack). (4)
ii). Development of drainage system on Horizontal, Uniclinal, Folded and Faulted structures (4)
- 5. Evolution of Landforms:** Fluvial, Aeolian, Karst, Glacial and Coastal (10)

* Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)

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.

**C-2: CARTOGRAPHIC TECHNIQUES &
IDENTIFICATION OF SAMPLES OF ROCKS AND MINERALS
(PRACTICAL)**

Time: 3 Hours

Full Marks: 50

A. Scales:

(5 Marks)

- i. Concept, types and application (1);
- ii. Graphical Construction of Plain, Diagonal and Vernier Scales (6).

B. Map Projections:

(12 Marks)

- i. Classification, Properties, Method of construction, Uses and Limitations (2)
- ii. Graphical Construction of Polar Zenithal Stereographic, Simple Conical with one Standard Parallel, Polyconic, Bonne's, Cylindrical Equal- Area and Mercator's Projections.

C. Presentation of Data Using Different Cartographic Techniques:

(10 Marks)

- i. Dots and Spheres (representing rural and urban population) (1).
- ii. Proportional Pie Diagrams (showing variation in occupational structure or areal coverage under different crops) (1).
- iii. Choropleth - Equal Interval Method (showing population density) (1).
- iv. Pyramid Diagram (showing Age-sex structure of population) (1).

D. Identification of the samples of the following Rocks and Minerals (Megascopic Study):

(8 Marks)

Granite, Basalt, Dolerite, Laterite, Sandstone, Limestone, Conglomerate, Shale, Slate, Phyllite, Schist, Quartzite, Gneiss, Marble, Quartz, Feldspar, Mica (Biotite & Muscovite), Talc, Graphite, Bauxite, Magnetite, Haematite, Chalcopyrite, Calcite, Galena (6).

E. Viva-voce, Laboratory Note Book Evaluation and Attendance

(5+6+4=15 Marks)

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. Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
7. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi

B.A HONOURS IN GEOGRAPHY: 2ND SEMESTER

C-3: HUMAN GEOGRAPHY

Time: 2 Hours

Full Marks:50

1. Human Geography: Definition and Major Elements in Human Geography (1).

2. Culture and Society:

- i. Cultural Hearth, Cultural Realms, Cultural Regions (1).
- ii. Race (Risley and B.S. Guha's scheme), Religion and Language of World and India (5).
- iii. Social Processes, Social Space, Social Groups, Social Distance, Intra-urban mobility, Social Well-being (6).

3. Population:

- i. Population Growth, Distribution and Age-Sex Composition (3)
- ii. Demographic Transition Theory (6)
- iii. Population-Resource relationship (1)

4. Settlements:

- i. Factors affecting the location of Rural Settlements (1)
- ii. Types of Rural Settlements (1)
- iii. Hierarchy of Settlement as explained by Christaller's Central Place Theory (2)
- iv. Functional Classification of Urban Settlements (1)
- v. Trends and Patterns of World Urbanization with special reference to India (3)

***Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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, ShardaPustakBhawan. Allahabad.
8. Hussain, Majid (2012) Manav Bhugol. Rawat Publications, Jaipur

**C-4: STATISTICS, TOPOGRAPHICAL MAP INTERPRETATION &
ANALYSIS OF GEOLOGICAL MAPS
(PRACTICAL)**

Time: 3 Hours

Full Marks: 50

A. STATISTICAL METHODS IN GEOGRAPHY : (10 marks)

1. Descriptive Statistics:

- i. **Sources of Data:** Primary and Secondary (1)
- ii. **Variables:** Discrete and Continuous; Parametric and Non-parametric (1)
- iii. **Scales of Measurement:** Nominal, Ordinal, Cardinal, Ratio, Interval (1)
- iv. **Tabulation, Classification and Presentation of Data** (1)

2. Applied Statistics:

- i. **Frequency Distribution:** Histogram, Frequency Polygon, Frequency Curve, Ogives(4)
- ii. **Measures of Central Tendencies:** Mean, Median, Mode (3)
- iii. **Partition Values:** Quartiles, Deciles and Percentiles (1)

B. Analysis and interpretation of S.O.I. Maps of Plateau area under the following heads: (15 Marks)

- i. Broad Physiographic Divisions based on break-of- slopes along with Representative Profile(1)
- ii. Serial Profiles; Superimposed, Projected and Composite Profiles (1)
- iii. Identification of Drainage Patterns and Drainage Characteristics (typical sketches)(1)
- iv. Morphometric Techniques: Relative Relief (after Smith), Average Slope (after Wentworth), Drainage Density (Horton), Dissection Index (DovNir), Ruggedness Index(10)
- v. Identification of Settlement Patterns (typical sketches)(1)
- vi. Transect Chart showing the relationship between the Physical and Cultural features (1).

Note: An area of (10 cms.x10 cms.) to be selected from the topographical sheet for doing the Morphometric analysis.

C. Drawing of Geological sections and Interpretation of Geological Map: (10 Marks)

- i. Geological section drawing and interpretation of Horizontal, Uniclinal, Folded with the presence of igneous intrusions and Unconformities. (9)

D. Viva-voce, Laboratory Note Book Evaluation and Attendance (5+6+4=15 Marks)

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. Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
7. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi.

B.A HONOURS IN GEOGRAPHY: 3RD SEMESTER

C-5: CLIMATOLOGY

Time: 2 Hours

Full Marks: 50

1. Composition and structure of the atmosphere (1)
2. Heat budget of the earth; Latitudinal and seasonal variation of Insolation; Distribution of temperature; Inversion of Temperature, Greenhouse gases and global warming (8)
3. Atmospheric pressure and general circulation of winds (3)
4. Monsoons, Jet streams; El-Nino, La-Nina, ENSO; Air masses and Fronts (10)
5. Temperate and Tropical cyclones (2)
6. Humidity, Condensation and Precipitation (6)
7. Koppen's and Thornthwaite's scheme of classification; Climate change (5).

*** Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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.

C-6: SOIL GEOGRAPHY AND BIOGEOGRAPHY

Time: 2 Hours

Full Marks: 50

A. SOIL GEOGRAPHY :

- i. Factors affecting soil formation (active and passive) (1)
- ii. Processes of soil formation (general and special processes) (1)
- iii. Development of an idealized soil profile, development of soil profiles under different climatic conditions: Laterite, Chernozem and Podzol (4)
- iv. Physical and Chemical properties of soil (Texture, Structure and Soil P^H) (3)
- v. Genetic Classification of Soil(Zonal, Azonal and Intra-Zonal)

B. BIO-GEOGRAPHY :

- i. **Some Concepts:** Biosphere, Ecology, Population, Habitat, Species Structure, Ecological Niche, Noosphere, Succession, Climax (3)
- ii. **Ecosystem:** Components, Trophic structure, Productivity and Energy flow in Ecosystem; Types of Food Chain, Food Web; Ecological Pyramids (4)
- iii. **Bio-geo-chemical cycles:** Nitrogen, Oxygen and Carbon (3)
- iv. **Concept of Biome, Ecotone and Community; Study of different Biotic Regions of the world:** Equatorial Evergreen Rain Forests, Tropical Savannah, Steppes, Taiga and Tundra (6)
- v. **Concept of Biodiversity and its importance** (1)

*** Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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 DamodarUpattakarMrittikaKhayerRuparekha, (Bengali), Sandip, Kolkata.
8. De, N. K. and Sarkar, M. K. 1994: MrittikaBhu-vidya, (Bengali) PaschimBangaRajyaPustakParshad, 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.

C- 7: STATISTICAL METHODS IN GEOGRAPHY & METEOROLOGICAL DATA **INTERPRETATION** **(PRACTICAL)**

Time: 3 Hours

Full Marks: 50

A. STATISTICAL METHODS IN GEOGRAPHY :

(15 marks)

Applied Statistics:

- i. **Measures of Dispersion:** Range, Mean Deviation, Quartile Deviation, Standard Deviation, Co-efficient of variation and Variance (3)

- ii. **Simple Bi-variate Analysis:** Fitting of Regression Trend Line by Least Square Method; Residual Mapping (4)
- iii. **Rank Co-relation** (Spearman's Method) and **Product Moment Co-relation** (Pearson's Method)(2)
- iv. **Measures of Inequalities:** Lorenz Curve and Gini's Co-efficient (1)

B. TECHNIQUES OF THEMATIC MAPPING USING:

(10 Marks)

- i. **Point Symbol:** a comparative study of employment structure of the metropolitan cities of India/ West Bengal represented by Nelson's Dominant and Distinctive Functions (1).
- ii. **Line Symbol:** Road accessibility represented by Shortest Path Matrix (Shimbel Index)(2)
- iii. **Area Symbol:** Zones of concentration represented by Location Quotient and Z-Score (single criterion and two or three criteria) (3).

C. METEOROLOGICAL DATA INTERPRETATION:

(10 Marks)

1. Representation of climatic data:

- i. Climograph (After Taylor)(1)
- ii. Hythergraph (After Taylor)(1)
- iii. Ombrothermic Chart (1)

2. Interpretation of Indian Daily Weather Report: Pre-monsoon, Monsoon and Post-monsoon (6)

C. Viva-voce, Laboratory Note Book Evaluation and Attendance

(5+6+4=15 Marks)

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.

GE-3: DISASTER MANAGEMENT

Time: 3 Hours

Full Marks: 50

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

*** Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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

SEC-1: ENVIRONMENTAL IMPACT ASSESSMENT
(PRACTICAL)

Time: 1 Hour
Theoretical :

Full Marks: 50

Marks- 15

1. Concept of disaster & hazard, effect of disaster on environment
2. Concept, stages, principles & importance of Environmental Impact Assessment(EIA)

Practical:

Marks-20

3. The Project Report based on any one case studies among the following – Flood/ Drought/ Cyclone/ Earthquake/ Landslides/ Human Induced Disasters: Fire Hazards, Chemical, Industrial accidents

Viva-voce (5), Project Report Internal (6) and External Evaluation (20) and Attendance (4)

Guidelines for the preparation of the Field Report:

- The Project Report is to be conducted after the completion of the 2nd semester examination.
- Preparation of Project Report is compulsory.
- Project Report included (Title, Introduction, Objectives, Methods, Database, Timeframe, Result and Discussion, Findings , Conclusion and Reference)
- The Report must contain a certificate from the supervisor(s) that it is a bonafide work prepared by the candidate concerned.
- The Field Report should be of A4 size and hard bound.
- The Report must not exceed 30 pages containing maps and diagrams, tables and picture.
- A single page may contain several diagrams/graphs/maps as required for proper presentation of the findings.
- Separate sheets for photographs can be used.
- Tables may be incorporated within the writing portions as per relevance and requirement.
- The Report should be computer written using MSWord, Times New Roman as the Font type with font size: 12 and doubly spaced singly printed.

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*, Cengage 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: 4TH SEMESTER

C-8: GEOGRAPHICAL THOUGHT

Time: 2 Hours

Full Marks: 50

1. **Pre-Modern:** Early Origins of Geographical Thinking with reference to the Classical and Medieval Philosophies (6)
2. **Modern:** Evolution of Geographical Thinking and Disciplinary Trends in Germany, France, Britain, United States of America (7)
3. **Debates:** Environmental Determinism vs Possibilism, Positivism vs Humanism, Systematic vs Regional, Ideographic vs Nomothetic. (8)
4. **Trends:** Quantitative Revolution and its Impact, Systems Approach, Radicalism, (8)
5. Man- environment relationship (2)

*** Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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. Hartshorn 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.

C-9: ECONOMIC AND ENVIRONMENTAL GEOGRAPHY:

Time: 2 Hours

Full Marks: 50

A. ECONOMIC GEOGRAPHY:

- i. **Economic Activities:** Concept and classification, different sectors of economy (2)
- ii. **Factors affecting location of economic activity** with special reference to agriculture (Von Thunen's theory), Industrial location (Weber's theory) Profit-maximization theory (A.Losch) (4).
- iii. **Some concepts:** Special Economic Zone, Exclusive Economic Zone, Technological Parks, Industrial regions in India.

B. ENVIRONMENTAL GEOGRAPHY:

- i. **Concept and components of Environment:** Physical Environment (geology, soil, relief, hydrology, flora and fauna) and Socio-cultural Environment (food and nutrition, shelter, health, education, social stability and leisure) (2)
- ii. **Environmental Geography:** Definition and its relevance (1)
- iii. **Man-Environment Relationship:** Adaptation of humans in different Biomes; Environmental Problems in Tropical, Temperate and Polar Ecosystems (5)
- iv. **Environmental programmes in the World:** Kyoto protocol, Rio-Summit, Montreal protocol, **Environmental programmes in India:** Swachh Bharat Mission, Mission Nirmal Bangla, and Ganga Action Plan

*** Marks for Written Examination (40), Attendance(4) and Continuous Evaluation**

(6) 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*
10. Chandna R. C., 2002: *Environmental Geography*, Kalyani, Ludhiana.
11. Cunningham W. P. and Cunningham M. A., 2004: *Principals of Environmental Science: Inquiry and Applications*, Tata Macgraw Hill, New Delhi.
12. Goudie A., 2001: *The Nature of the Environment*, Blackwell, Oxford.
13. Singh, R.B. (Eds.) (2009) *Biogeography and Biodiversity*. Rawat Publication, Jaipur
14. Miller G. T., 2004: *Environmental Science: Working with the Earth*, Thomson Brooks Cole, Singapore.

15. MoEF, 2006: *National Environmental Policy-2006*, Ministry of Environment and Forests, Government of India.
16. 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
17. Odum, E. P. et al, 2005: *Fundamentals of Ecology*, Cengage Learning India.
18. Singh S., 1997: *Environmental Geography*, PrayagPustakBhawan. Allahabad.
19. UNEP, 2007: *Global Environment Outlook: GEO4: Environment For Development*, United Nations Environment Programme.
20. 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
21. Singh, R.B. (1998) *Ecological Techniques and Approaches to Vulnerable Environment*, New Delhi, Oxford & IBH Pub.

C-10: REMOTE SENSING AND SURVEYING (PRACTICAL)

Time: 3 Hours

Full Marks: 50

A. REMOTE SENSING:

5+10=15 marks

- i. Definition, scope, development and types of remote sensing; Remote sensing platforms, Electro-magnetic radiation: characteristics, interaction with matter, Spectral regions and bands(4)
- ii. **Aerial photograph:** types, scale and features identification by Mirror Stereoscope(8)
- iii. **Satellite imagery:** Orbital characteristics of remote sensing satellites; Satellites: Landsat, SPOT and IRS, Characteristics of sensors: MSS, LISS and OLI. , visual interpretation of satellite imageries (12)

B. SURVEYING (9):

15+5=20 marks

- i. Concept of Surveying (1)
- ii. Prismatic Compass Survey (open and closed traverse; measurement of included angles) (4)
- iii. Preparation of a contour plan along three radiating lines by Dumpy level with at least one change point adopting either Collimation or Rise-Fall method (4)

C. Viva-voce, Laboratory Note Book Evaluation and Attendance

(5+6+4=15 Marks)

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. 2nd Ed.
6. Hay, Iain (ed.) 2005. *Qualitative Research Methods in Human Geography*. Oxford University Press, Melbourne. 2nd Ed.
7. Kitchen, Rob and Fuller, Duncan 2005. *The Academic's Guide to Publishing*. VistaarPubls. (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. 2nd 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

GE-4: INDUSTRIAL GEOGRAPHY

Time 2 hours

Full Marks 50

1. **Nature and Scope** of Industrial Geography
2. **Types, Geographical Characteristics and Location of Industries:** Types of Industries: Coal and Iron based industries, Rural based Industries, Footloose Industry.
3. **Mega Industrial Complexes:** National Capital Region, Mumbai-Pune Industrial Region, Chhota Nagpur Industrial Region
4. **Impact of Industrialisation in India:** Environmental; Social and Economic

***Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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*, RawatPubls., 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

SEC- 2: RESEARCH METHODOLOGY

(Practical)

Time: 2 Hour

Full Marks: 50

A. RESEARCH METHODOLOGY (15 Marks for Theory Questions)

- i. **Research:** Definition, Concept, Types & Methods. (4)
- ii. **Structure of a Research Report:** Abstract, Introduction, Identification of research problems, Literature Review, Objectives, Rationale of the study, Hypothesis, Selection of Sample Size, Data collection (Methodology), Result and Discussion, Major Findings, Conclusion, Reference and Bibliography(APA 6th Edition) . (15)

B. PREPARATION OF RESEARCH REPORT (10 Marks for Theory Questions)

- i. **Project Report on Research Methodology:**
 - a. Framing of research objectives on any particular research problem(15)
 - b. Data Collection,
 - c. Literature Review,
 - d. Questionnaire framing
 - e. Reference and Bibliography

C) Viva-voce (5), Preparation of Project Report -External Evaluation (10) Preparation of Project Report -Internal Evaluation (6) and Attendance(4)

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.

B.A HONOURS IN GEOGRAPHY: 5TH SEMESTER

C-11: REGIONAL PLANNING AND TRANSPORT GEOGRAPHY

Time: 2 Hours

Full Marks:50

A. REGIONAL PLANNING:

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

B. TRANSPORT GEOGRAPHY

- i. **Introduction of Transportation:** Nature and Scope; Historical Development of Transport Geography; Models of Transportation (Taaffe, Morrill and Gould; Vance; Rimmer); Importance of Transportation (4)
- ii. **Structural Analysis of Transport Network:** 1. Alpha Index, 2. Beta Index, 3. Gamma Index 4. Cyclomatic Number 5. Aggregate Transportation Score (ATS) (3)
- iii. **Transport Problems:** Problems of Urban and Rural Transport (1)

* Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)

Suggested Readings:

- i. Blij H. J. De, 1971: *Geography: Regions and Concepts*, John Wiley and Sons.
- ii. Claval P., 1998: *An Introduction to Regional Geography*, Blackwell Publishers, Oxford and Massachusetts.
- iii. Friedmann J. and Alonso W. (1975): *Regional Policy - Readings in Theory and Applications*, MIT Press, Massachusetts.
- iv. Gore C. G., 1984: *Regions in Question: Space, Development Theory and Regional Policy*, Methuen, London.
- v. 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.
- vi. Haynes J., 2008: *Development Studies*, Polity Short Introduction Series.
- vii. Johnson E. A. J., 1970: *The Organization of Space in Developing Countries*, MIT Press, Massachusetts.
- viii. Peet R., 1999: *Theories of Development*, The Guilford Press, New York.
- ix. UNDP 2001-04: *Human Development Report*, Oxford University Press.
- x. World Bank 2001-05: *World Development Report*, Oxford University Press, New York
- xi. Adams, J., (1981) 'Transport Planning, Vision and practice', Routledge & Kegan Paul Ltd., London, UK.

- xii. Arora, N.L. (2003). A Text Book of Transportation Engineering. Delhi: New Indian Publishing House.
- xiii. 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*.
- xiv. Ramanathan R. (2004). Indian transport towards the new millennium. New Delhi: Concept publishing company.
- xv. Ramanujam, K.N. (1993). *Rural transportation in India*. New Delhi: Mittal Publication.
- xvi. Rodrigue, J.P. et.al. 2nd ed. (2006). *The Geography of Transport System*. USA (Oxon): Routledge.
- xvii. Taaffe, E.J., Gauthier, H.L. (1973). *Geography of Transportation*, Prentice Hall
- xviii. Saxena, H.M. (2010). *Transport Geography*. New Delhi: Rawat Publication

C-12: COMPUTER APPLICATION IN GEOGRAPHY, GIS AND GPS (PRACTICAL)

Time: 2 Hours

Full Marks: 50

A. COMPUTER APPLICATION IN GEOGRAPHY: (10 Marks)

- i. Demographic data, Weather and Climatic data and Socio-economic data processing and Thematic Diagrams using Basic Calculations and interpretation (using Bar, Pie and Line Graph) by MS–Excel (13)

B. GEOGRAPHICAL INFORMATION SYSTEM: (15 Marks)

- i) **Definition and evolution of GIS:** Components of GIS; Geographical data: types and characteristics; Applications of GIS(4)
- ii) **Digital representation of geographical data:** database management systems, raster and vector models. (4)
- iii) **GIS Data Analysis:** Input; Geo-Referencing, Editing, Output and Query and Overlays by QGIS Software (8)
- iv) **Application of Remote Sensing:** Land Use Land Cover by QGIS Software (8)

C. GLOBAL POSITIONING SYSTEM (GPS): (10 Marks)

- i. **Global Positioning System (GPS):** principles, uses and applications (Only recording of Points). (4)

D. Viva-voce, Laboratory Note Book Evaluation and Attendance (5+6+4=15 Marks)

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 International 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.

DSE-1: Group A 1: URBAN GEOGRAPHY

Time: 2 Hours

Full Marks: 50

1. **Urban geography:** Introduction, nature and scope
2. **Process of Urbanisation:** Patterns of Urbanisation in the world with special reference to India
3. **Functional classification of town and cities and Theories of Urban Morphology:** Burgess's Theory; Hoyt's theory; Harris and Ullman's theory.
4. **Urban Issues:** problems of housing, slums, civic amenities
5. **Some Concepts:** Primate City, CBD, Rank Size Rule, Metropolis, Megalopolis, Ecumenopolis, Metropolitan Regions, Satellite Town

*** Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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

DSE-1: Group A 2: POPULATION GEOGRAPHY

Time: 2 Hours

Full Marks: 50

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 (in India).
3. **Demographic Attributes:** Fertility, Mortality and Migration: measures and determinants; Concepts of ageing: Inter-relationship between population ageing, 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: Ravenstein and Everetts Lee.

*** Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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*, 3rd 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.

DSE-2: Group A 3: CARTOGRAPHY

Time: 2 Hours

Full Marks: 50

Cartography:

1. History, Nature and Scope of Cartography:
2. **Map Projections:** Basic terminologies, classification; scale factor, choice of map projection; Principle, Properties, limitation, mathematical Construction and drawing of graticules on the following Projections:

- i. Zenithal Non-Perspective:**

- a.** Polar Zenithal Equal Area

- ii. Cylindrical:**

- a.** UTM

- iii. Conical**

- a.** Simple conical projection with two standard Parallels

- b.** Conical Equal Area Projection with one standard Parallel

- 3. Principles and Method of the following Surveying: (No need of Field work)**

- a.** Method of Triangulation for Determination of height and distance by Transit Theodolite (same vertical plane)

- 4. Choropleth Map:** Basic Concept, Classification and Use of Choropleth Map. Calculation and determination of accuracy level of Equal Step and Nested Mean Method of Choropleth Map.

*** Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

Suggested Readings:

1. Kanetkar, T.P. and Kulkarni, S.V. 1972: Surveying and Levelling, Pune VidyarthiGrihaPrakashan, Pune.
2. Misra, R.P. and Ramesh, A. 1986: Fundamentals of Cartography, McMillan, New Delhi
3. Monkhouse, F.J. and Wilkinson, H.R. 1980: Maps and Diagrams, B.I. Publications Private Limited, New Delhi.
4. Singh, R.L. and Singh, R.P.B. 1992: Elements of practical Geography, Kalyani Publisher, New Delhi.
5. John and keats: Cartographic design and production, II edition 1989, John wiley, New York.
6. Monkhouse F.J.K and Maps and Diagrams Wilkinson H.R. Mathuen and Co, Ltd., London, 1952.
7. Raisz E General Cartography, 1948. Tata-MC-Graw Hill, New York.
8. Robinson. H. Elements of Cartography, John Wiley, London. 1963.
9. Singh.R.L. Elements of Practical Geography Kalyani Publishers, New Delhi, 1979.
10. Roy, P. An Analytical study of Map Projections, Pan Publishing Com. Kolkata, 1988
11. Baskin, N.N. Surveying and Levelling, Tata McGraw Hill, New Delhi, 1994

DSE-2: Group A 4: FLUVIAL GEOMORPHOLOGY

Time: 2 Hours

Full Marks: 50

1. **Scope and Content of Fluvial Geomorphology;** factors controlling flow velocity, measurement of velocity and water discharge.
2. **Fluvial processes:** erosional processes and landform development: valley widening, river terraces. Depositional processes and landform 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 Morphometry:** Definition , Function and Characteristics of drainage basin & morphometric units (Areal, Linear, and Relief Units)

* Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)

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*. 3rd 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.

B.A HONOURS IN GEOGRAPHY: 6TH SEMESTER

C-13: REGIONAL GEOGRAPHY OF INDIA

Time: 2 Hours

Full Marks: 50

1. **Physical:** Structure, relief, soil, vegetation, climate (characteristics and classification) (15)
2. **Economic:** i. Agricultural Regionalization (2)
ii. Industrial Regionalization (2)
3. **Social:** Social regions of India (regions of attraction & isolation) (2)
4. **Political:** Geo-political importance of India (2)
5. **Geographical account of some type regions of India:** The Ganga Plain (Upper, Middle and Lower), Marusthali and Chotonagpur Region (12)

* Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)

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*, RawatPubls., 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

C- 14: FIELD WORK
(PRACTICAL)

Time: 1 Hour

Full Marks: 50

A. Preparation of a Field Report: (30 Marks)

Field Report is to be prepared for an area (C.D. blocks/ P.S/ mouza/ G.P./municipality/drainage basin) on the basis of any particular problem of the selected area of study. Questionnaire/schedule to be prepared for collection of primary data, data collected from the field are to be analysed /processed and represented by suitable methods. Report should contain adequate number of tables, diagrams and maps, photo, complying of anything associated with field report only. Field report is to be authenticated by the concerned supervisor(s) .Participation and preparation of field work is compulsory. The report must follow the basics structure of report writing.

Guidelines for the preparation of the Field Report:

- The Field Work is to be conducted after the completion of the 5th semester examination.
- Participation in the field work is compulsory.
- It may be carried out in a rural or in an urban area or in a drainage basin within the country.
- The Report must contain a certificate from the supervisor(s) that it is a bonafide work prepared by the candidate concerned.
- The Field Report should be of A4 size and hard bound.
- The Report should not exceed 100 pages containing maps and diagrams and must be typed by computer.
- A single page may contain several diagrams/graphs/maps as required for proper presentation of the findings.
- Separate sheets for photographs can be used.
- Tables may be incorporated within the writing portions as per relevance and requirement.
- The Report should be computer written (i.e writing portion only); using MSWord, Times New Roman as the Font type with font size: 12 and doubly spaced singly printed.
- Field Itinerary, Tabulation sheet, all calculations in tabular form and References should be presented in the appendices.
 - Report must follow the basic structure of Research Report Writing

B) Field Viva-Voce: (10Marks)

C) Continuous Evaluation Internal (6) and Attendance (4) (10 Marks)

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.
12. Wolcott, H. 1995. *The Art of Fieldwork*. Alta Mira Press, Walnut Creek, CA.

DSE-3: Group B 1: REGIONAL PLANNING

Time: 2 Hours

Full Marks: 50

A. 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.
4. **Metropolis and Metropolitan Concept:** Definition of Metropolis; Structural and Functional Characteristics of Metropolis; Metropolitan Area and Metropolitan Region; Urban Primacy; Rural-Urban Continuum; Some Concepts like: Megacity, Megalopolis, Conurbation, Ecumenopolis.
5. **Theories of Economic Growth:** Myrdal's Cumulative Causation, Rostow's Stages of Economic Growth, Perroux's Growth Pole theory.
6. **Rural Development Programmes.**

* Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)

Suggested Readings:

1. Blij H. J. De, 1971: *Geography: Regions and Concepts*, John Wiley and Sons.
2. Claval P., 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

DSE-3: Group B 2: AGRICULTURAL GEOGRAPHY

Time: 2 Hours

Full Marks: 50

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 Thunen, modification and relevance).
5. **Agricultural Revolutions in India:** Green, White, Blue, Pink

*** Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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.

DSE-4: Group B 3: POLITICAL GEOGRAPHY

Time: 2 Hours

Full Marks: 50

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. **Politics of Displacement:** Issues of relief, compensation and rehabilitation in India.

*** Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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 MCernea (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

DSE-4: Group B 4: HYDROLOGY AND OCEANOGRAPHY

Time: 2 Hours

Full Marks: 50

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.
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 (Atlantic & Indian) and Oceanic Movements:** Currents and Tides (Atlantic and Indian Ocean)
4. **Coral Reefs and Marine Deposits and Ocean Resources:** Types and Theories of Origin; Biotic, Mineral.

* Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)

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

	CORE COURSE (12)	Ability Enhancement Compulsory Course (AECC) (2)	Skill Enhancement Course (SEC) (2)	Discipline Specific Elective DSE (4)	Generic Elective GE (2)
I	English/MIL-1(English/MIL	Communication) / Environmental Science			
	Physical Geography				
	DSC- 2A				
II	English/MIL-1Environmental	Science/ (English/MIL Communication)			
	Human Geography				
	DSC- 2B				
III	English/MIL-2		SEC-1 Regional Planning and Development		
	General Cartography (Practical)				
	DSC- 2C				
IV	English/MIL-2		SEC-2 Remote Sensing and GPS based Project Report		
	Environmental Geography				
	DSC- 2D				
V			SEC-3 GIS based Project Report (Practical)	DSE-2A1 Geography of India or DSE-2A2 Economic Geography	GE-1
				DSE-2A	
VI			SEC-4 Field Techniques and Survey based Project Report (Practical)	DSE-2B1 Disaster Management or DSE-2B2 Geography of Tourism	GE-2
DSE-2B					

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 PROGRAMME IN GEOGRAPHY: 1ST SEMESTER

DSC 2A: Physical Geography

Time: 2 Hours

Full Marks: 50

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.

***Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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.

B.A PROGRAMME IN GEOGRAPHY: 2nd SEMESTER

DSC 2B: Human Geography

Time: 2 Hours

Full Marks: 50

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; Urbanization in India.

***Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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

B.A PROGRAMME IN GEOGRAPHY: 3rd SEMESTER

DSC 2C: General Cartography (Practical)

Time: 2 Hours

Full Marks: 50

1. Maps – Types, Elements and Uses
2. Map Scale – Types (Linear) and Application, Conversion of Scale (R.F. to Statement and Statement to R.F.)
3. Map Projections – Criteria for Choice of Projections; Properties of: Zenithal Gnomonic Polar Case, Cylindrical Equal Area, Conical Projection with One Standard Parallel.
4. Representation of Data – Bar, Choropleth, Proportional Divided Circle.
5. Laboratory Note book

***Marks for Practical Examination (40), Attendance (4) and Continuous Evaluation (6)**

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.

B.A PROGRAMME IN GEOGRAPHY: 3rd SEMESTER

SEC 1: Regional Planning and Development

Time: 2 Hours

Full Marks: 50

1. Concept, Need and Types of regional Planning.
2. Characteristics of Planning Regions.
3. Regionalization of India for Planning (Physical Regions of India, Agricultural Regions of India).

***Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

Suggested Readings

1. Blij H. J. De, 1971: *Geography: Regions and Concepts*, John Wiley and Sons.
2. Claval P., 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.

B.A PROGRAMME IN GEOGRAPHY: 4th SEMESTER

DSC 2D: Environmental Geography

Time: 2 Hours

Full Marks: 50

1. Environmental Geography: Concepts and Approaches; Ecosystem – Concept and Structure; Ecosystem Functions.
2. Human-Environment Relationship in Equatorial, Desert, Mountain and Coastal Regions.
3. Environmental Problems and Management: Air Pollution; Biodiversity Loss.
4. Concept of Environmental Impact Assessment (EIA)

***Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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

B.A PROGRAMME IN GEOGRAPHY: 4th SEMESTER

SEC 2: Remote Sensing and GIS based Project Report (Practical)

Time: 2 Hours

Full Marks: 50

1. i. Remote Sensing: Definition, Development, Platforms and Types.
ii. Aerial Photography: Principles, Types, Physical and Cultural features identification (5+10=15 marks)
2. i. Geographical Information System (GIS): Definition and Components.
ii. GIS Data Structures: Types (spatial and Non-spatial), Raster and Vector Data Structure.(10 marks)
3. Global Positioning System (GPS) – Principles and Uses (Recording of points) (10 marks)

***. Viva-voce, Laboratory Note Book Evaluation and Attendance (5+6+4=15 Marks)**

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.

B.A PROGRAMME IN GEOGRAPHY: 5th SEMESTER

SEC 3: Instruments based Project Report (Practical)

Time: 2 Hours

Full Marks: 50

1. Weather instruments: Maximum and minimum Thermometer, Hygrometer and Raingauge (10)
2. Rotameter, Pantagraph. (10)
3. Instruments: Prismatic Compass (Parallel Meridian Method) and Plane Table (Radiation Method) (15)

***. Viva-voce, Laboratory Note Book Evaluation and Attendance (5+6+4=15 Marks)**

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) SudurSamvedanevamBhogolikSuchanaPranali, 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 PROGRAMME IN GEOGRAPHY: 5th SEMESTER
DSE 2A1: Geography of India

Time: 2 Hours

Full Marks: 50

1. Physical Setting :Location, Structure and Relief, Drainage, Climate.
2. Population –Growth since 1901, Population Distribution,
2 Settlement System: Rural Settlement Types and Patterns, Urban Morphology.
- 3 Resource Base: Power (coal and hydroelectricity), Minerals (iron ore and bauxite).
- 4 Economy: Agriculture (Rice, Wheat, Sugarcane, Cotton); Industries (Cotton Textile, Iron-Steel, Automobile).
- 5 Population -Growth since 1901, Population Distribution.

***Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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 LalAgarwala.
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 Generaland Regional Geography*, Methuen.
9. Rana, Tejbir Singh, 2015, Diversity of India, R.K. Books, Delhi.

B.A PROGRAMME IN GEOGRAPHY: 5th SEMESTER

DSE 2A2: Economic Geography

Time: 2 Hours

Full Marks: 50

1. Definition, Approaches and Fundamental Concepts of Economic Geography;
2. Locational Theories – Agriculture (Von Thunen)
3. Primary Activities – Intensive Subsistence Farming, Commercial Dairy Farming, and Mining (coal).
4. Secondary Activities – Cotton Textile Industry.
5. Tertiary and Quaternary Activities – Modes of Transportation.

***Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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.*

B.A PROGRAMME IN GEOGRAPHY: 5th SEMESTER

GE-1: Disaster Risk Reduction

Time: 2 Hours

Full Marks: 50

1. Disaster; Hazards, Risk, Vulnerability and Disasters: Definition and Concepts.
2. Disasters in India: (a) Causes, Impact, Distribution: Flood and Drought.
3. Disasters in India: (b) Causes, Impact, Distribution: Earthquake and Cyclone.
4. Human induced disasters: Causes, Impact, Distribution.
5. Disaster Risk Reduction: Mitigation and Preparedness.

***Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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.
- Stoltman, J.P. et al. (2004) International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht

B.A PROGRAMME IN GEOGRAPHY: 6th SEMESTER

SEC 4: Field Techniques and Survey based Project Report (Practical)

Time: 2 Hours

Full Marks: 50

1. Defining the Field and Identifying the Case Study – Rural / Urban / Physical / Human / Environmental.
2. Designing the Field Report – Aims and Objectives, Methodology, Analysis, Interpretation and Writing the Report. (Field Report Page Limit not more 50 pages and typed by Computer)
- *. **Viva-voce, Laboratory Note Book Evaluation and Attendance (5+6+4=15 Marks)**

Practical Record

1. Each student will prepare a 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 **20 pages** 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 Pubs. Co., New Delhi.
5. Mukherjee, Neela 2002. *Participatory Learning and Action: with 100 Field Methods*. Concept Pubs. 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.

B.A PROGRAMME IN GEOGRAPHY: 6th SEMESTER

DSE 2B1: Disaster Management

Time: 2 Hours

Full Marks: 50

1. Hazards, Risk, Vulnerability and Disasters: Definition and Concepts.
2. Disasters in India: (a) Causes, Impact, Distribution: Flood, Landslide, Drought.
3. Disasters in India: (b) Causes, Impact, Distribution: Earthquake, Tsunami and Cyclone.
4. Response and Mitigation to Disasters: Mitigation and Preparedness.

***Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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.

B.A PROGRAMME IN GEOGRAPHY: 5th SEMESTER

DSE 2B2: Geography of Tourism:

Time: 2 Hours

Full Marks: 50

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

***Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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

B.A PROGRAMME IN GEOGRAPHY: 6TH SEMESTER

GE2: Sustainability and Development

Time: 2 Hours

Full Marks: 50

1. Sustainability: Definition, Components and Sustainability for Development.
2. Sustainable Development: Need and examples from different Ecosystems.
3. Inclusive Development: Education, Health; Climate Change: The role of higher education in sustainability; The human right to health; Poverty and disease;
4. Sustainable Development Policies and Programmes: Rio+20; National Environmental Policy, CDM.

***Marks for Written Examination (40), Attendance (4) and Continuous Evaluation (6)**

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.