CURRICULUM

B.A. Honours in Geography

(w.e.f. 2017-2018)

UNDER CHOICE BASED CREDIT SYSTEM

COOCH BEHAR PANCHANAN 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 PanchananBarma 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) Laboratory Note Book 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) Laboratory Note Book 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) Laboratory Note Book evaluation(6)	50
Generic Electives i) Disaster Management	GE-3	5-1-0	6	40	Attendance (4) Continuous Evaluation (6)	50
Skill Enhancement Course i) Environment Impact Assessment (Practical)	SEC-1	2-0- 2	2	40	Attendance (4) Project Report (6)	50
	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	Tutorial (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) Laboratory Note Book evaluation(6)	50
Generic Electives	GE-2	5-1-0	6	40		
ii) Industrial Geography					Attendance (4) Continuous Evaluation (6)	
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) Seminar(6)	50
DSE Group A	DSE-2	5 - 1 - 0	6	40	Attendance (4) Tutorial(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: 6TH SEMESTER

Course Title	**Course type**	**(L-T-P)**	**Credit**	**Marks for Written Examination**	**Attendance (4) + Continuous Evaluation(6)** =10 Marks	**Total Marks**
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) Seminar(6)	50
DSE Group B	DSE-4	5 - 1 - 0	6	40	Attendance (4) Tutorial(6)	50
f) Regional Planning						
g) Tribal Studies						
h) Agricultural Geography						
i) Social Geography						
j) Political Geography						
k) Hydrology and Oceanography						
	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 ofGeomorphology.(2)

2. **The constitution of Earth's interior**: interior of the earth (2), theories of the Isostasy (2), PlateTectonic (2), Sea floor spreading (1) and Continental Drift (2)

3. **Concept of Earth's Movement:** Types of Folds and Faults (4), Earth quake (2), MountainBuildings Theories after Holmes and Kober (2)

4. **Geomorphic Processes:** i) Weathering, (2) Mass Wasting, (2) Cycle of Erosion (Davis, Penck, Kingand Hack). (4)
   ii). Development of drainage system on Horizontal, Uniclinal, Folded and Faulted structures (4)

4. **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: **(10Marks)**

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) ManavBhugol, Rastogi Publication, Meerut.
7. Maurya, S.D. (2012) ManavBhugol, ShardaPustakBhawan. Allahabad.
8. Hussain, Majid (2012) ManavBhugol. Rawat Publications, Jaipur

C-4: STATISTICAL METHODS IN GEOGRAPHY, 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. Different types of **Sampling** (2)
v. **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. Longitudinal and Cross Profiles of river (2)
iv. Identification of Drainage Patterns and Drainage Characteristics (typical sketches)(1)
v. Morphometric Techniques: Relative Relief (after Smith), Average Slope (after Wentworth), Drainage Density (Horton), Dissection Index (DovNir), Ruggedness Index, Homestead Frequency, Road Density (10)
vi. Identification of Settlement Patterns (typical sketches)(1)
vii. Transect Chart showing the relationship between the Physical and Cultural features (1).

Note: An area of (10cms.X10 cms.) to be selected from the topographical sheet for doing the Morphometricanalysis.

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

i. Geological section drawing and interpretation of Horizontal, Uniclinal, Folded, Faulted 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 Delh.

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, Green house 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 toMeteorology*, 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 ofFood 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; ResidualMapping (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 Mc Cullagh 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.

GE3: 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, NDMA and NIDM;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 Oppurtunities", 2007. Publisher- I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India

SEC-1: ENVIRONMENT IMPACT ASSESSMENT (PRACTICAL)

Time: 3 Hours **Full Marks: 50**

1. The Project Report based on any one case studies among following -

- Flood
- Drought
- Cyclone
- Earthquake
- Landslides
- Human Induced Disasters: Fire Hazards, Chemical, Industrial accidents

2. Viva-voce (10), Project Report Internal (6) and External Evaluation(30) and Attendance (4)

Guidelines for the preparation of the Project Report:

- The Project Report is to be conducted after the completion of the 2nd semester examination.
- Preparation of Project Report is compulsory.
- Project Report will include (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. Cunninghum W. P. and Cunninghum M. A., 2004: *Principals of EnvironmentalScience: Inquiryand 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 andForests, 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,*PrayagPustakBhawan. 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 MedievalPhilosophies (6)
2. **Modern:** Evolution of Geographical Thinking and Disciplinary Trends in Germany, France, Britain,United States of America (7)
3. **Debates:** Environmental Determinism and Possibilism, Systematic and Regional, Ideographic and Nomeothetic; Paradigms in Geography (8)
4. **Trends:** Quantitative Revolution and its Impact, Behaviouralism, Systems Approach, Radicalism, Recent Trends (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 Thuijis 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.

C-9: ECONOMIC AND ENVIRONMENTAL GEOGRAPHY:

Time: 2 Hours **Full Marks: =50**

A. ECONOMIC GEOGRAPHY:

i. **Introduction:** Concept of economic activities and different sectors of economy (2)
ii. **Factors Affecting location of Economic Activity** with special reference to Agriculture (VonThunen's theory), Industrial location (Weber's theory), Profit maximization (A. Losch) (4)
iii. **Primary Activities:** Subsistence and Commercial agriculture, forestry, fishing and mining (5)
iv. **Secondary Activities:** Manufacturing (Cotton Textile, Iron and Steel), Concept of Manufacturing Regions, Special Economic Zones and Technology Parks (5)
v. **Tertiary Activities:** Transport, Trade and Services (3)

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. **Deforestation** and its impact of Environment.(2)
v. **Environmental Programmes and Policies:** Global, National and Local levels (3)

* **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 ContemporaryIntroduction*, 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 Regionsand 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. Cunninghum W. P. and Cunninghum M. A., 2004: *Principals of Environmental Science: Inquiryand 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,*Ceneage 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: **(20 Marks)**

i. Definition, scope, development and types; Electro-magnetic radiation: characteristics, interaction with matter; Remote sensing regions and bands; Spectral signature. (4)
ii. **Aerial photograph:** types, scale, resolution and geometry. (4)
iii. **Satellite imagery:** Orbital characteristics of remote sensing satellites; Satellites: Landsat, SPOT and IRS, Characteristics of sensors: MSS, LISS and OLI. (8)
iv. **Application of Remote Sensing**: Land Use Land Cover by QGIS Software (8)

B. SURVEYING (9): **(15 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 StudentsDoing 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 inGeography and Related Disciplines*. Nelson Thornes, Cheltenham U.K.
10. Lee, Roger Smith, David M. (eds.) 2004. *Geographies and Moralities: International Perspectives onDevelopment, Justice and Place*. Wiley-Blackwell, Oxford

GE-4: INDUSTRIAL GEOGRAPHY

Time 1 hours, **Full Marks 50**

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 Policies** of India throughout plan periods.

***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*, GyanodayaPrakashan, 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. PrayagPustakBhawan, Allahabad
10. Sharma, T.C. (2013) Economic Geography of India. Rawat Publication, Jaipur

SEC- 2: III RESEARCH METHODOLOGY

(Theoretical)

Time: 1 Hour **Full Marks: 50**

A. RESEARCH METHODOLOGY:

1. **Geographic Enquiry:** Definition and Ethics; Framing Abstract, 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;

B. PREPARATION OF RESEARCH REPORT:

C) Viva-voce (10), Research Report -Internal Evaluation (6) and External Evaluation(30) and Attendance(4)

Apart from the Theoretical portion the students have to prepare A Research Report on the basis of the above mentioned methodology.

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 *QualitativeMethods 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 Publs. Co., New Delhi.
6. Mukherjee, Neela 2002. Participatory Learning and Action: with 100 Field Methods. Concept Publs. 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 PlanningRegions; 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 TransportGeography; Models of Transportation; Importance of Transportation (4)
ii. **Traffic Flow Analysis:** Traffic of the Networks; Traffic Flow Characteristics; Parameters of TrafficFlow (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. ClavalP.l, 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. andZiesemer T., 1996: *Questioning Development; Essays onthe 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., Londan, 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., Gautheir, 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. Creating Geography related documents in **MS–Word** (2)

ii. Demographic data, Weather and Climatic data and Socio-economic data processing and Thematic Diagrams using Basic Calculations and formulas by **MS–Excel** (6)

iii. Geography related document presentation using **MS–PowerPoint** (4)

iv. **E – resources in Geography** (1)

B. GEOGRAPHICAL INFORMATION SYSTEM: (25 Marks)

i) **Definition and evolution of GIS:** Components of GIS; Geographical data: types and characteristics; Earth's shape, coordinate systems and datum. (4)

ii) **Digital representation of geographical data:** data structure, spatial data model, data base management systems, raster and vector models. (4)

iii) **Digital Elevation Model (DEM):** Characteristics and applications; Remote sensing and GIS integration; (2)

iv) **GIS Data Analysis**: Input; Geo-Referencing, Editing, Output and Query and Overlays by QGIS Software (8)

C. GLOBAL POSITIONING SYSTEM (GPS):

i. **Global Positioning System (GPS**): principles, uses and applications (Only Point analysis). (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, Im-age 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 ComputerAssisted 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 Com-puter inContemporary 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 Cartograph*y. Department of Geogra-phy, University of Minnesota, Ph.D. Dissertation, University Microfilms, Ann Arbor, MI.

DSE: Group A: 1. URBAN GEOGRAPHY

Time: 2 Hours **Full Marks: =50**

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

*** 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: NetworkedInfrastructures,TechnologicalMobilities 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 andresilience in Asian megacities. Advances in Geographical and Environmental Studies, Springer

DSE: Group A: 2. GEOGRAPHY OF HEALTH AND WELL-BEING

Time: 2 Hours **Full Marks: =50**

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; industralisation; 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.

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

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 Chichesten.
4. Christaler George and HristopolesDionissios, 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.,andLoytonen, 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, Harward Univ. Press.
10. Phillips, D.andVerhasselt, 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.

DSE: Group A: 3. FLUVIAL GEOMORPHOLOGY

Time: 2 Hours **Full Marks: =50**

1. **Fundamentals of river hydraulics:** Fluid mechanics, channel forces, factors controlling flowvelocity, velocity and its distribution, measurement of velocity and water discharge, types of stream flow.
2. **Fluvial processes:** erosional processes and landforms development-valley development, valleywidening, 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 ofdrainage basin and morphometric units.
6. **Problems related to river:** river bank erosion, sedimentation, flood problem with particularreference to the sub-Himalayan Rivers in North Bengal.

* **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 ImpactAssessment*. 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 ofGeomorphology*. Longman, London.

DSE: Group A: 4. 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 graticule on the following Projections: **1. Zenithal Non-Perspective**: **1.a)**PolarZenithal Equal Area **1.b.** Polar Zenithal Equidistant **2: Cylindrical**: **2.a)** Cylindrical Equal Area projections with Two standard Parallels **2.b)** Mercator's projection; **3) Conical:3.a)** Simple conical projection with two standard Paralles **4.b)** Conical Equal Area Projection withone standard Parallel **4.c)** Polyconic Projection

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

b. Computational problems of Prismatic Compass (Parallel Meridian and Interior angle method)

c. Computational problems of Dumpy Level (Rise Fall and Collimation Method)

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.JK 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 Anlytical study of Map Projections, Pan Publishing
Com.Kolkata,1988Bsak, N,N. Surveying and Levellinig, Tata McGraw Hill,New Delhi,
1994

DSE: Group A: 5. POPULATION GEOGRAPHY

Time: 2 Hours **Full Marks: =50**

1. **Nature and Scope:** Scope and Content of Population Geography; Sources of Data with specialreference 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.

* **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 the21st 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.

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 andLower), 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 Intenational Perspective. Vol. 3Indian 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*, GyanodayaPrakashan, Gorakhpur.
8. Spate O. H. K. and Learmonth A. T. A., 1967: *India and Pakistan: A General and RegionalGeography*, 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. PrayagPustakBhawan, 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 the study of any given /selected area .Questionnaire/schedule to be prepared for collection of primary data collected from the field are to be analysed /processed and represented by suitable methods. Report should contain adequate number of tables, diagrams, maps, photographs, com plying of anything associated with field report should only be allowed, field report is to be authenticated by the concerned supervisor(s). Participation and preparation of field work is compulsory.

Guidelines for the preparation of the Field Report:

- The Field Work is to be conducted after the completion of the 5^{th} 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 must not exceed 100 pages containing maps and diagrams and must be type 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.

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 *QualitativeMethods 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 Publs. Co., New Delhi.
6. Mukherjee, Neela 2002. Participatory Learning and Action: with 100 Field Methods. Concept Publs. Co., New Delhi
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: 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 ofPlanning 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 ofMetropolis; 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, Perroux's Growth Pole Theory, Rostow's Stages of Economic Growth.
6. **Five Year Plans of India**.
7. **Rural Development Programmes**.

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*** 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. ClavalP.l, 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 onthe 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: Group B: 2. TRIBAL STUDIES

Time: 2 Hours **Full Marks: =50**

1. **Tribe :** Definition; General Characteristics; Special characteristics; nomenclature; geographicaldistribution; 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^{th}Schedule and 6^{th}schedule of Constitution; Administration ofScheduled 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, Andamanese, Khasi, , Rava, Toto, Mech.

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

Suggested Readings:

1. Sharma, B.D : Planning for tribal Development, PrachiPrakashan, 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.

DSE: Group B: 3. 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 Thuenen, 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: Group B: 4. SOCIAL GEOGRAPHY

Time: 2 Hours **Full Marks: =50**

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, Housingand Education.
5. **Social Geographies** of Inclusion and Exclusion, Slums, Gated Communities, Communal Conflictsand Crime.

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

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 SocialGeographies*, 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.

DSE: Group B: 5. 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, Geographyof Representation, Gerrymandering.
4. **Political Geography of Resource Conflicts:** Water Sharing Disputes, Disputes and ConflictsRelated to Forest Rights and Minerals.

5. **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*, Routledg .
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 andAsia* (vo.2), Frank Cass

DSE: Group B: 6. 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; Hydrological input and output.
2. **River Basin and Problems of Regional Hydrology**: Characteristics of river basins, basin surfacerun-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.

* **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 toOceanography*, 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- 2 A				
II	English/MIL-1Environmental Science/ (English/MIL Communication) Human Geography DSC- 2 B				
III	English/MIL-2 General Cartography (Practical) DSC- 2 C		Regional Planning and Development		
IV	English/MIL-2 Environmental Geography DSC- 2 D		Remote Sensing and GPS based Project Report		
V			GIS based Project Report (Practical)	Geography of India or Economic Geography DSE-2 A	GE-1
VI			Field Techniques and Survey based Project Report (Practical)	Disaster Management or Geography of Tourism DSE-2 B	GE-2

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 A1: 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 A2: 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; Trends and Patterns of World and Indian Urbanization

***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) TheDictionary ofHuman 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) ManavBhugol, Rastogi Publication, Meerut.
6. Maurya, S.D. (2012) ManavBhugol, ShardaPustakBhawan. Allahabad.
7. Ghosh, S. (2015) Introduction to settlement geography. Orient Black Swan Private Ltd., Kolkata
8. Hussain, Majid (2012) ManavBhugol. Rawat Publications, Jaipur

B.A PROGRAMME IN GEOGRAPHY: 3rd SEMESTER

DSC A3: General Cartography (Practical)

Time: 2 Hours **Full Marks: =50**

1. Maps – Types, Elements and Uses
2. Map Scale – Types (Linear, Comparative, Diagonal) and Application, Conversion of Scale (R.F. to Statement and Statement to R.F.)
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, Dots and Sphere, Choropleth, Proportional Divided Circle.
5. Interpretation of Topographical Maps.(Plateau Region), Physical: Physiography, Drainage, Vegetation: Cultural: Settlement, Transport & Communication: Transect Chart and General Interpretation.

6. Laboratory Note book

***Marks for Practical Examination (40), Attendance (4) and Laboratory Note Book 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: *PrayogicBhugol*, Rastogi Publishers.
6. Singh R. L. and Singh R. P. B., 1999: *Elements of Practical Geography*, Kalyani Publishers
7. Singh R. L., 1998: *PrayogicBhoogolRooprekha*, 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 and Delineation of Planning Region.
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. ClavalP.l, 1998: *An Introduction to Regional Geography*, Blackwell Publishers, Oxford and Massachusetts.
3. Friedmann J. and Alonso W. (1975): *Regional Policy - Readings in Theory andApplications*, MIT Press, Massachusetts.
4. Gore C. G., 1984: *Regions in Question: Space, Development Theory andRegional Policy*, Methuen, London.
5. Gore C. G., Köhler G., Reich U-P. andZiesemer T., 1996: *QuestioningDevelopment; 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 A4: 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; Solid and Liquid Waste.
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. Remote Sensing: Definition, Development, Platforms and Types.
2. Aerial Photography: Principles, Types and Physical and Cultural features identification
3. Interpretation and Application of Remote Sensing: Land use/ Land Cover mapping from satellite imageries
4. Geographical Information System (GIS): Definition and Components.
5. GIS Data Structures: Types (spatial and Non-spatial), Raster and Vector Data Structure.
6. Global Positioning System (GPS) – Principles and Uses

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

Suggested Readings

1. Campbell J. B., 2007: *Introduction to Remote Sensing*, Guildford Press.
2. Jensen J. R., 2004: *Introductory Digital Image Processing: A Remote SensingPerspective*, 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 Sensingand 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: WithApplications in GIS*, McGraw-Hill.

B.A PROGRAMME IN GEOGRAPHY: 5th SEMESTER

SEC 3: Instruments Based Report (Practical)

Time: 2 Hours **Full Marks: =50**

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

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

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, ShardaPustakBhawan, Allahabad
4. Heywoods, I., Cornelius, S and Carver, S. (2006) An Introduction to Geographical Infromation 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 A1: Geography of India

Time: 2 Hours **Full Marks: =50**

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).

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

Suggested Readings

1. Hussain M., 1992: G*eography of India*, Tata McGraw Hill Education.
2. Mamoria C. B., 1980: *Economic and Commercial* G*eography 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: G*eography 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* G*eography ofIndia*, Vikas Publishing.
7. Singh Gopal, 1976: *A* G*eography 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 B1: Economic Geography

Time: 2 Hours **Full Marks: =50**

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

***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, Presentand Future*, Taylor and Francis.
3. Coe N. M., Kelly P. F. and Yeung H. W., 2007: *Economic Geography: AContemporary Introduction*, Wiley-Blackwell.
4. Combes P., Mayer T. and Thisse J. F., 2008: *Economic Geography: TheIntegration 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

GE1: 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 and Mapping.
5. Disaster Risk Reduction: Mitigation and Preparedness, NDMA and NIDM;

***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 no more 50 pages and type by Computer)

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

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 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 binding.

Suggested Readings

1. Creswell J., 1994: *Research Design: Qualitative and QuantitativeApproaches* 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.

B.A PROGRAMME IN GEOGRAPHY: 6th SEMESTER

DSE A2: 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, NDMA and NIDM;

***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 B2: 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, Intensity, Age Group, 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.NewDelhi.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.