

# SHRI GURU RAM RAI UNIVERSITY

(Estd. by Govt. of Uttarakhand, vide Shri Guru Ram Rai University Act no. 03 of 2017)



## **Syllabus of MA/MSc. Geography**

**Effective from Academic Session**

**2017**

**&**

**Revised in session – 2018**

**M.A./M.Sc. Geography****Core Courses:****EXAM STRUCTURE GEOGRAPHY –****MA I- SEMESTER**

Code	Title of Course/Paper	Credit	Marks	
			Internal	External
MGGC-101	Geographic Thought	03	40	60
MGGC-102	Advance Geomorphology	03	40	60
MGGC-103	Geography of Natural Resources	03	40	60
MGGC-104	Geography of India	03	40	60
MGGC-105	India-Location Aspects (Maps)	03	40	60
MGGL-106	Practical	03	40	60
Total		18	240	360

**GEOGRAPHIC THOUGHT****MGGC-101**

Note : The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

**UNIT I**

Contribution of Greeks and Romans with special reference to Ptolemy and Strabo, Geography in Muslim World, Geography as a Science of : (i) Location, (ii) Distribution, (iii) Areas differentiation, (iv) relationships (v) spatial organization and (vi) Religion.

**UNIT II**

German School of Geography – Humboldt, Ritter, Ratzel.

French School of Geography – Blache&Brunhes

American School of Geography – Sauer & Huntington

**UNIT III :**

Models and paradigms, system theory, phenomenological approach, dualism between (i) physical and human geography; (ii) Regional and Systematic Geography and Quantitative revolution.

**UNIT IV:** Pragmatism, positivism, functionalism, idealism, existentialism, behaviouralism, radical and humanistic geography, future of geography and contribution of Indian Geography.

**Books Recommended :**

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. – BhaugolikVichardharayen (Hindi) – SahityaBhawan Pub. Agra.
7. HussainMajid- Evolution of Geographical Thought (English And Hindi )Rawat Publication jaipur.
8. Taylor. G. Geography in Twentieth Century; London
9. *Jagdish Singh - BhaugolikChintankaKramvikas (Hindi) Gyanodaya , Gorakhpur.*

**ADVANCE GEOMORPHOLOGY**

**MGGC-102**

**Note :** The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

**UNIT I** Fundamental concepts of Geomorphology; methods and approaches of landforms study; Theories of landscape development by Gilbert, Davis, Penk and Hack and Morphogenetic regions.

**UNIT II**

Plate tectonics, Mountain building, Isostasy, Theories of Slope development by Young and King, peneplain and pedi plains, geological structure and rocks.

**UNIT III**

Geomorphic process – River, glacier, air, underground water and coastal; mass movement and resultant land forms; morphometry of drainage basin; profile of equilibrium rejuvenation and polycyclic landscape.

**UNIT IV**

Applied Geomorphology engineering works, Anthropogenic process and landscape planning, Regional Geomorphology of Ganga plain, Nepal and Konkan region, Geomorphic hazards and mitigation.

**Books Recommended :**

Singh, Savindra Geomorphology, PrayagPustakBhawan, Allahabad.:

Singh, Savindra, Bhooaakirtivigyan (in hindi), PrayagPustakBhawan, Allahabad.

**GEOGRAPHY OF NATURAL RESOURCES**

**MGGC-103**

**Note :** The paper consists of four units. 4 long, 5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

**UNIT I**

Concepts of Natural Resources, Classification; Dynamic theory of resources, resources scarcity and adequacy, resource regionalization, Economic development and resources.

**UNIT II**

Land, water, mineral, energy and biotic resources- distribution, use-misuse and conservation, Global and Indian Scenario.

**UNIT III**

Resource appraisal, resource depletion and emerging issues like desertification, deforestation, loss of bio diversity, energy crises, water scarcity and conflicts.

**UNIT IV**

Natural resource data management system, sustainable development and conservation of resources, integrated resource development, Globalization and resources, community participation and governance and contemporary issues.

**GEOGRAPHY OF INDIA****MGGC-104**

**Note :** The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

**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**

Human development index and its components, Growth and distribution and density of population, Trends of Urbanization special distributional pattern of settlements (rural & urban).

**UNIT III**

Agroclimatic region, Rainbow revolution, Industrial Complex and Industrial regions, Major river valley projects, energy crises and food security.

**UNIT IV**

Growing importance of ports, last two five plans, experience of Rural Planning, Integrated R.D.P., Multi level planning, community participation & governance and planning contemporary issues and Economic reforms- Multinationals and liberalization.

**INDIA – LOCATIONAL ASPECTS (MAP)****MGGC-105**

**Note :** The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

**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 to promote awareness among students about Atlas.

**Note :**

There will be two parts of this course :

- (A) The paper consists of four units. 4 long, 5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section. The paper is map oriented.
- (B) An out line map of India with indicated location of features in the numerals will be provided. Students will identify the location features.
- (C) An out line map of India will be provided to the students and they will have to mark locations on it. 10 locations will be given and 01 mark for each correct location.

**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 Cities/ belts, Industrial, regions and complexes, Power plants, Hydro Power Projects, Important ports and transport routes, important resources.

**Other –**

Bio diversity, National Parks, Environment, ecology and contemporary issues.

**PRACTICAL – 1****MGGL- 101****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 exam shall be as given below:

Laboratory work is divided into four units. 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 Cartography). All questions carry equal marks.

**UNIT I**

Projections-Mercator's, Polyconic, International, Gnomonic (Equational Aspect), Gall's Stereographic, interrupted Mollweide's and Sinusoidal.

**UNIT II**

Slope analysis by Wentworth', Smith's, Henery- Raiz's and Robinson's Methods. Analysis of relief characteristics from contours, profiles 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.

**UNIT IV**

Interpretation of Topographical maps – land use and settlements.  
Topographical mapping  
Geological Cross Section drawing.

**Books Recommended :**

1. Gupta K.K and Tyagi V.C., 1992: Working with Maps, Survey of India, DST, New Delhi.
2. Mishra R.P. and Ramesh A,. 1989: Fundamentals of Cartography, Concept Publishing.
3. Singh R.L. and Singh R.P.B., 1999: Elements of Practical Geography, Kalyani Publishers.
4. Singh r.l., 1998: PrayogicBhoogolRooprekha, Kalyani Publications.

**EXAM STRUCTURE GEOGRAPHY – TOTAL CREDITS****II- SEMESTER**

Code	Title of Course/Paper	Credit	Marks	
			Internal	External
MGGC-201	Geography of the Himalaya	03	40	60
MGGC-202	Advance Climatology	03	40	60
MGGC-203	Environmental Study	03	40	60

MGGC-204	Remote Sensing and GIS	03	40	60
MGGC-205	World (Excluding India) Location Aspects (Maps)	03	40	60
MGGL-206	Practical	03	40	60
	<b>Total</b>	<b>18</b>	<b>240</b>	<b>360</b>

**GEOGRAPHY OF THE HIMALAYA**

**Course Code MGGC- 201**

**Paper –VII**

**Time- 3 Hrs.**

**Internal Assessment:40 Marks**

**End Semester Exam:60 Marks**

**Note :** The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

**UNIT I**

Geo- physical identity; origin of Himalaya and its structure; Himalaya as regional entity; geopolitical issues, cultural appraisal, Himalayan people; Geo-sensitivity of Himalaya. Future of Himalaya.

**UNIT II**

Physiography; landforms, drainage (volume) and 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, tourism and power projects.

**UNIT IV**



Geographical account of Western, Central and Eastern Himalaya. Regional analysis of Kashmir, Laddak, Kangra and Lahul, Doon, Kathmandu, Dhiyang Valley, Tista Valley, Mountain Development Planning and Policy.

**Books Recommended :**

1. Lal, J.S. & Moddie, : The Himalaya- Aspect of Change A.D. (ed).
2. Bose, S.C.: Land and people of the Himalaya.
3. Kayastha, S. : The Himalayan Beas Basin.
4. Valdin, K.S. (ed.) : Kumaun – Land and People.
5. Singh, T.V. (ed.) : Mountain and Development.
6. Singh, O.P. (ed.) : The Himalaya-Nature, Man & Culture.
7. Joshi, S.C. and others : Kumaun Himalaya

**ADVANCE CLIMATOLOGY****MGGC- 202****Paper – 2****Time- 2:30 Hrs.****Internal Assessment:40 Marks****End Semester Exam:60 Marks**

**Note :** The paper consists of four units. 4 long, 5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

**UNIT I** Meaning, scope and development of climatology, Atmosphere equilibrium, Adiabatic temperature change, Jet Stream, El- Nino, La- Nin, Walker circulation, Southern Oscillation, precipitation & humidity.

**UNIT II**

Air masses- origin, growth, classification, and distribution, Horizontal and Vertical motion of winds. Fronts and front genesis, cyclones and anticyclones; temperate and tropical cyclones;

**UNIT III**

Climate classification of Koppen and Thornthwaite. Major Climate types, Weather analysis; weather and human behaviour, Weather modification, atmospheric hazards, cloud bursts.

**UNIT IV**

Climatic changes- definition & detection : Tree rings, Glacial ice & Oxygen Isotope analysis; causes : Plate tectonics, Volcanic activity, orbital variations: Solar variability. Human impact on global climate, Global Warming, artificial climate and acid precipitation.

**Books Recommended :**

1. Chorley, R.G. 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. Sidharta, K.: Climatology, KitabMahal, New Delhi.
4. Trewartha, G.T. : An Introduction to Climate, McGraw Hill Series in Geography.
5. Miller, A. et al : World Climatology, Elbs and Edward Arnold, 1979.
6. Singh, Savindra : Climatology,, PrayagPustakBhawan, Allahabad.:
7. Singh, Savindra, JalvayuVigyan (in Hindi), PrayagPustakBhawan, Allahabad.

**ENVIRONMENTAL STUDY****Course Code -MGGC- 203****Paper – 4****Time- 2:30Hrs.****Internal Assessment:40****End Semester Exam:60**

**Note :** The paper consists of four units. 4 long, 5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

**UNIT I**

Meaning and scope of environmental geography, Basic Principles of environmental geography; composition and types of environment, Ecological Principles, Man- Environment relationship. Restoration of ecology.

**UNIT II**

Ecosystem: Concept and components, Trophic levels; Food chains and Food Webs, Energy flow in the ecosystem, Ecosystem, Ecosystem stability, High land- Low and interactive system, human ecological adaptation.

**UNIT III**

Environmental degradation, Environmental Pollution (Air, Water and Solid Waste Ganga Pollution & Ganga action plan. Environmental Problems- Global Warming. Ozone depletion and Green house effects, transformation of nature by man, global ecological imbalances.

**UNIT IV**

Environmental management: Concept and approaches; Ecosystem management strategies, Environmental dimension in Planning – sustainable development, eco- development, limits to growth, Environmental impact assessment, RIO summit, Kyoto protocol & carbon trading.

**Books Recommended :**

1. Singh, Savindra : Environmental Management, Prayag Pustak Bhawan, Allahabad.:
2. Singh, Savindra, Paryawan Bhoogl (in hindi), Prayag Pustak Bhawan, Allahabad.
3. Furley, P.A. and Neway, W.W. : Man and the Biosphere, Butterworth, London.
4. Arvil, R.: Man and Environment, Penguin.
5. Bhatt H.P. & Bhatt Sangita (ed.): Environment – Yesterday, today & tomorrow 1992.

**REMOTE SENSING AND GIS****Course Code -MGGC- 204****Paper –4****Time- 2:30 Hrs.****Internal Assessment:40****End Semester Exam:60 Marks**

**Note :** The paper consists of four units. 4 long, 5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

**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, 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.

#### **UNIT IV**

Computer cartography and mapping in digital age; 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. Chauniyal. D.D.: Remote Sensing and G.I.S.(Hindi).
3. Demer, M.N.: Fundamentals of Geographic Information System.
4. Aronoff, S.: Principles of Geographical Information System : Socio-Economic Applications.
5. Aronoff, S.: Geographical Information System – A Management Perspective

#### **CourseCode -MGGC-205**

#### **World (Excluding India) Locational Aspects (Map)**

#### **Paper –5**

**Time- 2: 30 Hrs.**

**Internal Assessment:40Marks**

**End Semester Exam:60 Marks**

(A) **Note :** The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

(B) An out line map of World will be provided to the students and they will have to mark locations. 15 locations will be given and a mark for each correct location.

(C) (B) An out line map of World with indicated location of features in the numerals will be provided. Students will identify the location features. 15 location 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
Write up in 30 words	15
(B) Identification of locations	15
Write up in 30 words	15

**Course Contents :**

**Physical –**

Mountain and ranges, rivers, forest, soil, lakes, and natural regions, oceans and seas, climate and change, major currents, major land forms.

**Cultural –** Nation and Capitals, Important Cities, Population, Tribal Areas, cultural regions, Agglomeration, poverty, Metropolitan, Megalopolis.

**Economic –**

Agro-climatic regions & Agricultural regions, human ecological regions, Industrial regions and major industrial centres, major iron and coal fields, transport routes (land and sea).

**Environment & Other –**

Major eco system, zoo geographical regions, bio- geographical regions, Biome & biomass, popular biosphere reserves, SAARC, ASIAN, OPEC, places in news and geographical events, contemporary issues.

**Books Recommended :**

1. India & the World- NATMO
2. School Atlas
3. Britanica World Atlas
1. Oxford Atlas
2. Mackmilan Atlas
3. Map by Practice, K. Sidharta

**Course Code -MGGL- 201:**

**PRACTICAL – 1**

**Internal Assessment : 40 Marks**

**External Assessment : 60 Marks**

**Note :** The syllabi for practical is divided into two section , 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 question will be set selecting at least two question from each unit .

Candidate will have to attempt four question selecting at least one question from each unit . The division of marks in Practical is given below-

<b>Laboratory work</b>	-	<b>M.M. 14</b>
<b>Field Work</b>	-	<b>M.M. 30</b>
<b>Sessional record</b>	-	<b>M.M. 11</b>
<b>Viva – Voce</b>	-	<b>M.M. 05</b>

### **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 layers , Mosaicking, Radiometric and stacking of Multispectral Imagery. 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 :**

Basics of GPS and Computer Cartography & mapping .

#### **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. Sinha, P.K. & Sinha, P.: Computer Fundamentals, 3<sup>rd</sup> Ed. B.P.B. Publication.

#### **SECTOPM B – FIELD WORK**

The field study is compulsory for all students, those who will not take part, will not 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.

Field 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. Students 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 and data collection, analysis of collected data/ information etc. in which minimum 5 maps and diagrams and 6 pages of write up is necessary.

#### FIELD STUDY GUIDE (TEACHER)-

Students will submit a precise report (1 or 2 pages) of field study work with the list of students present/ attended the field study to the HOD concern.

**SEMESTER III****EXAM STRUCTURE GEOGRAPHY – TOTAL CREDITS****Core Course**

Code	Title of Course/Paper	Credit	Marks	
			Internal	External
MGGC-301	Research Methodology and Techniques	03	40	60
MGGC-302	Model & Theory in Human Geography	03	40	60
MGGL-301	Practical III – Quantitative Techniques and Mapping	03	40	60
	<b>Total</b>	<b>09</b>	<b>120</b>	<b>180</b>

**Elective Course**

Code	Title of Course/Paper	Credit	Marks	
			Internal	External
<b>Elective</b>	Any three of the following elective (options) courses			
MGGE-303	Natural Hazards & Disaster Management	03	40	60
MGGE-304	Political Geography	03	40	60
MGGE-305	Cultural Geography	03	40	60
MGGE-306	Geo- Hydrology	03	40	60
MGGE-307	Biogeography	03	40	60
MGGE-308	Geography of Soil & Land Use	03	40	60
MGGE-309	Urban Geography	03	40	60
MGGE-310	Geographical Information Science	03	40	60
	<b>Total</b>	<b>3x3=9</b>	<b>40x3=120</b>	<b>60x3=180</b>
<b>Self-Study Course</b>				
MGGS-301	Assignment based Seminar (Qualifying)	03	100	



**Research methodology and techniques**

**MGGC-301**

**Note :** The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

Unit I

Concept & significance of research in geography, nature, objective and basis of research, types of research, approaches & 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 and 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, Framing of Pilot and Research project

Books Recommended:

1. Bhatt, H.P. and Bansal S.C. (2012) :Research Methodology (in Hindi), Meenakshi Prakashan, Meerut.
2. Ahuja, R. (2001): Research Methods, Rawat Publication, Jaipur and 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 Publication, London
5. Blaxter, L., Hughes, C. and Tight, M. (1996): How to Research. Open University Press, Buckingham.
6. Har Prasad : Research Methodology and Techniques in Geography, Rawat Publication, Jaipur
7. Daniels, P., Bradshaw, M. et al. (2000) : Human Geography : Issues for the 21<sup>st</sup> Century, Prentice Hall, London and Pearson Publishers, Singapore, Indian reprint, 2003.

**Models & theory in human geography**

**MGGC- 302**

**Note :** The paper consists of four units. 4 long, 5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

Unit I

Central place theory of Christaller & Losch, Von Thünen's Model of agricultural location and recent modification, Weber's model of industrial locations, spatial diffusion & Gravity theory

Unit II

Malthusian and Marxian theory of population growth, Demographic Transition model, Ravenstein's Migration model, Taylor's Zone-Strata Theory

Unit III

Perroux Growth Pole Theory, Rostow's Model of Stages Of Growth, Tissen Polygons, Primate City Model, Rimland Theory

Unit IV

Development from above- Theory of G. Mirdal and A.O. Hirschmann, Re thinking development – Theory by Club of Rome, Development from below – Theory of Rostow

and Friedmann, theory of eco development, Another Development and Sustainable development.

**Books Recommended :**

1. Johnson, E.A.J. : The organization of space in developing countries, Harvard University Press Cambridge, 1970.
2. Kuhlinski,
3. Misra, R. P. et al : Regional Planning: Concepts, Techniques and Policies, University of Mysore, 1969
4. Gregor : Geography of Agriculture
5. Bhatt H. P. & Bhatt Sangeeta: Environmental Dimensions of rural settlements in Himalayas in 1993
6. Johnson, J.H.: Urban Geography: An Introductory Analysis, Pergamon press, London , 1972

7. Singh, R.L. : Urban geography in Developing Countries, National Geographical Society of India, Varanasi
8. Clarke, John : Population Ecology, Pergamon Press, oxford, 1973
9. Crook, Nigael: PrincipalesOf Population and Development, Pergamon Press New York, 1997

**Practical – III****Quantitative Techniques and Mapping****MGGL-301**

**Note :** The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

**Distribution ofMarks:**

Laboratory Work : 30

Sessional Record : 20

Viva Voice: 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 (Cropcycle and Activity Pattern) Climograph.

**UNIT II**

Nearest Neighbor 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, Stilgenbauer's&Sten de Geer's method. Choropleth – Simple and asymmetric stepped statistical surface, class less choopleth, errors and their elimination

**UNIT IV**

Correlation by spearman's and Karl Person's method, Scatter Diagram, Simple Linear Regression analysis, Construction of Regression Line, Plotting of Residuals of Absolute and Relative location, explanation of Residuals plotted on the maps.

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. Dookshatula, 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 20
9. Sharma, J.P. :Practical Geography (Hindi)
10. Singh, R.L. :Practical Geography (English / Hindi)

**Note : candidate have to select any three of the following elective (optional courses)**

## **Natural Hazards & Disaster Management**

**MGGE-303**

**Note :** The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

### UNIT – I

Meaning and concept of Hazards and Disaster, Type of Natural and Manmade Hazards, Elements of Disasters: Hazard analysis, Vulnerability and risk analysis, Disaster Management – Determinants of Scale

### UNIT – II

Natural Hazards : Typology, Regional Dimension of Hazards, Occurrence and trends, Methods of Identifying Hazards Prone regions, Major terrestrial Disasters : Seismic Disasters, Volcanic Disaster, Landslides and Tsunamic Disaster, Reasons of increasing frequency of Disasters

### UNIT – III

Disaster Management : Concept, stages of Disaster Management, Pre- Disaster stage – Disaster Preparedness (Disaster research, Disaster Predication and Disaster warning), Methods and levels of preparedness, Disaster mitigation and Disaster prevention, Post – Disaster stage – Rescue and relief work, Disaster Management Act

### UNIT – IV

Different type of Disaster and Hazards prone areas in India, Disaster Management Policies and Approaches, Major Disaster in India and their management, Resource to Disaster, Government, Non Government Programmes/ Institution of Disaster Management

### **Books Recommended:**

1. Tianch, L. : Landslide Hazard Mapping and Management in China, ICIMOD, Nepal, 1996
2. Valdiay, K.S. : Environmental Gology, Tata McGraw Hill Co. Ltd., New Delhi 1987
3. Zareba, Q. and ManceV. : Landslides and their Control, Elsevier Amsterdam, 1969

4. White, G.F. (ed): Natural Hazards : Local, National, Global, Oxford University Press, London 1974
5. Gupta, H.K. : Dams and Earthquakes, Elsevier, Amsterdam, 1976
6. I. et al : The Environment as Hazards, O.P.U. , New York, 1978
7. B.A. et ai (ed) : Geological Hazards, Springer Varlay, New York, 1950
8. C. : Natural Hazards and Global Change I.T.C. Journal, 1989
9. : Environmental Geography (English /Hindi)
10. Petak, W.J. & Atkinson, A.D. : Natural Hazards Risk Assessment and Public Policy, Springer – Verlay, New York, 1982

**Political Geography**

**MGGE-304**

**Note :** The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

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 makainder and spykman.

Unit – II

Capital city, types of capitals, boundries frontiers and their laws, implication in the current geopolitical context. Geopolitical significance of Indian ocean NATO, SAARC.

UNIT – III

World politics in changing perspective – colonization, decolonization, federalism, strategic basics and military alliances, non alinged movement, water disputes and terrorism, India’s position in world politics

UNIT –IV

Concept, Nature and scope of electoral geography, parliamentary constituencies in india, and legislative allotment of uttarakhand. National and regional political parties and voting behaviours in india anduttarakhand ( case study of three constituencies each from garhwal, kumaon and plain). 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 mc graw hill publication, new delhi 1996
2. Pounds, N.J.G. : Political geography, mcgraw hill, new York
3. Dikshit ,r.d. : political geography – a century of progress, sage, new delhi, 1999
4. Taylor, p. : political geography, longman, London, 1985

## **Cultural Geography**

## **MGGE-305**

**Note :** The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

### **UNIT – I**

Concept of Culture and Culture as an indicator of Regional identity. The Study of culture in Geography, Nature, Scope concept and significations of Culture Geography, Development of Cultural Geography, Cultural Landscape, Cultural Process, Cultural Diffusion.

### **UNIT – II**

Origin and dispersal of man, Brief cultural history of Man

Migration processes and cultural development – Prehistoric, Primitive agrarian, Industrial revolution, Role of Technological changes in Cultural Development, Cultural Hearths, Cultural Ecology

### **UNIT – III**

Human Races – origin and dispersal and related theories, type and distribution, Major ethnic, Racial Groups and Linguistic groups

Resource and Culture – Resource extraction and conversion

Processes and elements of Cultural Transformation

Cultural Segregation and Assimilation, Cultural unity and Diversification

Cultural Realms – Monsoon Asian, Meso – African, Mediterranean, Western European, Anglo – American , Latin American

Cultural Regions - Indo – Aryan, Dravidian, Chinese, Arabian Islamic, Angolo – American Atlent Coastal, Brazilian, Maxican, English – European

Books Recommended:

1. Spencer, J.&E. ThomsasW.I. : Introducing cultural Geography
2. Rostlund, F. : Outline of Cultural Geography
3. Wagner, P.J. & Mikesell, M.W. (eds) : Reading Cultural Geography
4. Sultar, C.I. : The Cultural Landscape
5. Frazier, D.E. : Race and Cultural Contacts in the modern world
6. Spher, D.F. : Geography of Religions
7. Carter, G.F. : Man and the land a cultural Geography
8. Dohra, F.E. & Sommers, L.M. (eds) : Cultural Geography Selected Readings

**Geo Hydrology**

**MGGE-306**

**Note :** The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

UNIT – I

Definition, concept, importance and scope of Geohydrology, Water resource, The Hydrological cycle, concept of water shed management in Hydrology, Mountain Hydrological system

UNIT – II

Precipitation and Measurement, runoff process and factors, surface runoff, compilation of runoff, Discharge and Measurement, Hydrograph, stream gauging and stream flow, constraint - examples from India

UNIT – III

Infiltration - capacity, rate, factors and methods of compilation of infiltration, evaporation factors, estimation and its control, transition ratio,

Management planning : Ground Water Hydrology origin, occurrence, movement, recharge and discharge

UNIT – IV

Water Surplus and water deficit - areas, over and under utilization of water resource, water balance, Water conservation – present, future perspective, planning and programme, Water Harvesting – Traditional and modern methods

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 : Wiley Eastern Ltd., New Delhi , 1995
5. Reddy, R.J. : The Textbook of Hydrology, Laxmi Publicaiton, 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 India Conditions, Omega, New Delhi
9. Sain, S.K. : The Flood Problem in India, Birla Institute of Sceintific Research, Economic ReserarchDivison, 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

**Biogeography****MGGE-307**

**Note :** The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

## UNIT – I

Biogeography : Nature, Scope, Significance, Approaches, History, Recent Development, Succession and Ecological adaptation, Climax concept and ecosystem balance and spatial Dimension in Biogeography

## UNIT – II



Historical Evolution of Plants and Animals: Pattern and Causes of Plant and Animal Distribution, Factors 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 of 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 forest, Agro forestry and Reforestry 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, Rutledge, USA, 1998
5. Banskereau, B.M. :Biogeography – An Ecological Perspective, Ronald 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

**Geography of soil and landuse****MGGE-308**

**Note :** The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

**UNIT – I**

Nature, scope and significance of soil Geography, Its relationship with pedology, soil forming factors- organic, inorganic, climatic, topographic and temporal, process of soil formation, soil profile.

**Unit – II**

Soil properties, physical, chemical and biological etc. soil capability. Genetic classifications of soils : Zonal, Azonal and intra zonal soils, soil conservation, methods to improve the physical qualities of soil.

**UNIT – III**

Concept, nature, and significance of landuse in geography, urban and rural landuse, development of techniques of classification and description of landuse, determinations of agricultural landuse : physical, economic, social, institutional and technological, landuse survey india.

#### Unit – IV

Landuse, landholding, land tenure system and land capability classification, landuse efficiency, potential land, landuse planning, methods and techniques, landuse and watershed management. Landuse system and landman ratio.

Books recommended :

1. Bunting ,b.t. : the geography of soils.
2. Clark, G.R. : study of the soil in the field
3. Jenny, h, : factors of soil formation
4. Plyusnin,I.I.: soils, Their Origin, constitution & classification
5. Gregor : geography of agriculture

### **Urban Geography**

### **MGGE- 309**

**Note :** The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

#### UNIT – I

Meaning, Scope and approaches of Urban Geography: Changing Paradigms of Urban Geography, Development of Urban Geography in India, Theories of Urban Origin : 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, multiple nuclei models, Structure and Characteristics of Central Business District, Classification, Nelson – Steigenga webb and double index method, Rank size rule applicability

#### UNIT – III

Centrality and Hierarchy of Towns, Central place theory of Christaller, Concept of City Region - Rural Urban fringe and its delimitation, satellite town, suburbs, conurbation, urban problems, 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, Major Plans : A case study of Nainital and Dehradun, Planned and SmartCities : Chandigarh and New Tehri town, urban development, planning in India – Policies, programme and implication, Delhi and NCR Globalization and Urban Planning

**Books Recommended:**

1. Singh, L.S. and Goiledge, R.G. : Cities, Space and Behaviour : Elements of Urban Geography, Prentice Hall, New Delhi
2. Mishra, H.N. (ed) : Urban Geography, Heritage
3. Ortham, R.M. : Urban Geography, John Wiley, New York
4. Short, R.J. : An introduction to Urban Geography, Rutledge and Kegan Paul, London,
- 5 Johnston, R.J. : City and Society, Hutchinson, London
6. Herbert, D.T. : Urban Geography : As Social Perspective, David and Charles, Newton Abbot, 1977
7. Johnson, J.H. : Urban Geography : An Introductory Analysis, Pergamon Press, London, 1972
8. Singh, R.L. : Urban Geography in Developing Countries, National Geographical Society India, Varanasi
9. Berry, B.J.L. and Horton, F.F. : Geographic Perspectives on Urban Systems, Prentice, Englewood Cliffs, New Jersey, 1970
10. Ramachandran, R. : Urbanization and Urban Systems of India, Oxford, New Delhi, 1993
11. Knox, P.L. and Taylor. P.J. : World Cities in a World System, Cambridge University U.K. 1995
12. Harvey, D. : Social Justice and the City, Arnold, 197

**Advance geographical information science****MGGE-310**

**Note :** The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

## UNIT – I

Spatial science – geography as a special science, maps and spatial information, dynamics of spatial information, elements of information technology, geographical objects and their relations.

**UNIT –II**

Data Base Management System – gis database, spatial data management system, object oriented data base management system, object relational data base management system, spatial data – elements sources quality, data model and GIS data format.

**UNIT –III**

Spatial data analysis – analysis, techniques, raster data analysis – location operations, neighbourhood operations, distance measurement operation.

Vector data analysis – buffering, overlay, distance measurement, pattern analysis, and map manipulation.

**UNIT – IV**

Recent trends in GI sciences- web gis, mobile, computer cartography, GPS, mobile, mapping mobile application.

Application of GIS – GIS science and society, networkmodelling, environmental modelling, geomorphologic and land use and land cover mapping.

**Books Recommended:-**

1. Pratt. W.k. Digital image processing, john wilry and sons, newyork, 1995
2. Ayery. T.e. : introduction to aerial photographs
3. Jones , C : geographical information sysyemand computer cartyography
4. Aronoff, s. : geographic information system – a management perspective

**EXAM STRUCTURE GEOGRAPHY – TOTAL CREDITS****Core Course**

Code	Title of Course/Paper	Credit	Marks	
			Internal	External
MGGC-401	Uttarakhand – A Regional Analysis	03	40	60
MGGC-402	Dissertation	03	40	60
MGGL-401	Practice IV – Surveying and Weather Analysis	03	40	60
	<b>Total</b>	<b>09</b>	<b>120</b>	<b>180</b>

**Elective Course**

Code	Title of Course/Paper	Credit	Marks	
			Internal	External
<b>Elective Course</b>	<b>Any three of the following elective (options) courses</b>			
MGGE-404	Human Ecology & Sustainable Development	03	40	60
MGGE-405	Regional Planning & Development	03	40	60
MGGE-406	Oceanography	03	40	60
MGGE-407	Population Geography	03	40	60
MGGE-408	Geography of Rural Settlements and Central Places	03	40	60
MGGE-409	Agriculture Geography	03	40	60
MGGE-410	Glacial Geomorphology	03	40	60
MGGE-411	Geography of Tourism and Recreation	03	40	60
	<b>Total</b>	<b>3x3=9</b>	<b>40x3=120</b>	<b>60x3=180</b>
<b>Self-Study Course</b>				
MGGS- 401	Medical Geography (Qualifying)	03	40	60

**UTTARAKHAND – A REGIONAL ANALYSIS**

**MGGC-401**

**Note :** The paper consists of four units. 4 long, 6 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

**UNIT – I**

Geo Political setting, Historical Outline, Geo Physical Setting, Geological structure, Geomorphic Characteristics, Processes and features and physiographic region Drainage – River system and basin, Characteristics and water volume, Climate, Natural Vegetation, Soil, Glaciers and Lakes

**UNIT – II**

Population, growth and distribution, density, age, sex structures , Literacy and Education, Cultural Appraisal, rural out migration, rural settlement, Type, Patterns and urbanization, occupational structure Harsh Nature of Environment and its influence on Socio – Economic aspects of Life, Tribes

**UNIT – III**

Land use, Agriculture, Constraints of Agrarian Economy, Money order economy and Role of Women in Hill economy, Important crops, animal husbandry, forestry, Horticulture mixed farming system, poverty, Transport, Tourism and Pilgrimage, Important Natural Resources, Industries, Hydropower projects – Tehri Dam, Vishnuprayag and AHPP Srinagar

**UNIT – IV**

Environmental Constraints in the Framework of Man- Nature interaction, Disaster, Regional Disparities in Development, Hill Development planning, problems and limitation of Development, Movement of Environment conservation, Environment V/S Economic Development, Waste Land Expansion after the creation of Uttarakhand State, Contemporary issues.

**Books Recommended:**

1. **Lal, J.S. & Moddie** :The Himalaya Aspect of Change A.D. (ed)
2. **Bhatt, H.P. & Bhatt Sangeeta** :Environmental Dimensions of Rural Settlements in the Himalaya in 1993
3. **Bhatt, H.P. & Bhatt Sangeeta (1992)** :Environment – Yesterday, Today and Tomorrow, Galgotia Publication, New Delhi
4. **Bose, S.C.** :Land and People of the Himalaya.
5. **Kayastha, S.** :The Himalayan Beas Basin
6. **Singh O.P. (ed)** :The Himalaya Nature, Man & Culture

- 7. Joshi, S.C. and others** :KumaunHimalay
- 8. Nitynnand& Kumar, K.** : The Holy Himalaya – Geographical Interpretation of Garhwal Himalaya.
- 9. Kharkwel, S.C.** : Uttarakhand – Physico – Culture Complex.
- 10. Mathani, D.D.** : Central Himalaya : Ecology, Environmental Resources and Development.
- 11. Rawat, M.S.S. (ed)** :Central Himalaya – Environment Development Vol. I

**Dissertation**

**MGGC-402**

Topic of dissertation will be assigned by HOD or Supervisor of the department of the dept Concerned. Area of study shall be the Himalayan region preferably.

**Distribution of Marks :**

**Periodical Presentation (Internal Assessment) - 20 Marks**

**Dissertation** - 60 Marks  
**Power Point / Viva Voce** - 20 Marks

**Objective :**

- 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.

## Field Based (Dissertation )

The Students should be sensitized about the methodology, synopsis preparers, Mapping exercise, data collection. 10 Minutes Power Point presentations on the Dissertation work are compulsory for the students. Students will also submit precise Dissertation Report along with maps, diagrams and at least 100 pages report. Supervisor will be allotted by HoD concern.

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.

## Practical – IV (Surveying and Weather analysis) MGGL-401

The syllabi for Practical is divided into two sections: Section A and B

A is related to field work. Candidate will have to attempt two exercises of Surveying form section A of 02 Hours Duration and two exercises of Section B of 01 Hour duration

### Section A :Field Work

1. **Plane Table Survey:** Two Point and three point problem. Triangulation and determination of heights and contouring with clinometers.
2. **Prismatic Compass Survey:** Closes Traverse error adjustment by Bowditch method and trigonometry.
3. **Dumpy level survey :**Contouring and Profile drawing

### Section B :Laboratory Work

1. GPS : Handling usages, GPS based data acquisition, GPS System and application
2. Altimeter (Hi – teach with precision) : Handling and use

Interpretation of Indian daily weather maps through the study of thermal and cloud conditions and pressure system, Weather forecasting method.

#### Distribution of Marks :

<b>Surveying (Two Exercises)</b>	– 15
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<b>Lab Work (Two Exercise)</b>	– 10
<b>Survey Camp</b>	– 20
<b>Sessional Record (min)</b>	– 10
<b>Viva – Voce</b>	- 05

**Note :**

- 1.** In all 20 exercises form both the parts A and B shall constitute the sessional record covering all sub sections
- 2.** Candidate shall attend (Compulsory) field training (Survey camp) of at least seven days duration in a suitable area handling different survey instruments. They shall prepare minimum 5 exercises (Survey camp) belonging to the original field survey.
- 3.** Survey camp work will be evaluated at the time of the end semester Practical exam.

**NOTE:CANDIDATE WILL HAVE TO SELECT ANY THREE OF THE FOLLOWING  
ELECTIVE (OPTIONAL COURSE)**

**Regional Planning and Development**

**MGGE-405**

**Note :** The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

**UNIT – I**

Concept, Scope and Typology of Planning, Regional Planning- its Philosophy and purpose, Theoretical and operational frame work of Regional Planning, Approaches to regional planning, Historical Development of Regional Planning, Geography and its role in regional planning and development

**UNIT – II**

Methodology and techniques of regional planning, Analytical techniques and procedural techniques, Principles of Regionalization, Planning Processes – sectoral ad spatial planning, short – term and long term perspective planning, Multi Regional, Multi – level and Decentralize Planning

**UNIT – III**

Regional Development Strategies : Identification of planning regions , Regional Planning strategies for backward area – Hill area, tribal area case studies of planning program, achievements, problems and prospects from Japan and China

**UNIT – IV**

Spatial inequalities and regional imbalances in India : Problems of Regional planning, indicators and level of regional development, Dilema of Development of Problem areas, Regional Planning & Development in India, Region Planning and Development strategies in the 21<sup>st</sup> Century.

**Books Recommended:**

- 1. Johnsn, E.A.J. :**The Organization of Space in Development Countries, Harward University PressCambridge, 1970
- 2. Kuhilnski, A.R. (ed):** Growth Poles and Growth Centers in Regional Planning, Mouton, The Hague,1972

3. **Misra, R.P. et al** :Regional Planning : Concepts, Techniques and Policies, University of Mysore, Mysore, 1969
4. **Misra, R.P. et al** :Multi Level Planning, Heritage Publishers, Delhi, 1930
5. **Hall, Peter** :Urban and Regional Planning, Penguin Books Ins, New York
7. **Shorts, J.G.M. Hill** :Regional Planning, University Press, Rotterdam. Blackwell  
**Glasson John** :Regional Planning, Hutchison, London
8. **Mishra, R.P.** : Development Issues of our time, Concept Pub. Co. New Delhi
9. **Alden, J. and Morgan, R.** :Regional Planning : A Comprehensive View, Leonard, Hill Bed Beds, 1974

## **Oceanography**

## **MGGE-406**

**Note :** The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

### **UNIT – I**

Meaning, Objective, Scope and Significance of Oceanography, Submarine topography, Configuration of pacific, Indian and Atlantic Ocean Floors, sea Floor Spreading

### **UNIT – II**

Ocean Salinity, Temperature, Currents, Tides, Ocean Deposits and Coral Reefs

### **UNIT – III**

Marine Resources, Mineral, Biotic and Energy and their conservation, Marine Pollution and Ocean dumping

### **UNIT – IV**

Ocean Routes and World Economics, laws of the seas, Global Warming and Transgretium of seas, Tsunamies and Elnino, Seal level change, Contemporary issues.

### **Books Recommended:**

1. **Davis, R.J.A. : 1986 - Oceanography** -An Introduction of the Marine EnviromementWin.C. Brown,Lowa

2. **Griffiths, J.F. : 1976** - Applied Climatology, Oxford Press, New York
3. **Huntington, E. and S.S. Visher : 1922** - Climate Change, Yale University Press
4. **Hussain, T. and Tahir, M. : 2003** - Oceanography, Jawahar, New Delhi
5. **Kings, C.A.M. : 1963** - An Introduction to Oceanography, McGraw, New York
6. **Lamb, H.H. : 1972** - Climate - Present, Past and Future, Methuen London
7. **Biddhartha, K. : 1999** - Oceanography – A Brief Introduction, Kisalya Publication, New Delhi
8. **Singh, S. : 2002** - Physical Geography, Prayag Publication, Allahabad
9. **Trewartha, G.T. :1968** - An Introduction to Climate, McGraw, New York
10. **Weyl, P.K. : 1970 - Oceanography** – An Introduction of the Marine Environment, John W. and Sons, London.

## **Population Geography**

## **MGGE-407**

**Note :** The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

### **UNIT – I**

Nature, Scope and Significance of Population Geography, 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 – Development and developed countries with special reference to Japan and India, Population as Social Capital, Human Development Index, National Population Policy

**Books Recommended:**

1. **Chandna, R.C.** :A Geography of Population, Concept, Determinants and Patterns, KalyaniPublication, 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. &VlassoffM.** :Population Development Nexus in India : Challenges for theMilliennium, Tata Mc Graw Hill, New Delhi, 2001
6. **Srinivasan, K.** :Demographic Techniques and Applications, Sage Publication, New Delhi, 1998
7. **Sundaram, K.V. and Nangla, Sudesh (ed)** :Population Geography, Heritage Publication, 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

**Agriculture Geography****MGGE-409**

**Note** : The paper consists of four units.4 long,5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

**UNIT – I**

Nature, Scope, significance and development of Agricultural geography, Origin and Dispersal of Agriculture – major agriculture hearths, Diffusion of Agriculture innovation, 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 agriculture location: Von Thunen's Model and its modification – Sinclair's approach, concept of agriculture region, Whittlesey's classification of agriculture regions, Agricultural typology Mix Cropping, Crop – rotation and eco farming.

**UNIT – IV**

**Agriculture in India:** Land use and shifting cropping Pattern, New trends in India Agriculture – Greenrevolution, White revolution, Nutritional Index, Problems of India Agriculture, Agriculture Policy in India, 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. **Gigg, D.B.** :The Agricultural System of the World, Cambridge University Press, New York, 1974
4. **Mannion, A.M.** :Agriculture and Environment Change, John Wile, London, 1995
5. **Morgan, W.B.** :Agriculture in the Third World – A Spatial Analysis, West Press,
- 6 **Singh, B.B.** :Krishi Bhoogol, GyanodayPrakashan, Gorakhpur
7. **Kumar, Pramila evm Sharma, S.K.** :Krishi Bhoogol, Hindi Granth Academy, Bhopal
8. **Tiwari, R.C. and Singh, B.N.** :Krishi Bhoogol, PrayagPustak Bhawan, Allahabad

9. and Food – Global Trends and Future Prospects, Routledge, London, 1997

## **Geography of Tourism & Recreation**

**MGGE-410**

**Note :** The paper consists of four units. 4 long, 5 short & 10 very short questions will be set from all unit. The candidates will be required to attempt all section.

### **UNIT – I**

**Tourism and Recreation** – meaning and Definitions, Development of Geography of Tourism and Recreation, Approaches to the study and models of Tourism, Present Tourism Trends, Its relation with other branches of Geography

### **UNIT – II**

Tourism Types : Cultural, Eco- tourism- coastal and adventure tourism, National and International tourism, Globalization and Tourism, Tourism as an industry structural components and characteristics, International tourism and Political Fallouts

### **UNIT – III**

**Development of Tourism in Himalayas:** Potentials and Promotion of Tourism – Pilgrimage Tourism as a process of Development and Change in Hill region : Futuristic Tourism Himalayas. Impact of Tourism – Environmental, Economic and Socio- Cultural, Case Study of Mussorie and Nainital

### **UNIT – IV**

**Planning of Tourism** – conflicting issues of Development, Concept of Green Tourism, Eco Tourism Sustainable tourism: Community participation: Role of Foreign capital and impact of Globalization on Tourism, Contemporary issues

### **Books Recommended:**

1. **Hall, C.M. and Page, S.J.** :The Geography of Tourism and Recreation, Environment, Place and Space, Routledge, London, 1999
2. **Shaw, G. and Williams, A.M.** :Critical issues in Tourism : A Geographical Perspective Blackwell, Oxford, 1994
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