

# DEPARTMENT OF GEOGRAPHY

School of Earth Science

## SYLLABUS


(Revised)


**M.A/M.Sc Geography**

(Effective from academic session 2021-22)

**H.N.B. Garhwal University, Srinagar (Garhwal)**

**(A Central University)**

  
Dean  
School of Earth Science  
H.N.B. Garhwal University  
(A Central University)  
Srinagar (Garhwal)-246174  
Uttarakhand

  
Prof. M.S. Negi  
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Srinagar (Uttarakhand)

## SYLLABUS

M.A./M.Sc. GEOGRAPHY (Effective From 2021-2022 Session)

### I<sup>st</sup> Semester

Course Code	Paper No.	Title of Course/ Paper	Marks		
			Internal Assessment	End Semester Exam	Credit
SOES/GEOG/C001	I	Geographic Thought	40	60	03
SOES/GEOG/C002	II	Geomorphology	40	60	03
SOES/GEOG/C003	III	Geography of Resources	40	60	03
SOES/GEOG/C004	IV	Geography of India	40	60	03
SOES/GEOG/C005	V	Locational Aspects (Map) India and World	40	60	03
SOES/GEOG/C006	VI	Practical I - Cartography	40	60	03
		Total	240	360	18

### II<sup>nd</sup> Semester

Course Code	Paper No.	Title of Course/ Paper	Marks		
			Internal Assessment	End Semester Exam	Credit
SOES/GEOG/C007	VII	Geography of Himalaya	40	60	03
SOES/GEOG/C008	VIII	Climatology	40	60	03
SOES/GEOG/C009	IX	Geo-Environmental Studies	40	60	03
SOES/GEOG/C010	X	Remote Sensing and GIS	40	60	03
SOES/GEOG/C011	XI	Population Geography	40	60	03
SOES/GEOG/C012	XII	Practical (Quantitative Techniques)	40	60	03
		Total	240	360	18
Self Study Course					
SOES/GEOG/SS01	SS-01	Assignment Based Seminar (Qualifying)	40	60	03

### III<sup>rd</sup> Semester

Course Code	Paper No.	Title of Course/ Paper	Marks		
			Internal Assessment	End Semester Exam	Credit
SOES/GEOG/C013	XIII	Research Techniques and Methodology	40	60	03
SOES/GEOG/C014	XIV	Hazards and Disaster Management	40	60	03
SOES/GEOG/C015	XV	Practical III (Remote Sensing, GIS and Field Study Tour)	40	60	03
		Total	120	180	09
Elective Courses					
Any Three of the following elective (optional) courses					
SOES/GEOG/E001	XVI (a)	Geography of Water Resources	40	60	03
SOES/GEOG/E002	XVI (b)	Urban Geography	40	60	03
SOES/GEOG/E003	XVI (c)	Regional Planning and Development	40	60	03
SOES/GEOG/E004	XVI (d)	Medical Geography	40	60	03
SOES/GEOG/E005	XVI (e)	Cultural Geography	40	60	03
SOES/GEOG/E006	XVI (f)	Political Geography	40	60	03
Self Study Course					
(SOES/GEOG/SS02 :)	SS-2	Transport Geography (Qualifying)	40	60	03
		Total	120	180	09


### IV<sup>th</sup> Semester

Course Code	Paper No.	Title of Course/ Paper	Marks		
			Internal Assessment	End Semester Exam	Credit
SOES/GEOG/C016	XVII	Geography of Uttarakhand	40	60	03





SOES/GEOG/C017	XVIII	Dissertation	40	60	03
SOES/GEOG/C018	XIX	Practical (Surveying )	40	60	03
		Total	120	180	09
Elective Courses		Any Three of the following elective (optional) Papers			
SOES/GEOG/E007	XX (a)	Agriculture Geography	40	60	03
SOES/GEOG/E008	XX (b)	Bio- Geography	40	60	03
SOES/GEOG/E009	XX (c)	Geography of Tourism	40	60	03
SOES/GEOG/E010	XX (d)	Glacial Geomorphology	40	60	03
SOES/GEOG/E011	XX (e)	Land Use and Soil Geography	40	60	03
SOES/GEOG/E012	XX (f)	Social Geography	40	60	03
Self Study Course III (SOES/GEOG/ESS-003)	SS-03	Rural Geography (Qualifying)	40	60	03

  
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### M.A./M.Sc. of Geography 02 Years Semester

Guidelines for continuous internal assessment for post graduate courses of Geography Semester System:

Only those candidates who had offered Geography as one of the optional subject in B.A./ B.Sc. III level may be admitted to M.A./M.Sc. Geography course. No private is allowed. Candidate must pass in theory and practical examinations separately.

Effective from the Ist semester admission for the academic session 2020-21 and onward.

1. Two sessional tests of continuous internal assessment 40%
2. End semester (Terminal ) Exams 60%
- Continuous internal assessment may include objective tests, written test, snap test, assignment, paper presentation, participation in class discussion and laboratory work etc.; suitable to the course paper presentation should be given priority and presentation must be one of the important method of internal assessment.
- Weightage of 2 marks for attendance component out of 40 marks for continuous assessment shall be available only to those students who attend 75% and more of classroom theory and practical.
  - (i) 76% attendance and above upto 85% : 2 marks
  - (ii) Above 85% : 3 marks
- There will be six core (compulsory) papers including practical in I semester and same pattern in II semester.
- There will be three core (compulsory) including practical and three elective (out of the offered elective papers) in III semester and same pattern in IV semester.
- For all courses/paper core and elective the credits will be three for each. End semester exam will be 02 hours duration.
- One qualifying self study courses of minimum 03 credits is mandatory but not to be including in the grades. Maximum 03 self study courses are allowed. This study can be taken up in II or IV semester. This paper should be inter disciplinary in nature.

#### I<sup>st</sup> Semester

Course Code	Paper No.	Title of Course/ Paper	Marks		
			Internal Assessment	End Semester Exam	Credit
SOES/GEOG/C001	I	Geographic Thought	40	60	03
SOES/GEOG/C002	II	Geomorphology	40	60	03
SOES/GEOG/C003	III	Geography of Resources	40	60	03
SOES/GEOG/C004	IV	Geography of India	40	60	03



SOES/GEOG/C005	V	Locational Aspects (Map): India and World	40	60	03
SOES/GEOG/C006	VI	Practical I - Cartography	40	60	03
		Total	240	360	18

SOES/GEOG/C001

### GEOGRAPHIC THOUGHT

#### Paper I

Time: 2 Hrs

Internal Assessment : 40 Marks

End Semester Exam : 60 Marks

**Note:** The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.

#### UNIT I

Contribution of Greeks and Romans with special reference to Ptolemy and Strabo, German School of Geography – Humboldt, Ritter and Ratzel

French School of Geography – Blache & Brunches

American School of Geography – Sauer, Huntington and Bowman

British School of Geography – Mackinder, Herbertson and Peter Hagett

#### Unit II

Models and Paradigm, System Theory ' Dualism between: (i) Physical vs Human Geography (ii) Regional vs Systematic Geography; Quantitative Revolution, Post Modernism.

#### UNIT III

Positivism; Pragmatism; Functionalism; Idealism; Existentialism; Behavioural; Radical and Humanistic Geography; Future of Geography ; Contribution of Indian Geographers ;Development of Geography in Uttarakhand; Geographers of Uttarakhand .

#### Book Recommended:

1. Haggett, P.: Geography – A Modern Synthesis.
2. Chorley, R.J. and Hagget, P.: Model in Geography.
3. Johnston, R.J. and Claval, P.: Geography since the Second World War. An International Survey, Crown Halm, Sydney, 1984.
4. Johnston, R.J.: The Future of Geography, Methuen, London, 1988.
5. Adhkarl, S.: Fundamentals of Geographical Thought, Chaitanya Publishing House, Allahabad, 2006.

6. Marcus, D.: Post-Structuralism in Geography, The Diabolical Arts of Spatial Sciences  
Edinburgh University Press, Edinburgh, 1999.
7. Galle, G. and Wilmot, C. (ed.): Geography in America at the Dawn of the 21<sup>st</sup> Century,  
Oxford University Press, Oxford and New York 2003.
8. Hubbard, P., et al: Space, Theory and Contemporary Human Geography, Continuum,  
London, 2002.
9. Majid Hussain: Geography Thought (2007).
10. Dixit, R.D.: Geographical Thought: A Contextual History of Geographical Ideas,  
Prentice Hall of India, New Delhi, 2001.

**SOES/GEOG/C002**

**GEOMORPHOLOGY**

**Paper II**

Time: 2 Hrs

Internal Assessment : 40 Marks

End Semester Exam : 60 Marks

**Note:** The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.

**UNIT I**

Fundamental concepts of Geomorphology; Methods and Approaches of landforms study; Theories of landscape development by Gilbert, Davis, Penk and Hack and morphogenetic region.

**UNIT II**

Plate tectonics; Mountain building; Isostasy; Tectonic Geomorphology; Theories of slope development by Young and King; Peneplain and pediplains; Geological structure and rocks.

**UNIT III**

Geomorphic process – River, glacier, underground water : Mass movement and resultant landforms; Morphometry of drainage basin; Profile of equilibrium rejuvenation and polycyclic landscape.(With special reference to Uttarakhand Himalaya)

**UNIT IV**

Applied Geomorphology engineering works; Anthropogenic process and landscape planning; Regional Geomorphology of Uttarakhand -Great, Lesser and Siwalik Himalaya.

**Books Recommended:**

1. Bloom, A.L.: Geomorphology, Prentice Hall, New Jersey USA, 1979.
2. Goudie, A.: Geomorphological Techniques, George Allen and Unwin, London, 1981.
3. Washborn, A.L.: Periglacial Process and Environment, Edward Arnold, London, 1973.



4. Young, A.: Slopes, Oliver and Boyd, London, 1972.
5. King, C.A.M.: Techniques in Geomorphology, Edward Arnold, London, 1968.
6. Embleton, C. and Theories, J.: Processes in Geomorphology, Arnold Hienman, London, 1979.
7. Phodes, D.D. and William, G.P.: Adjustment of Fluvial Process, George Allen and Unwin, Boston, 1982.
8. Tricart, L. and Callam: Introduction to climate Geomorpholgy, Longman, London, 1972.
9. Derbyshire, E. Gregory K.J. and Halls, J.R.: Geomorphological Processes, Butterworths, London, 1979.
10. Gregory, K.J. and Willing, D.E.: Drainage Basin Processes and Forms, Edward Arnold, London, 1973.
11. Gregory, K.J. and Willing, D.E.: Man and Environment Processes, Butter Worths, London, 1981.
12. Singh Savindra: Bhu- Akriti vigyan in Hindi

**SOES/GEOG/C003**

**GEOGRAPHY OF RESOURCES**

**Paper III**

Time: 2 Hrs

Internal Assessment : 40 Marks

End Semester Exam : 60 Marks

Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.

**UNIT I**

Definition and concept of Resources, Classification of Resources; Definition scope and development of Resources Geography ; Concept of Resource geography.

**UNIT II**

Land, water, mineral, energy and biotic resources - distribution, use-misuse and conservation- global and Indian scenario.

**UNIT III**

Resources depletion and emerging issues - Desertification, deforestation, loss of bio-diversity, acid rain, energy crises, water scarcity, environmental problems.

**UNIT IV**

Conservation of resources; Sustainable development; Natural resource data management system (NRDMS); Community base Natural Resource Management (CBNRM).

**Books Recommended:**



1. Holechek, J.L. et al: Natural Resources- Ecology, Economics and Policy, Prentice Hall, New Jersey, 2000.
2. Kates, R.W. and Burton, I. (ed): Geography, Resources and Environment, Vol, II, University of Chicago Press, Chicago, 1986.
3. Mc Laren, D.J. and Sklnnet, B.J. (ed): Resources and World Development, Jogn Wiley and Sons, New York, 1986.
4. Newson, M.D.: Land, Water and Development, River Basin System and Management, Routledge, London, 1991.
5. Owen, S. and Owen, P.L.: Environment Resources and Conservation, Cambdridge University Press, New York, 1991.
6. Rees, J.: Natural Resources, Allocation, Economics and Policy, Methuen, London, 1988.
7. Simmons, I.G.: Earth, Air and Water Resources and Environment in Late 20<sup>th</sup> Century, Edward, Arnold, 1991.
8. Thomas, Alan, et al: Environmental Policies and NGO Influence, Routledge, London, 1985.
9. Mather, A.S. and Chapman, K.: Environmental Resources, Longman Scientific and Technical, London, 1995.
10. Harper, C.L.: Environment and Society Human Perspectives on Environment Issues, Prentice Hall, New Jersey.
11. Burton, I. and Kates, R.W. (ed): Readings in Resource Management and Conservation, 1965.
12. Allen, S.W. and Leonard, J.W.: Conserving Natural Resources, Mc Graw Hill, New York.
13. Smith, G.H. (ed): Conservation of Natural Resources, John Wiley, New York.

SOES/GEOG/C004

### GEOGRAPHY OF INDIA

#### Paper IV

Time: 2 Hrs

Internal Assessment : 40 Marks

End Semester Exam : 60 Marks

**Note:** The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.

#### UNIT I

Indian federalism; India unity in diversity (view points from Social Geography); Physiography; Drainage (volume); Climate mechanism of Indian monsoon (recent theories); Soil and natural vegetation.

#### UNIT II

  
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Human development index and its components; Growth distribution and density of population; Trends of Urbanization; Special distribution pattern of settlement (rural & urban).

### UNIT III

Agro-climate region; Rainbow revolution, Industrial Complex and Industrial regions; Major river valley projects; Energy crises and food security.

### UNIT IV

Growing importance of ports; Last five years plans; Experience of Rural Planning; Integrated R.D.P; Multi level planning; Community participation & governance and planning contemporary issues; Economic reforms – Multinationals and liberalization.

#### Books Recommended:

1. Mishra, R.P. et al: Regional Development Planning in India, Vikas Publishers, New Delhi, 1978.
2. Mishra, R.P. (ed): Local Level Planning and Development, Sterling Publication New Delhi.
3. Diamond, D. (ed): Regional Disparities and Regional Policies, Program Press, Oxford, 1982.
4. Subrahmayam, K.N. (ed): Economic Development and Planning in India, Pub. New Delhi, 1985.
5. Sundaram, K.V., Mishra, R.P. and Rao, V.L.S.P.: Spatial Planning for a Tribal Region, inst. Of Development Studies, Mysore, 1971.
6. Regional Science Association: Regional Planning in India, IIT, Kharagpur, 1995.
7. Prasad, K.V.: Planning at the Grass Roots, Sterling Pub, Pvt. Ltd, New Delhi.
8. Chand, Mahesh and Puri, V.K.: Regional Planning in India, Allied, New Delhi, 1983.
9. Chandna, R.C.: Regional Planning: A comprehensive Text, Kalyani Publication, New Delhi.
10. Tiwari, R.C.: Geography of India, Prayag Pushtak Bhawan, Allahabad, 2008.
11. Tiwari, R.C.: Bharat ka Bhoogal, Prayag Pushtak Bhawan, Allahabad, 2008.
12. Mishra, R.P.: Regional Planning and National Development, Vikas Publications, New Delhi.

### SOES/GEOG/C005 LOCATIONAL ASPECTS (MAP) INDIA & WORLD

#### Paper V

Time: 2 Hrs

Internal Assessment : 40 Marks

End Semester Exam : 60 Marks

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



An outline map of India and world will be prepared by the students and they will have to mark locations on it. 20 locations will be inserted on it and one mark for each correct location.

Distribution of Marks:

- (A) i World- Preparing the outline Maps -10  
ii Inserting the given Locations - 20
- (B) i India - Preparing the outline Maps -10  
ii Inserting the given Locations - 20

### Course Contents:

**Physical** – Mountain and Range, Major Rivers, Deserts, Glacier and lakes, Grassland, Vegetation Social types, Straits, Island, Earthquake Zones/ Flood Zones/ Flood Plain, Volcanic, Climate zone/ Region Wind Pressure, Ocean Currents Eco - sensitive zone / National Park, Bio- diversity, National Park and Wildlife sanctuary, Hydropower Project, Major Water fall, Winds and their direction. latitude and longitude, Tides deltas, Mangroves.

**Cultural** – State and Capitals, Important Cities, Population, Rural-Urban, Tribal Areas, Planning Region.

**Economic** – Agricultural region/belts, Industrial region and complexes, Power plants, Hydro power projects, Atomic Plants, Important industries; Important ports and transport routes, Important resources. Fisheries banks; rail way line, Roads ;Sea roles; Air senates, Crops production area .

**Others** – Bio-diversity, National Parks, Environment, Ecology and contemporary issues; Animal distribution – Wild and Domestic.

### Books Recommended:

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

SOES/GEG/C006

### PRACTICAL I - (Cartography)

Paper VI

Time: 3 Hrs.

Internal Assessment : 40 Marks

End Semester Exam : 60 Marks

Note: The syllabus for practical is related to laboratory work on cartographic mapping. The practical exam will be of three hours duration. The division of marks in practical shall be as given below.

Laboratory work (Cartography) - 40

Session Record Work - 10



The laboratory work is divided into four unit. Two exercises are to be set from each unit with internal choice and candidates will be required to attempt four exercises in all. The cartographic mapping work examination will be of three hours duration in which exercises will be given on cartographic. All questions carry equal marks.

#### UNIT I

Mercator's, Polyconic, International, Gnomonic (Equatorial Aspect), Gall's, Stereographic, Interrupted Mollweide's and Interrupted Sinusoidal.

#### UNIT II

Slope analysis by Wentworth's, Smith's, Henry-Raiz's and Robinson's Methods; Analysis of relief characteristics from contour; Profile - Transverse, Longitudinal, Serial, Superimposed, Projected and Composite.

#### UNIT III

Morphometric analysis – Area-height, Altimetric frequency and Hypsometric curve; Drainage density; Stream order, Elongation; Circularity and Bifurcation ratio; Geomorphic Mapping.

#### UNIT IV

Interpretation of Topographical maps – Land use and settlements; Topographical mapping; Geological Cross - Section Drawing.

**Note:** Examination - Departmental Committee appointed by HoD for University Campuses. External Examiners will be Appointed by the University for Affiliated Colleges.

#### Books Recommended:

1. Barrett, E.C. & Curtis, L.F.: Introduction to Environmental Remote Sensing.
2. Dickinson, G.O.: Maps and Aerial Photographs.
3. Smith, H.T.V.: Aerial Photographs and their Applications.
4. Deekshatula, B.L. & Rajani, Y.S.: Remote Sensing.
5. Davis, P.: Data Description and Presentation.
6. Garnett, A.: Geographical Interpretation of Topographical Maps.
7. Mishra, R.P. & Ramesh, A.: Fundamentals of Cartography.
8. Raja, Moonis: Source of Socio-Economic Data.
9. Sharma, J.P.: Practical Geography (Hindi).

## II<sup>nd</sup> Semester

Course Code	Paper No.	Title of Course/ Paper	Marks		
			Internal Assessment	End Semester Exam	Credit
SOES/GEG/C007	VII	Geography of the Himalaya	40	60	03
SOES/GEG/C008	VIII	Climatology	40	60	03
SOES/GEG/C009	IX	Geo-Environmental studies	40	60	03
SOES/GEG/C010	X	Remote Sensing and GIS	40	60	03
SOES/GEG/C011	XI	Population Geography	40	60	03
SOES/GEG/C012	XII	Practical (Quantitative Techniques)	40	60	03
		Total	240	360	18
Self Study Course					
SOES/GEG/SS01	SS-01	Assignment Based Seminar (Qualifying)	40	60	03

**SOES/GEG/C007**

### **GEOGRAPHY OF THE HIMALAYA**

Paper VII

Time: 2 Hrs.

Internal Assessment : 40 Marks


End Semester Exam : 60 Marks

Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.

#### **UNIT I**

Geo-physical identity, Origin of Himalaya and its structure; Himalaya as regional entity; Geo-political issues; Cultural Appraisal; Himalayan people and tribes; Geo-sensitivity of Himalaya.;Future of Himalaya.

#### **UNIT II**

  
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Physiographic Structure; Landforms, Drainage System; Himalaya as water tower; Glaciers; Lakes; Passes; Climate; Natural Vegetation; Natural Hazards; Geo-Ecological Problems of Himalaya created by anthropogenic activities.

### UNIT III

Demography and Economy – Distribution, density and growth of population; Migration; Urbanization; Rural and Urban Population; Agriculture; Industry; Animal Husbandry; Horticulture; Tourism; Developing problems of Himalaya ; Power projects.

### UNIT IV

Geographical account of Western, Central and Eastern Himalaya; Regional analysis of Kashmir Valley ; Ladakh ; Lahul and Spiti; Kathmandu Valley and Teesta Valley; Mountain Development Planning and Policy.

### Books Recommende:

1. Lal, J.S. & Moddie: The Himalaya – Aspect of Change A.D. (ed).
2. Bose, S.C.: Land and people of the Himalaya.
3. Singh, O.P. (ed): The Himalaya – Nature, Man and Culture.
4. Joshi, S.C. and Others: Kumaun Himalaya.
5. Nityanand and Kumar, K.: The Holy Himalaya – Geographical Interpretation of Garhwal Himalaya.
6. Kharkwal, S.C.: Uttarakhandm – Physio-Culture Complex.
7. Maithani, D.D.: Central Himalaya: Ecology, Environmental Resources & Development.
8. Rawat, M.S.S. (ed): Central Himalaya- Environment Development Vol. I & II.
9. Valdiya, K.S. (ed): Kumaun: Land and People (1988).
10. Bhatt, H.P. & Bhatt Sangita: Environmetal Dimensions of Rural Settlements in the Himalaya in 1993.

SOES/GEG/C008

### CLIMATOLOGY

#### Paper VIII

Time: 2 Hrs.

Internal Assessment : 40 Marks

End Semester Exam : 60 Marks

**Note:** The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt Four questions in all. Answer should be precise. All questions carry equal marks.

### UNIT I



Meaning, scope and development of Climatology; Atmospheric Equilibrium; Adiabatic Temperature Change; Jet Stream; El-Nino; La-Nina; Walker Circulation; Precipitation and Humidity.

#### UNIT II

Air Masses – Origin, growth, classification and distribution; Horizontal and vertical motion of winds; Fronts and Fronts Genesis; Cyclones and Anti- cyclones; Temperate and Tropical Cyclones.

#### UNIT III

Climate Classification of Koppen and Thornthwaite; Major climate types; Weather analysis – weather forecasting- methods, types and accuracy; Weather and human behavior; Weather modification ; Atmospheric hazards- Cloud Bursts.

#### UNIT IV

Climatic Changes – Definition and detection; Tree rings; Solar variability; Human impact on global climate; Global Warming; Artificial climate and acid precipitation.

#### Books Recommended:

1. Chorley, R.J. and Barry, R.G.: Atmosphere, Weather and Climate Methuen & Co. Ltd. London, 1995.
2. Critchfield, H.J.: General Climatology, Prentice Hall of India, New Delhi, 2002.
3. Hiddore, J.J.: Global Environment Change, Prentice Hall, New Jersey, 1996.
4. Lockwood, J.G.: World Climatology, Elbs and Edward Arnold (Pub.) Ltd., 1979.
5. Miller, A. et al: Elements of Meteorology, Merrill and Columbus.
6. Oliver, J.E. & Hiddore J.J.: Climatology: An Atmosphere Science, Pearson Education, India, 2003.
7. Thomson, R.D. and Perry, A.: Applied Climatology, Routledge, London and New York, 1997.
8. Trewartha, G.T.: An introduction to climate, McGraw Hill Series in Geography, 1954.
9. Lal, D.S.: Climatology, Sharda Pushtak Bhawan, Allahabad.
10. Singh, Savindra: Climatology, Prayag Pushtak Bhawan, Allahabad, 2005.
11. Lal, D.S.: Jalvayu Vigyan, Sharda Pushtak Bhawan, Allahabad.
12. Singh, Savindra: Jalvayu Vigyan, Prayag Pushtak Bhawan, Allahabad.

SOES/GEG/C009

#### GEO-ENVIRONMENTAL STUDIES

Paper – IX

Time: 2 Hrs.

Internal Assessment : 40 Marks

End Semester Exam : 60 Marks

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Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt Four questions in all. Answer should be precise. All questions carry equal marks.

#### UNIT I

Meaning and scope of Environmental Geography; Basic concept of Environmental Geography; Component and types of environment; Ecology; Principles, types and ecological succession; Man-environment relationship.

#### UNIT II

Ecosystem - Concept and components; Trophic levels; Food Chain and Food Webs; Energy flow in the ecosystem; Ecosystem stability, and productivity.

#### UNIT III

Environmental degradation; Environmental Pollution (Air, Water and Solid Waste); Environmental Problems- Global Warming, Ozone depletion and Green House effect; Acid rain and climate change.

#### UNIT IV

Environmental Management: Concepts, approaches and management strategies; Environmental dimension in planning and sustainable development; Limits to growth - Rio Summit, Kyoto Protocol ; Environment impact assessment; National environment policy and programs .

#### Books Recommended:

1. Sing. L.R. et al.: Environmental Management, Allahabad Geographical Society, Allahabad.
2. National Academy of Sciences: Understanding Climate Changes, Washington, D.C.
3. Furley, P.A. and Neway, W.W.: Man and the Biosphere, Butterworth, London.
4. Arvil, R.: Man and Environment, Penguin.
5. Bennet, R.J. and Chorley, R.J.: Environmental System- Philosophy, Analysis and Control, Methuen, London.
6. Singh, Savindra: Environmental Geography, Prayag Pushtak Bhawan, Allahabad.
7. Detwiler, T.R.: Man's impact on the Environment, McGraw Hill, New York.
8. Sing, Savindra: Paryavaran Bhoogal, Prayag Pushtak Bhawan, Allahabad.
9. Odum, E.P.: Fundamentals of Ecology, W.B. Saunders Co. Philadelphia, 1971.
10. Mather, A.S. and Chapman, K.: Environmental Resources, Longman Group Ltd. U.K., 1995.



Time: 2 Hrs.

Internal Assessment : 40 Marks

End Semester Exam : 60 Marks

Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All questions carry equal marks.

#### UNIT I

Definition, process and stages of Remote Sensing; Energy sources and radiation; EMR; Energy interaction with atmosphere and earth surface principles of micro wave Remote Sensing. Types of R.S. Platforms; Satellites and sensor; Sensor resolution, Digital image and satellite imagery; Elements of visual image interpretation; Digital image processing techniques.

#### UNIT II

Definition, history types; classification and planning mission of A.P.; Basic geometric characteristics- scale, height, overlap, mosaic, resolution, stereoscopic coverage; Fundamental concept of Photogrammetry, Orientation, relief displacement; stereoscopic, 3D viewing, Uses of A.P. in landform mapping and urban planning.

#### UNIT III

Definition, concept, scope and components of GIS; Data and Information; Geo-referencing and rectification; Data inputting methods and GPS.

Data base, type of data ; Data models in GIS; Data integration; Geospatial data analysis.

#### UNIT IV

Computer Cartography and mapping in digital image; Internal GIS, Web GIS, DTM, Recent trends of GIS, Emerging branches of GIS Science. Application of Remote Sensing and GIS in watershed management, weather information, disaster forecast and geo-information.

#### Books Recommended:

1. Sabine, F.F.: Remote Sensing- Principles & Interpretation.
2. Lillesand, R.M.: Remote Sensing and Image Interpretation Kiefer R.W.
3. Chauniyal, D.D.: Remote Sensing and GIS (Hindi).
4. Jensen, J.R.: Introductory Digital Image Processing- A Remote Sensing Perspective.
5. Demer, M.N.: Fundamentals of Geographic Information System.
6. Martin, D.S.: Geographic Information System- Socio-Economic Applications.
7. Aronoff, S.: Principles of Geographical Information Systems for Land Resource Assessment.
8. Aronoff, S.: Geographic Information System- A Management Perspective.
9. Bontham Carter, G.F.: Geographic Information System for Geoscientists.
10. Jones, C.: Geographical Information System & Computer Cartography.
11. Ayery, T.E.: Introduction to Aerial Photographs.
12. Pratt, W.K.: Digital Image Processing, John Wiley & Sons New York (1995).



Head

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SOES/GEG/C011

POPULATION GEOGRAPHY

Paper – XI

Time: 2 Hrs.

Internal Assessment: 40 Marks

End Semester Exam: 60 Marks

Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four question in all. Answer should be precise. All question carry equal marks.

UNIT I

Nature, scope and significance of Population Geography and its relation with demography, Relevance of Population studies in Geography; Nature and sources of population data and maps; Methods and approaches to population study; Recent development in Population Geography; Population and development planning.

UNIT II

Population growth distribution and density; World patterns and their determinants; Concepts of under, over and optimum Population; Population composition - Age, sex, literacy, occupational structure and gender issues; Population growth in the context of manpower and employment.

UNIT III

Population Dynamics; Measurement of fertility and mortality; Migration- causes, types, national and International pattern; Push and Pull factors; Mobility Transition; Rural and Urban dimensions; Globalization and labour mobility; Demographic regions of India; attributes, structure and characteristics

UNIT IV

Concept of Human Resource and Management; Population resource regions; Population planning and policies in under-developed and developed countries with special reference to Japan and India, Human development index; National Population Policy.

Books Recommended:

1. Chandna, R.C.: A Geography of Population; Concept, Determinants and Patterns, Kalyani Pub. New Delhi, 2000.
2. Clarke, John I.: Population Ecology, Pergamon Press, Oxford 1973.
3. Crook, Nigael: Principles of Population and Development, Pergamon Press New York 1997,



4. Garnle, R.B.J.; Geography of Population, Longman, London 1970.
5. Srinivasan, K. & Vlassoff M. ; Population Development Nexus in India: Challenges for the Millennium, Tata Mc Graw Hill, New Delhi, 2001.
6. Srinivasan, K.; Demographic Techniques and Applications, Sage Pub. New Delhi, 1998.
7. Sundaram, K.V. and Nangia, Sudesh (ed.): Population Geography, Heritage Pub. Delhi, 1986.
8. Woods, R.; Population Analysis in Geography, London 1979.
9. Zelinsky, Wilbur: A Prologue to Population Geography, Prentice Hall, 1966.
10. Clarke, J.I.; Population Geography, Pergamon. Oxford, 1972.

**SOES/GEG/C012**

**PRACTICAL-II (Quantitative Techniques)**

Paper XII

Time: 3 Hrs.

Internal Assessment : 40 Marks

End Semester Exam : 60 Marks

The syllabus for practical is related to laboratory work on quantitative techniques and mapping. Eight questions will be set selecting at least two questions from each unit. Candidate will have to attempt four questions selecting one question from each unit. It will be of three hour duration.

Distribution of Marks:

Laboratory Work	-40
Sessional Record	-10
Viva Voce	-10

**UNIT I**

Types of spatial data- Line, area and point; Levels of their measurement- Nominal, ordinal, interval and ratio; Diagrammatic representation of data circle, spheres, block piling; Erograph (Crop cycle and activity pattern); Climatograph.

**UNIT II**





Nearest Neighbour analysis (NNA); Gini's Co-efficient; Rank size rule; Location quotient; Lorenz curve; Compositing the indices of Nodal accessibility.

### **UNIT III**

Elements of Maps: Generalization, Symbolization and classification; Techniques of Mapping-dot, choropleth and isopleths, Stigmenbauer's & Sten de Geer's method; Choropleth –simple and asymmetiic stepped statistical surface, class less choropleth, errors and their elimination.

### **UNIT IV**

Correlation by spearman's and Karl Pearson's method; Scatter diagram; Simple linear regression analysis; Construction of regression line; Plotting of absolute and relative location; Explanation of residuals plotted on the maps.

**Note:** Examination - Departmental Committee appointed by HoD for University Campuses. External Examiners will be Appointed by the University for Affiliated Colleges

#### **Books Recommended:**

1. Barrett, E.C. & Courtis, L.F. : Introduction to Environmental Remote Sensing.
2. Dickinson, G.O.: Maps and aerial Photographs.
3. Smith, H.T.V.: Aerial photographs and their Applications.
4. Deekshatula, B.L. & Rajani, Y.S.: Remote Sensing.
5. Davis, P.: Data Description and Presentation.
6. Garnett, A.: Geographical Interpretation of Topographical Maps.
7. Mishra, R.P. & Ramesh A.: Fundamentals of Cartography.
8. Raja Moonis: Source of Socio-Economic Data.
9. Sharma, J.P. : Practical Geography (Hindi)
10. Singh, R.L. : Practical Geography (English/Hindi)
11. Lillesand, T.M. and Keifer, R.W.: Remote Sensing and Image Interpretation, John Wiley and Sons, New York, 1999.
12. Jenson, J.R.: Introduction to Digital Image Processing, Prentice Hall, Englewood Cliffs, NJ.
13. Hord, R.M.: Digital Image Processing, of Remotely Sensed Data, Academic Press, New York, 1989.
14. Pratt, W.K.: Digital Image Processing, John Wiley and Sons, New York, 1995.
15. Robinson, A.H. et al : Elements of cartography, John Wiley and Sons, New York.

### **III<sup>rd</sup> Semester**

Course Code	Paper	Title of Course/ Paper	Marks
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	No.		Internal Assessment	End Semester Exam	Credit
SOES/GEOG/C013	XIII	Research techniques and Methodology	40	60	03
SOES/GEOG/C014	XIV	Hazards and Disaster Management	40	60	03
SOES/GEOG/C015	XV	Practical III (Remote Sensing, GIS and Field Study Tour)	40	60	03
		Total	120	180	09
Elective Courses					
		Any Three of the following elective (optional) course			
SOES/GEOG/E001	XVI (a)	Geography of Water Resource	40	60	03
SOES/GEOG/E002	XVI (b)	Urban Geography	40	60	03
SOES/GEOG/E003	XVI (c)	Regional Planning and Development	40	60	03
SOES/GEOG/E004	XVI (d)	Medical Geography	40	60	03
SOES/GEOG/E005	XVI (e)	Cultural Geography	40	60	03
SOES/GEOG/E006	XVI (f)	Political Geography	40	60	03
Self Study Course					
(SOES/GEOG/SS02 ;	SS 02	Transport Geography	40	60	03
		Total	120	180	09

**SOES/GEOG/C013**

**RESEARCH TECHNIQUES AND METHODOLOGY**

**Paper-XIII**

Time 2 Hrs.

Internal Assessment: 40 Marks

End Semester Exam: 60 Marks

Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.

**UNIT I**



Concept & significance of research in Geography; Nature, objective and basis of research; Types of research, approaches and methods; Research problem selection; Techniques and research process.

## **UNIT II**

Research Design-meaning, need, features and types

Sampling: methods and steps; Design of spatial sampling; Survey and experiments; Data collection methods –primary and secondary data, schedule ,questionnaire and observation.

## **UNIT III**

Hypothesis: meaning, characteristic importance and formulation; Testing of Hypothesis parametric (standard) and non parametric; Review of literature; Bibliography and Case Study.

## **UNIT IV**

Application of Remote Sensing and GIS in research; Arrangements and analysis of data and map; Quantitative and qualitative interpretations; writing of research report / paper and dissertation; Farming of pilot and projects.

### **Books Recommended:**

1. Bhatt H. P. and Bansal S.C. (2012): Research methodology (in Hindi), Meenakshi Prakashan, Meerut.
2. Ahuja, R. (2001) : Research Methods, Rwaat methodology, Excel Books, New Delhi.
3. Bhattacharya, D.K. (2005) : Research Methodology, Excel Books, New Delhi.
4. Blackburn, J. And Holland, J. (eds.) (1998) : Who Changes? Institutionalizing participation in Development IT Publications, London.
5. Blaxter, L.; Hughes, C. and Tight, M.(1996) : How to Research. Open University Press, Buckingham.
6. Crang, Mike 1999. Cultural Geography. Routledge, London.
7. Daniels, P., Bradshaw, M., et al. (2000) : Human Geography: Issue for the 21<sup>st</sup> Century. Prentice Hall, London, and Perason Publishers., Singapore, Indian reprint, 2003.
8. Denzin, N.K. and Lincoln, Y.S., (eds.) (2000): handbook of Qualitative Research thousand Oaks C.A. Sage Publications.
9. Dikshit, R.D. (2003): The Art and Science Of Georaphy: Integrated Readings. Prentice-Hall of India, New Delhi.
10. Dorling, D. And Simpson, L.(eds.) (1999): Statistics in Society . Edward Arnold, London.
11. Fisher, P. And Unwin, D., (eds.) (2002): Virtual Reality in Geography, Taylor and Francis, London.



12. Flowerdew, R. and Martin, D. (eds.) (1997): Methods in Human Geography. A Guide for Students Doing a Research Project. Longman, Harlow.
13. Hay, I. (ed.) (2000): Qualitative research Methods in Human Geography. Oxford University Press, New York.
14. Henn, M., Mark W., and Nick F. (2006): A short introduction to Social Research, Vistaar Publications, New Delhi.
15. Eyles J. And Smith D.M. (1988): Qualitative Methods in Human Geography, Polity Press, Dales Brewering Cambridge.
16. Kitchin, R. And Tate, N., (2001): Conducting Research into Human geography, Theory, Methodology and Practice. Prentice-hall, London.
17. Har Prasad: Research Methodology and Techniques in Geography, Rawat Publications, Jaipur.

SOES/GEOG/C014

**HAZARDS AND DISASTER MANAGEMENT**

**Paper-XVI**

Time 2 Hrs.

Internal Assessment: 40 Marks

End Semester Exam: 60 marks

Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All questions carry equal marks.

**UNIT I**

Meaning and concept of Hazards and Disaster; Type of Natural and manmade Hazards; Elements of disasters; Magnitude determinants and scale.

**UNIT II**

Natural Hazards – Typology; Regional dimension of Hazards; Occurrence and trends; Methods of identifying hazard prone regions; Major terrestrial disaster- seismic disasters, volcanic disaster, landslides and tsunamic disasters; Reasons of increasing frequency of disasters.

**UNIT III**

Disaster Management: Concept, stage of disaster management; Pre-disaster stage-disaster preparedness, disaster research, disaster prediction and disaster warning; Methods and levels of



preparedness; Disaster mitigation and disaster prevention; Post-disaster stage-rescue and relief work; Remedial measures; Long term disaster planning.

#### **UNIT IV**

Different types of disaster and hazard prone areas in India; Disaster management policies and approaches; Major disasters in India and their management; Response to disasters, government, non-government; Community and individual; Mitigation and Management; Appraisal of government programs/institution of Disaster Management; Significance of Remote Sensing and GIS in planning to the context of Disaster Management.

#### **Books Recommended:**

1. Tianch, L.: Landslide Hazard Mapping and Management in China, ICIMOD. Nepal, 1996
2. Valdiya, K.S.: Environmental Geography, Tata McGraw Hill Co. Ltd. New Delhi, 1987
3. Zereba, Q. And Mance V.: Landslides and their Control; Elsevier Amsterdam, 1969.
4. White, G.F.: (ed.): Natural Hards: Local, National, Global, Oxford University Press, London, 1974.
5. Gupta, H.K.: Dams and Earthquakes, Elsevier, Amsterdam, 1976.
6. Burton, I. Et al: The Environment as Hazards, Spinger Verlay, New York, 1950.
7. Bolt, B.A. et ai. (ed.): Geological Hazards, Springer Verlay, New York, 1950.
8. Enbliton, C.: Natural Hazards and Global Change I.T.C., Journal, 1989.
9. Singh, Savindra: Environmental Geography (Eng. /Hindi).
10. Petak, W.J. & Atkinson, A.D.: Natural Hazards Risk Assessment and Public Policy, Springer-Verlay, New York, 1982.

### **PRACTICAL-III**

**SOES/GEOG/C015**

#### **PRACTICAL III (Remote Sensing, GIS and Field Study Tour)**

##### **Paper-XVI**

Time: 3 Hrs.

Internal Assessment: 40 Marks  
End Semester Exam: 60 Marks

Note: The Syllabi for practical is divided into two sections, Section- 'A' is related to laboratory work and section 'B' is related to field work (Geographical Tour). The Laboratory work is divided into four units. Eight questions will be set selecting at least two question from each unit. The division of marks in practical is given below:

**Note:** Examination Departmental Committee Appointed by HoD for University Campuses.  
External Examiners will be Appointed by the University for Affiliated Colleges.



Laboratory Work	:	M.M. 20
Field Work	:	M.M. 30
Sessional Records	:	M.M. 05
Viva-voce	:	M.M. 05

## SECTION A – LABORATORY WORK

### UNIT I

Basic of Computer; Concept of maps; Coordinates System; Projection (WGS84 and Everest); Types of files, Export/Import file; Layer Stacking of Multispectral Imagery.

### UNIT II

Concept of Geo-referencing (maps to image, image to image), sub-setting with the help of AOI layer; Mosaicing; Radiometric and Geometric errors and correction; Image classification.

### UNIT III

Spatial data integration; Digitization (Point, Line, Polygon); Non Spatial Data Integration; Editing of Spatial and Non-Spatial data; Building Topology.

### UNIT IV

Basic of GPS and Computer Cartography & Mapping.

## SECTION B – FIELD WORK

The field study is compulsory for all students, those who will not take part, will not be given any mark for this. The field study work is designed to acquaint the students that, "Geography is an observational science" and field work is one of the important methodologies in geographical studies.

The students are to be sensitized about pre field work preparation, conduct of field work, post field work and report writing.

Filed study tour to provide traverses across and macro regions of the country specially problem areas, areas in news and needs will be arranged of about two week duration. Student will be trained in field work collection of data, mapping, sketching and collection of socio-economic data etc. using observational and interview method etc.



The report will involve statement of objective, selection of area (with reasons), method of field study data collection, analysis of collection data/information etc. in which minimum 5 maps and diagrams and 50 pages of write up is necessary.

**FIELD STUDY GUIDE (TEACHER):-** Will submit a precise report (1 or 2 pages) of field study work with the list of student present/attended the field study to the HOD concern.

**Books Recommended:**

1. Jenson, J.R.: Introduction to Digital Image Processing, Prentice Hall, Englewood Cliffs, NJ.
2. Pratt, W.K.: Digital Image Processing, John Wiley & Sons, New York, 1995.
3. Hord, R.M.: Digital Image Processing of Remotely sensed data, Academic Press, New York, 1989.
4. Nag, P.: Thematic cartography and Remote Sensing Concept, Publishing House, New Delhi.
5. Blackwell, B.: Statistics in Geography, Basil Blackwell Ltd., 1988.
6. Sinha, P.K. & Sinha, P.: Computer Fundamentals, 3<sup>rd</sup> Ed. B.P.B. Publishing.
7. Lo, C.P.: Applied Remote Sensing, Longman Scientific and Technical, Harlow, ESSEX.
8. PEUQUET, D.J. & Marble, D.F.: Introductory Readings in Geographic Information Systems, Taylor & Francis, Washington, 1990.
9. Spurr, R.: Photogrammetry and Photo Interpretation, The Rolland Press, Co. London, 1960.
10. Cole, J.P. and King, C.A.M.: Quantitative Geography, John Wiley, London, 1968.

**SOES/GEG/E001**

**GEOGRAPHY OF WATER RESOURCE**

**Paper-XVI (a)**

Time 2 Hrs.

Internal Assessment: 40 Marks

End Semester Exam: 60 marks

Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.

  
**Head  
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Srinagar (Uttarakhand)**



## UNIT 1

Water as a focus of geographical interest; Significance and scope of water resources; The Hydrological Cycle; Types of water resources; factors affecting water resources- physical factors, climatic factors and geological factors

## UNIT 2

Groundwater and its occurrence; Utilization of water resources; Problems of groundwater utilization, Groundwater quality; Groundwater depletion; Groundwater pollution.

## UNIT 3

Water resources of Himalaya; Major river systems; Water springs of Himalaya; Water conservation and advance and traditional techniques; Water budget and water use of Himalaya.

## UNIT 4

Springs types of springs, spring distribution in Uttarakhand, Water budget; Rainwater Harvesting techniques in Uttarakhand ; Success stories of water management in Uttarakhand.

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### Books Recommended:

1. Bouwer, H. : Ground Water Hydrology, McGraw Hill Book Co., New York, 1978.
2. Karanth, K.R. : groundwater assessment: Development and Management, Tata McGraw Hill New Delhi, 1987.
3. Rao, K.L. : India's Water Wealth, Orient Longman, New Delhi, 1979.
4. Murthy, J.V.S.: Watershed Management in India, Rural Electrification Corporation, New Delhi.
5. Reddy, R.J.: The textbook of hydrology, Laxmi Publication, New Delhi, 1999.
6. Charlu, T.G.K. and Dutt, D.K.: Ground Water Development in India, Rural Electrification Corporation, New Delhi, 1982.
7. Singh, R.A. and Singh S.R.: Water Management: Principles and Practices, Tara Publishers Varanasi.
8. Tideman, E.M.: Watershed Management: Guidelines for Indian Conditions, Omega, New Delhi.
9. Sain, S.K. : The food problem in India, Birla Institute of Scientific Research, Economic Research Division, New Delhi.
10. Sokolar, A.A. and Chapman, T.B.(ed.): Methods for Water Balance Computations: An International Guide for Research & Practice; The UNESCO Press, Paris, 1974.
11. Chorley, R.J.: Introduction to Physical Hydrology, Methuen, London, 1967.

12. Jones, J.A.: Global Hydrology: Processes, Resources and Water Management, London, 1997.

SOES/GEG/E002

**URBAN GEOGRAPHY**

Paper-XVI (b)

Time 2 Hrs.

Internal Assessment: 40 Marks  
End Semester Exam: 60 marks

Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.

**UNIT I**

Meaning, scope and approaches of Urban Geography: Changing paradigms of Urban Geography; Development of Urban Geography in India; Theories of urban origin: early Urban Hearths; Urbanization cycle; Trends of urbanization-World and India, historical and spatial perspective.

**UNIT II**

Urban morphology; Land use models and city growth-concentric zone; Urban economic base; Sector and multiple nuclei models; Structure and characteristics of Central Business District, Functional Classification; Nelson – Steigenga Webb and double index method; Rank size rule and applicability.

**UNIT III**

Centrality and hierarchy of towns; Central Place theory of Christaller Concept of City Region, Rural- Urban Fringe and its delimitation; Satellite Towns. suburbs conurbation; Urban problems; Urban poverty, slums, urban renewal and sprawl, solid waste.

**UNIT IV**

National urban policy and urban land use planning; Concept of Garden City and New Town; Master Plans: A case study of Nainital and Dehradun; Planned cities – Jaipur; Chandigarh and New Tehri; Urban development planning in India – Policies programs and implication; Delhi & NCA; Globalization and urban planning.

**Books Recommended:**



1. Singh, L.S. and Goilledge, R.G. : Cities, Space and Behaviour: Elements of Urban Geography, Prentice Hall, New Delhi.
2. Mishra, H.N. (ed.): Urban Geography, Heritage.
3. Northam, R.M. : Urban Geography, John Wiley, New York.
4. Short, R.J.: An Introduction to Urban Geography, Routledge and Kegan Paul, London, 1984.
5. Johnston, R.J.: City and Society, Hutchinson, London.
6. Herbert, D.T.: Urban Geography: A Social Perspective, David and Charles Newton And Abbot, 1977.
7. Johnston, J.H.: Urban Geography: An Introductory Analysis, Pergamon Press, London, 1972.
8. Singh, R.L.: Urban Geography in Development Countries, National Geographical Society of India, Varanasi.
9. Berry, B.J.L. and Harton, F.F.: Geographic Perspectives on Urban System, Prentice Hall, Englewood Cliffs, New Jersey, 1970.
10. Ramchandran, R.: Urbanization and Urban System of India, Oxford, New Delhi, 1993.
11. Knox, P.L. and Taylor, P.J.: World Cities in a World System, Cambridge University Press, UK, 1995.
12. Harvey, D.: Social Justice and the City, Arnold, 1973.

SOES/GEG/E003

**REGIONAL PLANNING AND DEVELOPMENT**

**Paper – XVI (c)**

**Time: 2 Hrs.**

Internal Assessment: 40 Marks

End Semester Exam: 60 Marks

Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.

**UNIT I**

Concept, scope and types of Planning, Regional Planning-its meaning and needs; Approaches to Regional Planning ; Historical development of Regional Planning, Planning Regions of the India .

#### UNIT II

Methodology and techniques of Regional Planning; Analytical techniques and procedural techniques; Principles of regionalization; Planning Processes- sectoral and spatial planning; Short-term and long term perspective planning; Multi- regional, multi- level and decentralize planning.

#### UNIT III

Regional development strategies: Identification of planning region; Delineation and regions; Regional Planning strategies for backward areas, hill areas, tribal areas; Case studies of planning regions; Problems and prospects of Himalayan region.

#### UNIT IV

Spatial inequalities and regional imbalances in India; Problems of planning regions, indicators and level of regional development; Dilemma of development of problem areas, Regional Planning & development in India; Regional Planning and development strategies in the 21<sup>st</sup> century; NITI Aayog

#### Books Recommended:

1. Kuhlinski A.R. (ed.): Growth Poles and Growth Centers in Regional Planning, Mouton, The Hague , 1972.
2. Misra, R.P. et al: Regional Planning Concepts, Techniques and Policies, University of Mysore, Mysore, 1969.
3. Misra, R.P. et. At: Multi Level Planning, Heritage Publishers, Delhi, 1930.
4. Hall, Peter: Urban and Regional Planning, Penguin Books ins. New York.
5. Glasson John: Regional Planning , Hutchison, London.
6. Misra, R.P.: Development Issues of Our Time, Concepts Pub. Co., New Delhi.

**SOES/GEG/E004**

**Medical Geography**

**Time: 2 Hrs**

**PAPER XVI (d)**

Internal assessment: 40 Marks

End Semester Exams: 60 Marks



**Note:** The Paper consists of four units. Two Questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.

### UNIT I

Definition, scope and significance, of Medical Geography; Concept and its relation with other branches; Sequential development of Medical Geography.

### UNIT II

Geographical factors affecting human health and diseases; Physical Factors: relief, climate, soil, vegetation and water; Social factors: population, density, literacy, social customs and poverty; Economic Factors: food security, nutrition, occupation structure, quality of life, income; Environmental Factors: urbanization, congestion, pollution and waste disposal.

### UNIT III

Classification of diseases; Communicable and non-communicable; Endemic areas and pandemic areas; Occupational and deficiency diseases; Pattern of world distribution of major disease.

### UNIT IV

Medical facilities, health centers and their problems, Medical facilities and population ratio; Government health schemes and programs in Uttarakhand; Case study of health status of any district of Uttarakhand.

#### Suggested Readings

1. Ashraf, S.W.A., Agriculture, Environment and Health, Concept Pub., New Delhi.
2. Banerjee, B. and Hazra J., Geo-Ecology of Cholera in West Bengal, Univ of Calcutta, 1980.
3. Chatterjee Mera, Implementing Health Policy, Centre for Policy Research, New Delhi, 1988.
4. Cliff, A. & Stewart, L., (eds.), Atlas of Diseases distribution, Basil Blackwell, Oxford, 1989.
5. Hazra, J., (eds.), Health Care Planning in Developing Centres, Univ of Calcutta, 1997.
6. Learmonth, A.T.A., Patterns of Diseases and Hunger – A Study in Medical Geography, David & Charles, Victoria, 1978.
7. May, J.M., Ecology and Human Diseases, M.D. Pub. New York, 1959.
8. May, J.M., Studies in Disease Ecology, Hafner Pub. New York, 1961.
9. Mc. Glashan, N.D., Medical Geography, Methuen, London, 1972.
10. Misra, R.P., Medical Geography of India, National Book. Inst, India, New Delhi.
11. Rais, A and Learmonth, A.T.A., Geomorphic aspect of health and diseases in India.
12. Stamp, L.D., The Geography of Life and Death, Cornell Univ, Ithaca, 1964.

SOES/GEG/E005

CULTURAL GEOGRAPHY

Paper-XVI (e)



**Time : 2 Hrs.**

**Internal Assessment: 40 Marks**

**End Semester Exam: 60 Marks**

Note. The paper consists of four units. Two questions will be set from each unit . The candidate will be required to attempt four question in all. Answer should be precise. All question carry equal marks.

### UNIT I

Concept of Culture and Culture as indicator of regional identity; The study of culture in Geography, nature, scope concept and significance of Cultural Geography, Development of Cultural Geography, Cultural Landscape; Culturel process, Cultural diffusion.

### Unit II

Origin and dispersal of man; Brief cultural history; Migration processes and cultural development –prehistoric primitive agrarian; Industrial revolution; Role of technological Change in cultural development; Cultural Hearths, Cultural Ecology.

### Unit III

Human Races – Origin and dispersal and related theories; Type and distribution;Major ethnic and racial and linguistic groups; Resource and culture–Resource extraction and conversion;Processes and elements of cultural transformation.Cultural segregation and assimilation; Cultural unity and distribution.

### Unit IV

Cultural realm – Monsoon Asian – African, Mediterranean, Western European, Anglo American, Latin American. Cultural Region –Indo-Aryan, Dravidian, Arabian Islamic ,Anglo American costal , Brazilian, Mexican, English - European

### **Book Recommended .**

1. Spencer, J.E &thomses, W.I : Introducing cultural Geography .
2. Rostlund, F. Outline of cultural Geography.
3. Wegner,P.J&Mikesell, M.W[eds] Reading cultural Geography .
4. 4Frezir, D. E. :Rece and cultural contact in the modern word.
5. Sopher, D.F. : Geography of Religions.
6. Carter G.F. : Man and the land a cultural Geography.
7. Dhora, F.E. &Sommers L.M. [eds] Cultural Geography selected Readings.
8. Brood,J.M. : Geography of mankind .
9. Jain,J.K. &Vohara, D.M.: Sanaskritbhoogol (hindi).
10. Prasad, Gayatri: Sanskrit bhoogol (hindi) .



**Paper-XVI ( f)****Time 2 Hrs.**

Internal Assessment: 40 Marks

End Semester Exam: 60 Marks

Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt 04 question in all. Answer should be precise all questions carry equal marks.

UNIT I

Meaning, scope, approaches of study and recent development in Political Geography, Concept of nation, state and spatial factors of state; Buffer state and core area; Concept of Geostrategy Geostrategic ideas of Mackinder and Spykman.

UNIT II

Capital City, types of capitals. Boundaries and frontiers and their laws. Implication in the current geopolitical context; Geo Political significance of Indian Ocean NATO, SAARC. OPEC and ASEAN

UNIT III

World Geopolitics in changing perspective – colonization, decolonization, federalism, Strategic basics and military alliances; Non aligned movement, Water disputes and terrorism, Indias position in World politics.

UNITIV

Concept, nature and scope of Electoral Geography. Parliamentary constituencies in India and legislative allotment of Uttarakhand. National and regional political parties and voting behaviors in India and Uttarakhand; Changing political map of india. Role and future of regional parties in Uttarakhand .Recent controversies about re-delineation of constituencies in Uttarakhand and its effects.

**Books Recommended:**

1. Dikshit,R.D.: Political Geography-a Contemporary Perspective, Tata MaGraw Hill Pub, New Delhi, 1996.
2. Dwivedi,R.L.: Political Geography, Chaitanya Publication Allahabad.
3. Dikshit R.D.: Political Geography- A Century of Progress, sage. New Delhi, 1999.
4. Short,J.R.: An Introduction to Political Geography, Routledge, London,1982.
5. Bergman,E.F.: Modern Political Geography, WMC Brown. CO Dobuque, Iowa, 1975.
6. Nijman,A.J.: The Geopolitics of Power and Conflict, Belhaven Press, 1993.
7. Jonston, R.J.: Geography and the state, Macmillan.
8. Norrls R.E.: and Haring, L.L.: Political Geography, Bell and Hawell, 1980.
9. Dikshit, R.D.: Rajnitik Bhoogol, Tata MaGraw Hill, New Delhi.

10. Dikshit, S.K.: Rajnitik Bhoogol, Vasundhara Prakashan Gorakhpur.  
11. Sinha, Manorma: Political Geography, Horizen Publication, Allahabad.

SOES/GEG/SS02

**TRANSPORT GEOGRAPHY**

**(Qualifying)**

**Time 2 Hrs.**

Internal Assessment: 40 Marks

End Semester Exam: 60 Marks

Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise all questions carry equal marks.

**UNIT 1**

Definition and scope of Transport Geography; Evolution of transportation; Characteristics and significance of different means of transportation.

**UNIT 2**

Structure of transport network; Concept of accessibility and locational utility; concept of gravity potential model and spatial interaction.

**UNIT 3**

Transport system in India-Rail, Road, Waterways and Air transport; Major transport routes of the World.

**UNIT 4**

Transport and regional development; Transport planning; transport system and related problems in Uttarakhand; Role of transport in economy and tourism of Uttarakhand.

**Books Recommended**

1. Hurst, Elliot-Transport Geography: Comments and Readings
2. Kinsky, J - The structure of transport network
3. Rolui, R -The Geography of transport.
4. Singh, Jagdish - Transport Geography of south Bihar.
5. Singh, K.N - Transport network analysis in Geography

**IV<sup>th</sup> Semester**



Course Code	Paper No.	Title of Course/ Paper	Marks		
			Internal Assessment	End Semester Exam	Credit
SOES/GEOG/C016	XVII	Geography of Uttarakhand	40	60	03
SOES/GEOG/C017	XVIII	Dissertation	40	60	03
SOES/GEOG/C018	XIX	Practical (Surveying )	40	60	03
		Total	120	180	09
Elective Courses		Any Three of the following elective (optional) Papers			
SOES/GEOG/E007	XX (a)	Agriculture Geography	40	60	03
SOES/GEOG/E008	XX (b)	Bio- Geography	40	60	03
SOES/GEOG/E009	XX (c)	Geography of Tourism	40	60	03
SOES/GEOG/E010	XX (d)	Glacial Geomorphology	40	60	03
SOES/GEOG/E011	XX (e)	Land Use and Soil Geography	40	60	03
SOES/GEOG/E012	XX (f)	Social Geography	40	60	03
Self Study Course					
(SOES/GEOG/SS-03	SS-03	Rural Geography (Qualifying)	40	60	03

**SOES/GEOG/C016**

**GEOGRAPHY OF UTTARAKHAND**

**Paper - XVII**

**Time: 2 Hrs**

Internal Assessment : 40 Marks

End Semester Exam : 60 Marks

**Note:** The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt Four questions in all. Answer should be precise. All questions carry equal marks

UNIT I : Geo-political setting; Geophysical setting; Geological structure; River systems and river basins; Glaciers and Lakes.

UNIT II : Climate; Natural vegetation; Soil; Population distribution and demographic structure; Migration ; Tribes .

UNIT III : Occupational structure; Agriculture, Animal husbandry ,Industrial development; Horticulture; Hydropower projects ; Tourism and Pilgrimage.



UNIT IV Hazard and Disasters; Planning regions; Limitation of development; contemporary issues; Protected areas and Biosphere Reserves of Uttarakhand; Socio-economic and environment success stories.

#### **Books Recommended:**

1. Lal, J.S. & Moddie: The Himalaya- Aspect of Change A.D. (ed).
2. Bhatt, H.P. & Bhatt Sangeeta (1992): Environment- Yesterday, Today and Tomorrow, Galgotia, Publication, New Delhi.
3. Bose, S.C.: Land and people of the Himalaya.
4. Valdin, K.S. (ed): Kumaun- Land and People.
5. Singh, T.V. (ed): Mountain and Development.
6. Singh, O.P. (ed): The Himalay- Nature, Man & Culture.
7. Joshi, S.C. and Others: Kumaun Himalaya.
8. Nityanand & Kumar, K.: The Holy Himalaya- Geographical Interpretation of Garhwal Himalaya.
9. Kharakwal, S.C.: Uttarakhand Physico-culture Complex.
10. Maithani, D.D.: Central Himalaya: Ecology, Environmental Resources & Development.
11. Rawat, M.S.S. (ed): Central Himalaya- Environment Development Vol. I & II.
12. Valdia, K.S. (ed): Kumaun- Land and People (1988).
13. Maitani, D.D., Gayatri Prasad & Nautiyal Rajesh: Geography of Uttarakhand (2010), Sharda Pushtak Bhawan, Allahabad.
14. Misra, R.P.: Regional Planning and National Development, Vikas Publication, New Delhi.

**SOES/GEOG/C017**

#### **DISSERTATION**

#### **Paper – XVIII**

Topic of dissertation will be assigned by HOD or Supervisor of the Dept. concerned. HOD will ensure no repetition of topic and area. Dissertation topic will be selected from any core/elective paper offered by the student in semester only. Area of study shall be the Himalaya region preferably.

Distribution of marks

Periodical presentation (Internal Assessment) by Supervisor - 20 Marks

Dissertation (evaluation by external examiner and supervisor jointly) - 60 Marks

Power Point/ Viva-voce - 20 Marks

Objectives:



1. The paper is designed to acquaint the student with the importance of field work as one of the methodologies in Geography and especially in research work.
2. The student are to be sensitized about field work and data/information collection and writing of report.

The project report will involve statement of objectives and scope of field investigation, methods of field work for studies of different scales (Macro, Meso and Micro), Preparation of a questionnaire/schedule, sampling techniques, collection, processing, presentation, analysis and interpretation of data/information. The candidates are required to write a project report on assigned problem involving field investigations.

1. The candidates are required to submit their project reports one week before the commencement of examination to the concerned head of the department.
2. Assessment of report will be done by a Board of Examiners, consisting of external examiner and internal examiner.
3. Power point presentation is must, Separate external examiner will be appointed by the University, Supervisor of dissertation will act as an Internal examiner. In the absence of Supervisor, HOD will act as internal examiner.

**SOES/GEOG/C018**

### **PRACTICAL IV SURVEYING**

#### **Paper - XIX**

**Time: 3 Hrs**

Internal Assessment : 40 Marks

End Semester Exam : 60 Marks

The syllabi for practical is divided into two section: section A and B. A is related to field work. Candidate will have to attempt two exercise of surveying from section A of 2 hours duration and two exercises of section B of 1 hour duration.

**Note:** Examination Departmental Committee Appointed by HoD for University Campuses. External Examiners will be Appointed by the University for Affiliated Colleges

#### **Section A: Field Work:**

- (i) Plane Table Survey:

Two point and three point problem. Triangulation and determination of heights and contouring with clinometers.

- (ii) Prismatic Compass Survey:  
Closes Traverse error adjustment by Bowditch method and trigonometry.
- (iii) Dumpy level survey: Contouring and profile drawing.

- (iv) Total station

#### Section B: Laboratory Work

- (i) GPS: Handling usages, GPS based data acquisition, GPS system and application.
- (ii) Altimeter (Hi-tech with precision): Handling and use.
- (iii) Interpretation of Indian daily weather maps through the study of thermal & cloud condition and pressure system. Weather forecasting method.

#### Distribution of Marks

(i)	Surveying (Two exercise)	30
(ii)	Survey Camp	20
(iii)	Sessional Record (min)	05
(iv)	Viva-voce	05

#### Note:

1. In all 20 exercise from both the parts A and B shall constitute the sessional record covering all sub section.
2. Candidate shall attend (compulsory) field training (survey camp) of at least seven days duration in a suitable area handling different instruments. They shall prepared minimum 05 exercise (survey camp) belonging to the original field survey.
3. Survey camp work will be evaluated at the time of the end semester practical exam.

SOES/GEOG/E007

### AGRICULTURE GEOGRAPHY

#### Paper – XX (a)

**Time: 2 Hrs.**

Internal Assesment: 40 Marks

End Semester Exam: 60 Marks

Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt Four questions in all. Answer should be precise. All question carry equal marks.

#### UNIT I

Nature, scope, significance and development of Agricultural Geography; Origin and dispersal of agriculture-major agricultural hearths; Diffusion of agricultural innovations; Recent trends in Agriculture.

#### UNIT II



Determinants of agriculture-physical, economic, Political, technological; socio-cultural, Land reforms; Cropping Pattern; Cropping intensity; Diversification and specialization; Efficiency and productivity; Crop combination regions.

### UNIT III

Theories of agricultural location: Von Thunen's model and its modification-sinclair's approach; concept of agricultural region; Whittlesey's classification of agricultural regions; Agricultural typology; Mix cropping; Crop- rotation and eco-farming.

### UNIT IV

Agricultural in Uttarakhand: Landuse and cropping pattern; New trends in Uttarakhand agriculture; Problems of Uttarakhand agriculture; Agricultural policy in Uttarakhand; Food security.

#### Books Recommended:

1. Symons, L: Agricultural Geography, G. Bells, London, 1967.
2. Grigg, D.: An introduction to Agricultural Geography, Hutchinson Publication, London.
3. Grigg, D. B.: The Agriculture System of the World, Cambridge University press, New York.1974
4. Mannion, A. M.: Agriculture And Environment change, John Willey, London, 1995.
5. Sauer, Carl: Agriculture Origen and Dispersals American Geographical society, New York.1952
6. Brown, L. R.: The Changing World Food Prospect: The Nineties and Beyond, Word Watch Institute, Washington D.C.,1990.
7. Dyson, T.: Population And Food Global Trends And Future Prospect, Routledge, London, 1997.
8. Morgan, W. B.: Agriculture in the Third World - A Spatial analysis, West view Press, Boulder, 1997
9. Singh B.B.: Krishi Bhoogol, Gyanoday Prakashan, Gorakhpur.
10. Kumar, Pramila evm Sharma, S. K.: Krishi Bhoogol, Hindi Granth Academy, Bhopal.
11. Tiwari R.C. and Singh, B.N.: Prayag Pustak Bhawan, Allahabad.

SOES/GEOG/E008

### BIO - GEOGRAPHY

#### Paper-XX (b)

Time 2 Hrs.

Internal Assessment: 40 Marks

End Semester Exam: 60 marks

Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All questions carry equal marks.

### UNIT I

Biogeography: Nature, scope, significance, approaches, history and recent development; Succession and ecological adaptation; Climax concept and ecosystem balance; Spatial dimension in Biogeography.

### UNIT II

Historical evolution of plants and animals; Pattern and causes of plant and animal distribution; Factor influencing the distribution of life; Bio geographical regions and realm of the world; Biome and biomass.

### UNIT III

Biodiversity and the source of novelty in life; Biodiversity: concept and significance; Biodiversity and global climate change; Palaeo-botanical and palaeo-climatological records of environmental change in India ; Adaptations of plants and animals to the environment; Biogeography of Uttarakhand Himalaya.

### UNIT IV

Bio-geographical information/data collection retrieval and application. Conservation of wildlife and forestry International and national efforts for conserving biological resources; Biosphere Reserves ; Tropical Forest Action Plan.

### **Books Recommended:**

1. Bradshaw, M.J. : Earth and Living Planet, ELBS, London, 1979.
2. Cox, C.B. and Moore, P.D. : Biogeography: An Ecological and Evolutionary Approach, 5<sup>th</sup> Edition Blackwell, 1993.
3. Hoyt, J.B.: Man and the Earth, Prentice Hall, USA, 1992.
4. Huggett, R.J.: Fundamentals of Biogeography, Rout ledge, USA, 1998.
5. Banskereau, B.M.: Biogeography-An Ecological perspective, Round Press, New York, 1957.
6. Joy, T.: Biogeography: A study of Plants in the Ecosphere, Oliver & Boyd, Edinburgh, 1977.
7. Mani, M.S. (ed.): Biogeography of India, The Hague, 1975.
8. Martin, C.: Plant Geography, Methuen, London, 1975.
9. Mathur, H.S.: Essentials of Biogeography, Any Printers, Jaipur, 1998.



Paper- XX (c)

Time: 2 Hrs.

Internal assessment: 40 Marks

End Semester Exam: 60 Marks

**Note:** The Paper consists of four units. Two Questions will be set from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All questions carry equal marks.

## UNIT I

Geography and Tourism; Nature scope and significance of Tourism Geography; Concept of Tourism; Type Of Tourism ; Determination of Tourism patterns in India with special reference to Himalaya, Tourism promotion policies in India.

## UNIT II

Tourism attractions in Uttarakhand - Geographical component ; Eco-Tourism; Mass Tourism; Adventure Tourism; Pilgrimage .

## UNIT III

Tourism Attraction : Swizerland,Singapur,Indonesia,Thailand,Malaysia ,Arunanchal Pradesh,Assam,Goa,Gujrat, Himanchal Pradesh.

Tourism Organization : UNWTO, WTTC, ITDC.

## UNIT IV

Impact of Tourism in Uttarakhand; economy, environment, society and culture; Tourism Infrastructure; Case Studies fuor Uttarakhand.

**Readings Recommended:**

- 1) Bhardwaj, D.S. Chaudhary, M.: Contemporary issues in Tourism, Himalaya, Mumbai, 1997.
- 2) Bhatt ,Rajesh and Kumar, K., Uttarakhand Tourism Geography, Research India Press,New Delhi,2018.
- 3) Bhatla, A.K.: Tourism Development, Principles and Practices, Sterling, Bangalore, 1989.
- 4) Cris, Ryan: Recreationl Tourism, A Social Science Perspective, Routledge, London, 1991.
- 5) Garg, N.K.: Tourism and Economics Development, Avishkar, Jaipur, 1996.
- 6) Hall,C.M: and Page, S.J.: Tourism in South and South East Asia; Issues and Cases, Butterworth Heinemann, Oxford,2001.
- 7) Kaul, R.K.: Dynamics of Tourism and Recreation, Inter India, New Delhi, 1985.
- 8) Sinha, p.c.: International encyclopaedia of tourism management, Vols,1-12, Anmol New Delhi.

SOES/GEOG/E010

**GLACIAL GEOMORPHOLOGY**

**Paper – XX (d)**

**Time: 2 Hrs.**

Internal Assessment: 40 marks

End Semester Exam: 60 marks

Note: The Paper consists of four units. Two Questions will be set from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All questions carry equal marks.

**Unit I**

Definition, scope and significance of Glacial Geomorphology; Approaches and relationship with Climatology, Geology and Glaciology; Identification system of glaciers; ice age, Climatic changes and glaciers.

**Unit II**

Type of glaciers; Important glaciers of the world; Movement of glaciers; Glacial morphology; Glacial process; Erosion landforms and their development; Sediments transportation system.

**Unit III**

Glacial depositional processes and landforms stratified and non stratified forms of moraines; Glacio-fluvial and glacial lacustrine environment.

**Unit IV**

Glaciations -concept of glacial cycle, peri-glacial process and land forms; Morphometry of glaciated basin, Techniques of glacial studies- Remote sensing, advanced surveying techniques and GPS etc. Inventory of Himalayan glaciers with special reference to Uttarakhand Glaciers. Problems of retreating glaciers; Case study of Gangotri Glacier, Contemporary issues.

**Books recommended :**

1. Bloom A. L.: Geomorphology Prentice Hall, New Jersey USA, 1979.
2. Goudie, A: Geomorphological Techniques, George Allen and Unwin, London, 1981.
3. Washborn, A.L.: Peri-glacial Process and Environment, Edward Arnold London , 1973.
4. Young, A.: Slopes, Oliver and Boyd London, 1972.
5. King, C.A.M.: Techniques in Geomorphology Edward Arnold London, 1968.



6. Embleton, C. and Theories, J.: Process in geomorphology, Arnold Hienmann, London, 1979.
7. Phodes, D.D. and William, G.P.: Adjustment of fluvial processes, George Allen and Unvin, Bostan, 1982.
8. Tricart, I. and Calliam : Introduction to climate Geomorphology, Longmans London, 1972.

**SOES/GEOG/E011**

**LAND USE AND SOIL GEOGRAPHY**

**Paper-XX (e)**

**Time 2 Hrs.**

Internal assessment : 40 Marks

End semester Exam :40 marks

Note: The paper consist of four units. Two question will be set from each unit. The candidates bill be required to attempt four question in all. Answer should be precise. All question carry equal marks.

**Unit I**

Nature, scope and significance of Soil Geography; Tts relation with pedology; Soil forming factors- organic, inorganic, climatic, topography and temporal; Process of soil formation; Soil profile.

**Unit II**

Soil properties; physical, chemical, biological etc, Soil capability; Genetic classification of soil; Soil conservation; Methods to improve the physical qualities of soil.

**Unit III**

Concept nature and significance of land use in Geography; Urban and rural landuse; Determinations of agricultural land use: Physical, economic, social, institutional and technological; Land Capability Classification , Land use efficiency ,Land use planning.

**Unit VI**

Land use classification of Uttarakhand, Land utilisation and Typology of Uttarakhand Agricultural land ,land use change in Uttarakhand since last three decades its impact on Environment; animal husbandry; Land use and economic potential and fruit belts of Uttarakhand.

**Books Recmmendetion**

1. Bunting, B.T. : The Geography of soil .
2. Clark, G.R. : Studyof the soil in the field .

3. Jenny, H. : Factors of soil Formation .
4. Plyushin, I.I.: Reclamative Soil Science .
5. Robinson, C.W.: Soil there Origin, Constitution & Classification.
6. Gardner, James S.: Physical Geography
7. Gregor; Geography of Agriculture
8. Jacks : Land classification for landuse planning
9. Soil Survey manual, I.A.R.I., new delhi
10. Singh, V.R. Land use patterns in Mirzapur and Environs.
11. Safi, M.: Land Utilization in Eastern U.P.
12. Chisholm, M.: rural Settlement and Landuse.
13. Backman, H.O. & Brady, N.C.: The Nature and Properties of Soils.

**SOES/GEOG/E012**

**SOCIAL GEOGRAPHY**

**Paper XX (f)**

**Time: 2 Hrs.**

Internal Assessment : 40 Marks

End Semester Exam : 60 Marks

**Note:** The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt Four questions in all. Answer should be precise. All questions carry equal marks

**UNIT I**

Definition, nature and scope of Social Geography; Major concepts of Social Geography; Social Geography in the realm of sciences; Social ecology, social space, social segregation and assimilation; Social justice; Social well being level in India.

**UNIT II**

Evolution of socio-cultural regions in India; Society as indicator of regional identity; Social security; Evolution of socio-cultural region in India; Evidence from classical literature; Core and peripheral regions; Social components in region formation; Language & dialect; Social groups.

**UNIT III**

Social transformation and change in India; Process and elements of social transformation; Modernization and Sanskritization; Role of rural-urban interaction; Problems of social transformation in the traditional society.

**UNIT IV**





Social and ethnic diversity of India and national integration; Social pluralism and development. Society and environment; Social pollution, conflicts and violence; Emphasis on social planning in the last five years plan.

**Books Recommende:**

1. Ahmed, A. (1999), Social Geography, Rawat Publication, Jaipur.
2. Carter, John and Jones, T. (1989), Social Geography: An Introduction to Contemporary Issues, Edward Arnold, London.
3. Chandana, R.C. (1989), Spatial Dimension of Scheduled Castes in India, Intellectual Publisher House, New Delhi.
4. Crane, R.I. (1973), Regions and regionalism in South Asia Studies: An Exploratory Study, Durham, Duke University.
5. D.M. Smith (1995), Geography and Social Justice, Black-well.
6. Dube, S.C. (1991), Indian Societies, National Book Trust of India, New Delhi.
7. Dube, S.C.: Tribal Heritage of India, Vias Publishing Co., New Delhi.
8. Ghurye, G.S. (1963), The Scheduled Tribes, Bombay, Populat Prakashan,
9. Guha, B.S. (1994), Racial Elements in Indian Population, Oxford University Press, Bombay.

**SOES/GEOG/SS03**

**RURAL GEOGRAPHY**

**(Qualifying)**

**Time: 2 Hrs.**

Internal Assesment: 40 Marks

End Semester Exam: 60 Marks

Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All question carry equal marks.

**UNIT I**

Rural Geography - Definition, nature, scope and significance of Rural Geography. Rural Settlement Studies: Concepts, approaches and contents definitions and characterstics of Rural Settlements. Histogenesis of Rural Settlements, Sequence of occupance; Site, situations, size, type, pattern and spacing of rural settlements.

**UNIT II**

Spatio-temporal dimensions of rural settlements; Morphology of Rural settlement with special reference to India, House types and field patterns, their categories and related factors; Rural houses in different Geographical environs folk culture and folk architecture.

### UNIT III

Rural Land use; Land use , classification ,agriculture land utilization, forest land ,wast land and its management;Land use and land cover; Changes soil categories; Problem related to landuse and agriculture.

### UNIT IV

Rural Economy; Primary occupation Agriculture; Animal husbandry ,Transhuman in Himalayan region. Rural handicrafts; economic potential; contemporary issue related to rural economy of India and Uttarakhand.

#### Books Recommended:

1. Bhatt H.P. & Bhatt Sangeeta: Environmental Dimensions of Rural Settlements in the Himalaya in 1993.
2. Davis, S.: Computer Data Displays.
3. Bhatt Sangeeta(1984): Economic Transformation- A case study of district Uttarkashi (Unpublished.D.Phil. Thesis)
4. Davis P. ; Data Description & Presentation.
5. Mishra, R.P.: Research Methodolgy.
6. Kanetkar, T.P.: Surveying & Levelling.
7. Punmia, B.C.: Surveying & Levelling.
8. Singh, R.L.: Elements of Practical Geography.
9. Hord. R.M. ; Digital Image Processing of Remotely Sensed Data, New York, 1989.
10. Pratt.W.K. : Digital Image Precessing, John Wiley, New York, 1978.

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