

SYLLABUS

**Sridev Suman Uttarakhand State University
Badshahithaul, Tehri (Garhwal)**

B.A./ B.Sc. GEOGRAPHY

03 Years Semester System

(Effective from Academic Session : 2018-2019)

-: Syllabus Committee :-

- 1. Dr. Mohan Singh Panwar** **Convener**
Department of Geography
HNB Garhwal University (A Central University)
Srinagar (Garhwal)
Uttarakhand, India
- 2. Dr. Bhanu Prasad Naithani** **Member**
Department of Geography
HNB Garhwal University (A Central University)
Srinagar (Garhwal)
Uttarakhand, India
- 3. Dr. Kamal Singh Bisht** **Member**
Department of Geography
D.B.S. (P.G.) College
Dehradun
Uttarakhand, India

Summary of the Syllabus

Sridev Suman Uttarakhand State University

Badshahithaul, Tehri Garhwal

B.A./ B.Sc. GEOGRAPHY

03 Years Semester System

(Effective from Academic Session : 2018-2019)

Semester - I

Paper No.	Name of the Paper	B.A.			B.Sc.		
		Theory	Internal Assessment	Paper Total	Theory	Internal Assessment	Paper Total
Paper - 1	Physical Geography	80	20	100	120	30	150
Paper - 2	Human Geography	80	20	100	120	30	150
Paper - 3	Practical - I	60	40	100	90	60	150
TOTAL		220	80	300	330	120	450

Semester - II

Paper No.	Name of the Paper	B.A.			B.Sc.		
		Theory	Internal Assessment	Total	Theory	Internal Assessment	Total
Paper- 4	Geographical Thought	80	20	100	120	30	150
Paper - 5	Environmental Geography	80	20	100	120	30	150
Paper- 6	Practical - II	60	40	100	90	60	150
TOTAL		220	80	300	330	120	450

Semester - III

Paper No.	Name of the Paper	B.A.			B.Sc.		
		Theory	Internal Assessment	Total	Theory	Internal Assessment	Total
Paper- 7	Geography of India	80	20	100	120	30	150

Paper - 8	Disaster Management (With reference to Uttarakhand)	80	20	100	120	30	150
Paper - 9	Practical - III	60	40	100	90	60	150
TOTAL		220	80	300	330	120	450

Semester - IV

Paper No.	Name of the Paper	B.A.			B.Sc.		
		Theory	Internal Assessment	Total	Theory	Internal Assessment	Total
Paper -10	Regional Geography of the World	80	20	100	120	30	150
Paper -11	Bio- Geography	80	20	100	120	30	150
Paper -12	Practical - IV	60	40	100	90	60	150
TOTAL		220	80	300	330	120	450

Semester - V

Paper No.	Name of the Paper	B.A.			B.Sc.		
		Theory	Internal Assessment	Total	Theory	Internal Assessment	Total
Paper -13	India - Location Aspects (Map)	80	20	100	120	30	150
Paper- 14	Population Geography	80	20	100	120	30	150
Paper -15	Practical - V	60	40	100	90	60	150
TOTAL		220	80	300	330	120	450

Semester - VI

Paper No.	Name of the Paper	B.A.			B.Sc.		
		Theory	Internal Assessment	Total	Theory	Internal Assessment	Total
Paper- 16	Economic Geography	80	20	100	120	30	150
Paper -17	Geography of Uttarakhand	80	20	100	120	30	150
Paper -18	Practical - VI	60	40	100	90	60	150
TOTAL		220	80	300	330	120	450

Semester - I

Paper – 1 : Physical Geography

1. Physical Geography – Definition and Scope. Theory of the origin of the Earth.
2. Atmosphere – Structure of the Atmosphere, Insulation, Global Circulation Pattern. Tropical Cyclones. Monsoon, Climatic Classification (Koppen).
3. Lithosphere – Internal Structure of Earth based on Seismic Evidence origin of the Continents and oceans. Plate Tectonics and its Features. Denudation process and Cycle of Erosion – Davis and Penck.
4. Hydrosphere – Hydrological Cycle, Ocean Bottom, Relief Features. Tides and Currents, coral Reef.

Reading List

1. Gabler R.E., Petersen J.F. and Trapasso, L.M., 2007 : Essentials of Physical Geography (08th Edition). Thompson, Brooks / Cole, USA.
2. Garrett N., 2000 : Advanced Geography, Oxford University Press.
3. Goudie. A., 1984 : The Nature of the Environment : An Advanced Physical Geography. Basil Blackwell Publishers, Oxford.
4. Husain M., 2002 : Fundamentals of Physical Geography. Rawat Publications, Jaipur.
5. Monkhouse, F.J. 2009 : Principles of Physical Geography. Platinum Publishers, Kolkata.
6. Strahler A.N. and Strahler A.H., 2008 : Modern Physical Geography. John Wiley & Sons. New York.
7. Singh, Savindra, Physical Geography, Both version Hindi and English, Pravali Ka Publication, Allahabad.

Paper - 2 : Human Geography

1. **Definition** : Nature, Concepts, Scope and contribution of Human Geography.
2. **Space and Society** : Cultural Regions, Races, Religion and Language
3. **Population** : Population Growth, Demographic Transition Theory, World Population Distribution and Composition (Age - Gender and Literacy), Migration Types and impact.
4. **Settlements** : Types and Patterns of Rural Settlements Classification of Urban Settlements, Trends and Patterns of World Urbanization, Study of any one placed city.

Reading List :

1. Chandna, R.C. (2010) Population Geography, Kalyani Publisher.
2. Daniel, P.A. and Hopkinson, M.F. (1989) The Geographhy of Settlement. Oliver and Boyd, London.
3. Johnston R. :Gregory D. Pratt G.et al. (2008) The Dictionary of Human Geogrphahy, Blackwell, Publicaiton.
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.

Paper – 3 : Practical – I

- a. Scale – Definition and importance, construction of Simple, comparative and diagonal scale.
- b. Topo sheets – indexing, scale and conventional signs.
- c. Study and interpretation of one inch/ 1:50000. Survey of India Toposheets with special reference to landscape feature, drainage characteristics, land use, settlements, transport and other routes.
- d. Landform features based on contours and profile drawn on them.

Division of Marks (Internal Examiner will be appointed by the Principal /HOD)

- a. Lab Work – One question from each section with internal choice (Duration three hours 60 MM)
- b. Sessional Record and Viva – voce – 10+10 = 20
- c. Internal Assessment = 20
(Practical Exam will be essentially conducted by the external examiner appointed by the University)

Reading List

- a. Dent B.D., 1999 : Cartography : Thematic Map Design. (Vol. I). McGraw Hill.
- b. Gupta K.K. and Tyagi V.C., 1992 : Working with Maps, Survey of India, DST, New Delhi.
- c. Mishra R.P. and Ramesh A., 1989 : Fundamentals of Cartography, Concept Publishing.
- d. Sharma J.P., 2010 : Prayogic Bhugol, Rastogi Publishers.
- e. Singh R.L., and Singh R.P.B., 1999 : Elements of Practical Geography. Kalyani Publishers
- f. Singh R.L., 1998 : Prayogic Bhoogol Rooprekha, Kalyani Publications.
- g. Steers J.A., 1965 : An Introduction to the Study of Map Projections. University of London.

Semester – II

Paper - 4 : Geographical Thought

1. Definition, Nature and Scope of Geography, Branches and sub branches of Geography, Basic concepts of Geography with modern thoughts.
2. Contribution of Greek and Roman Geographers – Ptolemy and Strabo, Arab Geographers. Contribution of Geographical Knowledge in ancient and medieval India, Renaissance in Geography, Discoveries and inventions, Contribution of Taylor Immanuel Kant.
3. German and French School of Geography – Davis. EC. Semple. Huntington. Isaiah Bowman, Mackinder, Herbertson and Stamp.
4. Geography in India (after independence): Recent Trends in Geography and Modern Geographical School of thoughts.

Selected Readings

1. Dickenson R.E. – The Makers of Modern Geography – Rutledge and Kegan London.
2. Freeman T.W. – A Hundred Years of Geography, London.
3. Jones and Martin – All Possible World – A History of Geographical Ideas. Odessey. Indianapolis (USA)

4. Halt Jensen A. – Geography – its History and concepts. Harper and Raw London.
5. Dixit R.D. – Geographical Thought – A Contextual History of Ideas. Prentice Hall, New Delhi.
6. Kaushik S.D. – Bhaugolik Vichardharayen (Hindi) – Sahitya Bhawan Pub. Agra.
7. Hussain Majid – Evolution of Geographical Thought (English and Hindi) Rawat Publication Jaipur.
8. Taylor G. Geography in Twentieth Century : London
9. Jagdish Singh – Bhaugolik Chintan ka Kram Vikas (Hindi Gyanodaya, Gorakhpur)

Paper – 5 : Environmental Geography

1. Environmental Geography : Definition, Concepts and Approaches, Ecosystem – Concept, Structure, Ecosystem Functions, Tropic level, Food Chain and Food web.
2. Man – Environment Relationship in all the Geographical Region: Plains, Desert, Mountain an Coastal Regions.
3. Environmental Problems and Management : Pollution Types, Biodiversity Loss, Solid and Liquid Waste and ecosystem and Environmental Conservation and Management
4. Environmental Programme and Policies at Global, National and Regional level, Government and Civil Society initiatives to conserve Environment with reference to Uttarakhand.

Reading List :

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 Environment 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. Panwar, Mohan Singh (2007) ***Environmental Changes and Sustainable Development in the New Millennium***, Research India Press, New Delhi.
5. Singh. R.B. (1993) ***Environmental Geography***. Heritage Publishers, New Delhi.
6. Singh R.B. and Hietala, R. (Eds) (2014) ***Livelihood Security in North-western Himalaya : Case Studies from Changing Socio – economic environments in Himachal Pradesh***, India. Advances in Geographical and Environmental Studies. Springer
7. Singh, Savindra 2001. ***Paryavaran Bhugol***. Prayag Pustak Bhawan. Allahabad (In Hindi)
8. Teli, B.L. 2005, ***Paryavaraniya Adhayan***, College Book Depot, Jaipur.
9. Nautiyal, Rajesh, Prasad Gayatri, ***Paryavaran Bhoogal***.

Paper – 6 : Practical – II

- a. Maps- Definition, basic concepts and classification, Map Composition.
- b. Map Projections – Classification, Properties, Choice and Merits and Demerits.
- c. Construction of Conical Projection with one and two standard parallel, Bonne’s cylindrical equal area. Mercater’s and Polar Zenithal Equal Area Map projection.
- d. Study and interpretation of Indian Daily Weather Report Maps/ reports of January, June and July with weather interpretation report.

Division of Marks (Internal Examiner will be appointed by the Principal /HOD)

- a. Lab Work – One question from each section with internal choice (Duration three hours 60 MM)
- b. Sessional Record and Viva – voce – 10+10 = 20
- c. Internal Assessment = 20

(Practical Exam will be essentially conducted by the external examiner appointed by the University)

Reading List :

- a. Dent B.D., 1999 : Cartography : Thematic Map Design. (Vol. I). McGraw Hill.
- b. Gupta K.K. and Tyagi V.C., 1992 : Working with Maps, Survey of India, DST, New Delhi.
- c. Mishra R.P. and Ramesh A., 1989 : Fundamentals of Cartography, Concept Publishing.
- d. Sharma J.P., 2010 : Prayogic Bhugol, Rastogi Publishers.
- e. Singh R.L., and Singh R.P.B., 1999 : Elements of Practical Geography. Kalyani Publishers
- f. Singh R.L., 1998 : Prayogic Bhoogol Rooprekha, Kalyani Publications.
- g. Steers J.A., 1965 : An Introduction to the Study of Map Projections. University of London

Semester – III

Paper – 7 : Geography of India

1. **Physical Aspects** – Location and Relief, Drainage, Climate and Natural vegetation and Soil.
2. **Population** – size and Growth since 1901, Population Distribution, Literacy, Sex Ratio, irrigation.
3. **Settlement System** – Rural Settlement Types and Patterns Urban Pattern and Cities.
4. **Economy and Resource Base** - Livestock (Cattle and Fisheries). Power (Cool and Hydroelectricity), Minerals (Iron ore, Petroleum and Bauxite)
Agriculture (Rice, Wheat, Sugarcane. Tea Cotton) : Industries (Cotton Textile, Iron – Steel, Automobile). Transportation Modes (Road and Rail)

Reading List

1. Hussain M., 1992 : Geography of India. Tata McGraw Hill Education.
2. Mamoria C.B., 1980 : Economic and Commercial Geography of India. Shiva Lal Agarwala.
3. Miller F.P., Vandome A.F. and McBrewster J. 2009 : Geography of India : Indo- Genetic Plain, Thar Desert, Major Rivers of India. Climate of India. Geology of India, Alpha Script 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 Geopgrpahy of India, Vikas Publishing
7. Bansal, S.K., Bharat ka Bhoogal, publisher, Agra.
8. Singh Gopal, 1976 : a Geography of India, Atma Ram
9. Spate O.H.K. and Learmonth A.T.A. 1967 : India and Pakistan : A General and Regional Geography, Methuen, Khullow, S.K., Geoprpahy of India, Publisher.
10. Rana, Tejbir Singh, 2015 Diversity of India, R.K. Books, Delhi.

Paper – 8 : Disaster Management (with reference to Uttarakhand)

1. Definition Risk, Vulnerability, Concepts and Types of Hazards and Disasters, Cloud bursts and specific case studies of Uttarakhand.
2. Disasters in India : Causes, Impact, Distribution and Mapping : Flood, Landslide, Drought, Earthquake and case studies of Indian Context.
3. Human induced Disasters : Causes, Impact, Distribution and Mapping : Forest Fire, Climate change, some case studies of Himalaya.
4. Response and Mitigation to Disasters: Mitigation and Preparedness, SDMA, DMMC, DDMA, Indigenous Knowledge and Community – Based Disaster Management : Role of Civil Society and Government during the Disasters.

Reading List :

1. Government of India (1997) : Vulnerability Atlas , 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. S – 25, Green Park Extension, Uphaar Cinema Market, New Delhi, India.
9. Naithani, B.P. (2017), *Prakratik Apda Prabhav evam Prabhandhan*, Akhand Publishing Hanse Sahadatpur extension, New Delhi.

Paper – 9 : Practical – III

- a. Primary and secondary data and their sources, methods of primary data collection, classification of statistical data and tabulation.
- b. Frequency curves, histogram and polygon. Measures of Central Tendency – Mean, Median, Mode.
- c. Measures of dispersion – Quartile, Standard Deviation and coefficient of Variation.
- d. Coefficient of Correlation – Karl Pearson’s and Spearman’s methods. Scatter Diagrams.

Division of Marks (Internal Examiner will be appointed by the Principal /HOD)

- a. Lab Work – One question from each section with internal choice (Duration three hours 60 MM)
- b. Sessional Record and Viva – voce – 10+10 = 20
- c. Internal Assessment = 20

(Practical Exam will be essentially conducted by the external examiner appointed by the University)

Reading List :

1. Dent B.D., 1999 : Cartography : Thematic Map Design. (Vol. I). 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. Sharma J.P., 2010 : Prayogic Bhugol, Rastogi Publishers.
5. Singh R.L., and Singh R.P.B., 1999 : Elements of Practical Geography. Kalyani Publishers
6. Singh R.L., 1998 : Prayogic Bhoogol Ki Rooprekha, Kalyani Publications.
7. Steers J.A., 1965 : An Introduction to the Study of Map Projections. University of London.

Semester – IV

Paper – 10 : Regional Geography of the World

1. Significance and approaches of Regional Geography, Concept and types of the Regions, Natural and cultural regions of the world.
2. Regional Geography of Developed countries with special reference to USA and Japan. Regional Geography of Developing countries with special reference to China and Brazil.
3. Regional Geography of South Asian Countries. Study of SARC Countries and their importance.
4. World – Location Aspects (Map) show is locations in the outline map of world.
 - i. **Physical** – Mountain and Ranges, Rivers, Forest, Soil, Lakes and Natural Regions
 - ii. **Cultural** – Countries and Capitals, important cities, Population, Tribal Area, Planning Regions.
 - iii. **Economic** – Agricultural Regions, Resource Regions, Power Plants, Hydro Power plants, important parts and Traderouts
 - iv. **Others** – Biodiversity, National Parks, Environment, Ecology

Paper – 11 : Bio- Geography

1. Significance of Bio Geography, Scope of Bio Geography, Ecological Adaptation, Climax concept and Ecosystem balance.
2. Historical Evolution of Plants and Animals, Pattern and Causes of Plant and animal distribution, Bio-Geographical Regions of the World.
3. Biodiversity, Biodiversity- Significance, Climate Change, Bio Geography of Uttarakhand.
4. National Parks, Biosphere Reserves, Eco - Sensitive Regions, Biodiversity Hot spots.

Paper – 12 : Practical – IV

- a. Statistical Diagrams – Simple. Compound and Multiple Bar Diagram. Ring of Circle Diagram. Simple and Polyline graph. Hyther graph and Climograph.
- b. Distribution of maps – Isopleths. Choropleth, Layer Tint and Dot Method.
- c. Identification of rock outcrops, bedding panes, determinants of dip and thickness- simple and folded (Geological cross section drawing)

Division of Marks (Internal Examiner will be appointed by the Principal /HOD)

- a. Lab Work – One question from each section with internal choice (Duration three hours 60 MM)
- b. Sessional Record and Viva – voce – 10 + 10 = 20
- c. Internal Assessment = 20

(Practical Exam will be essentially conducted by the external examiner appointed by the University)

Reading List :

1. Dent B.D., 1999 : Cartography : Thematic Map Design. (Vol. I). 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.

Semester - V

Paper – 13 : India –Locational Aspects (Map)

Objective : The paper is designed to acquaint the student with the importance of location as one of the important aspects of geographical studies. The aim to promote awareness among students about atles.

There will be two parts of this course :

- A. An outline map of India will be provided to the students and they will have to mark locations on it. 15 locations will be given and 01 mark for each correct location.
- B. An outline map of India with indicated location of features in the numerals will be provided. Students will identify the location features. 15 locations features will be given for identification and 01 mark to each correct identification.

Students will provide write up (for both A and B Part) on the significant geographical relevance and importance of the locations (marked and identified), whether physical, economic, cultural, ecological, environmental and commercial etc. in 30 words on each. 01 Mark is allotted for each write-up.

Distribution of Marks :

A. Locations	15 Marks
Write up in 30 words	15 Marks
B. Identification of Locations	15 Marks
Write up in 30 words	15 Marks

Course Contents :

Physical – Mountain and ranges, rivers, forest, soil, lakes and natural regions

Cultural – State and capitals, important cities, population, Rural- Urban, Tribal Areas, Planning regions

Economic – Agricultural regions/ belts, Industrial regions and complexes, Power Plants, Hydro Power Projects, Important Industries, Important ports and transport routes, important Resources

Others – Bio- Diversity, National Parks, Environment, Ecology and contemporary issues

Note : Examiner (Paper Setter) should select location and identified locations from all aspects of course and covering the entire map distributed all across. Repetition of location of same nature and character should be avoided.

Examiner will provide key of both A and B Part. Map provided to the students should be of same scale/ size on which key is prepared. For Part A a blank map should be attached with the question paper. For part B numerically identified map to be enclosed with question paper. For evaluation of this paper, key is of utmost importance prepared by the paper setter.

Books Recommended :

1. India & the World – NATMO, School Atlas, Oxford –Atlas & Time UK Print World Atlas and Uttarakhand Atlas.

Paper – 14 : Population Geography

1. Concept and significance of Population Geography, Nature and Sources of Population Data, Population and Development Planning, Recent Development in Population Geography.
2. Population Growth, Structure, Distribution and density, World Patterns, Concept of under, over and optimum population, Population composition – Age, Sex, literacy, occupational structure and gender issues.
3. **Population Dynamic** – Migration, types, causes, National and International pattern, Push and Pull factors, Rural and Urban dimensions, Demographic regions of India, Distribution of Population of India.

4. Population Resource Regions, Population Planning and Policies in under developed and developed countries, Human Development Index, National Population Policy.

Paper 15 - Practical V

Field Techniques and Survey Based Project Report

1. Field work in Geographical studies – Definition, Aim and Objectives, Methodology of Field Work.
2. Defining the Field area and identifying the Case Study – Rural/ Urban/ Physical/ Human/Environmental.
3. Field Techniques –Selection of the Appropriate Techniques : Observation, Sampling, PRA, Questionnaires (Open/ Closed/ Structured/ Non Structured), Interview with Special Focus on Focus Group Discussions, Space Survey (Transects and quadrants'. Contracting a Sketch), Map of the field work.
4. Designing the field Report – Aims and Objectives, Methodology, Analysis. Interpretation and writing the project report.

Practical Record :

1. Each Student will prepare an individual report based on primary and secondary data collected during the field work.
2. The duration of the field work should not exceed than 10 days in any Geographical region of India.
3. The Word count of the report should be about 8000 to 12,000 excluding figures, tables, photographs, maps references and appendices.
4. One copy of the report on A4 size paper should be submitted in soft binding

Note : The field work Report evaluation – 50 Marks, - Viva Voce – 30 Marks, Internal Assessment = 20 Marks.

*** This field study will be organized in Himalayan Region, Desert Region, Plain Region, Plateau and Coastal Region any part of India.**

Regarding List

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. Panwar, Mohan Singh, 2017 **"Sookcham Stariya Niyozan Evam PRA Techniques"** Binser Publication.

7. Robinson A. 1998 **“Thinking straight and Writing that way”** in writing empirical research reports: A Basic Guide for Students of the Social and Behavioral Sciences eds. By F. Pryczak and R. Bruce Pryczak. Publishing: Los Angeles.
8. Special Issues on “Doing Field Work” The Geographical Review 91:1-2(2001)
9. Stopddard R.H. 1982 : Field Techniques and Research Methods in Geography. Kendall/ Hunt.
10. Wolcott. H. 1995. The Art of Field work. Alta Mira Press, Walnut Creek. C.A.

Semester - VI

Paper 16 : Economic Geography

Paper 17 : Geography of Uttarakhand

1. Geographical Background, Physiographic Regions, River Systems, Climate, Natural Vegetation, Soil, Glaciers and Lakes.
2. Population, Growth, Distribution, Structure, Literacy Migration, Rural and Urban settlements, Occupational structure, Major Tribes
3. Agriculture, Horticulture, Tourism and Pilgrimage, Important Natural Resources, Industries and Hydropower projects.
4. Major National Park, Biosphere Resource and Eco- sensitive Zones, Disasters, Ecological and Environmental Issues, Development and Contemporary issues.

Paper – 18 : Practical VI

- a. Two Field Survey Exercises – duration four Hours (50 Marks)
- b. GPS Handling and field survey by GPS = 10 (For Handling of GPS and Field Surveying) an expert can be hiring from the reputed Institution to trained the student.
- c. Sessional record and viva – voce – 10+10 = 20

Reading List :

1. Dent B.D., 1999 : Cartography : Thematic Map Design. (Vol. I). 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.