

**GOVT.DIGVIJAY AUTONOMOUS PG COLLEGE**  
**RAJNANDGAON (C.G.)**

**DEPARTMENT OF GEOGRAPHY**

**SYLLABUS FOR**

**THE TWO - YEAR POST GRADUATE PROGRAMME**

**M.A. (SEMESTER - I, II, III, IV)**

**Session 2025-26**



**Member of Board of Study – Geography**

Chairperson/ HOD : Narendra Kumar Sakre

Dr. S. Jenamani

Subject Expert: Dr. Shushma Yadav

Dr. Shraddha Devi Sahu

Subject Expert: Dr. K.K. Dwivedi

Dr. Kuber Singh Gurupanch

Subject Expert: Dr. Anil Kumar Mishra

**Govt. Digvijay PG Autonomous College**

**Rajnandgaon (C.G.)**

**Department of Geography**

**P. G. Syllabus & Scheme of Semester System**

**Session – 2025- 2026**

**Members of Board of Study – Geography**

Chairperson/HOD: Dr. S.JENAMANI

Subject Expert: Dr. Shushma Yadav

Dr. K. K. Dwivedi

Dr. Narendra Sakhre

Dr .Anil Kumar Mishra

Dr. K. S. Gurupanch

Dr. Shraddha Devi Sahu

Shri Hemraj Daura

**M. A. GEOGRAPHY** Govt. Digvijay PG Autonomous College Rajnandgaon (C.G.)  
Syllabus & Scheme of Semester System - Session - 2024 -2025

1. The Degree shell be called M.A. (Geography).
2. The course is based on semester system having two semesters in each year.
3. Each semester will have 4 theory papers of 100 marks each. Students will have Optional Paper in III Semester, where he/she has to choose either XIII -A or XIII -B.

Marks of the theory papers have been divided into two parts:

- End Semester Exam -80 marks
- Internal Assessment- 20 marks

I. A. includes Written Test, Seminar, Project/Assignment and Attendance; each carrying 20 marks. Its average is taken for result preparation.

4. There shall be one practical paper of 100 marks in each semester.

Sem	Paper	Course Code	Title	Marks & Credit Distribution			
				Written	Internal	Total	Credit
I	I	PGECT 101	Geomorphology	80	20	100	4
	II	PGECT 102	Climatology	80	20	100	4
	III	PGECT 103	History of Geographical Thought	80	20	100	4
	IV	PGECT 104	Advanced Geography of India	80	20	100	4
	V	PGECT 105	Practical-I Advanced Cartography	-	-	100	4
II	VI	PGECT 201	Economic Geography and Natural Resource Management	80	20	100	4
	VII	PGECT 202	Oceanography	80	20	100	4
	VIII	PGECT 203	Social Geography	80	20	100	4
	IX	PGECT 204	Regional Development and Planning	80	20	100	4
	X	PGECT 205	Practical-II Map Projection, Interpretation & Surveying	-	-	100	4
III	XI	PGECT 301	Population Geography	80	20	100	4
	XII	PGECT 302	Settlement Geography	80	20	100	4
XIII -A	XIII -A	PGECT 303	Remote Sensing Techniques	80	20	100	4
	XII- B	PGECT 303	Bio-Geography	80	20	100	4
	XIV	PGECT 304	Research Methodology	80	20	100	4
	XV	PGECT 305	Statistical Techniques	-	-	100	4
	XVI	PGECT 401	Urban Geography	80	20	100	4
IV	XVII	PGECT 402	Agriculture Geography	80	20	100	4
	XVIII	PGECT 403	Health Geography	80	20	100	4
	XIX	PGECT 404	Socio-Economic Survey Report	-	-	100	4
	XX	PGECT 405	Remote Sensing and G.I.S.	-	-	100	4
TOTAL MARKS				2000	800		

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**M.A. GEOGRAPHY**  
**SEMESTER - I**  
**Govt. Digvijay PG Autonomous College Rajnandgaon (C.G.)**

**Department of Geography**

**Syllabus & Scheme of Semester System - Session – 2024 -2025**

1. The Degree shall be called M.A. (Geography).
2. The course is based on semester system having two semesters in each year.
3. Each semester will have 4 theory papers of 100 marks each.

Marks of the theory papers have been divided into two parts:

- End Semester Exam -80 marks

- Internal Assessment- 20 marks

I. A. includes Written Test, Seminar, Project/Assignment and Attendance; each carrying 20 marks. Its average is taken for result preparation.

4. There shall be one practical paper of 100 marks in each semester.

M.A. Geography Semester-I shall consist the following papers :

S. No.	Paper	Course Code	Title	Marks & Credit			
				Written	Internal	Total	Credit
01	I	PGECT 101	Geomorphology	80	20	100	4
02	II	PGECT 102	Climatology	80	20	100	4
03	III	PGECT 103	History of Geographical Thought	80	20	100	4
04	IV	PGECT 104	Advanced Geography of India	80	20	100	4
05	V	PGECT 105	Practical-I Advanced Cartography	-	-	100	4

1. The M.A. Semester-I exam in Geography shall consist of 500 marks.

There shall be four theory papers of 100 marks each and one practical of 100 marks as given in the above Table.

2. The theory papers shall be of three hours duration.
3. Candidates will be required to pass separately in theory and practical examinations.
4. (a) In the practical examination the following shall be the allotment of time and marks.

(i) Practical record 20% 20

(ii) Lab work (up to 4 hours) 70% 70

(iii) Viva on (i) and second (ii) above 10% 10

- (b) The external and internal examiners shall jointly submit their marks.

- (c) All the candidates shall present at the time of the practical examination.

Along with their practical record regularly signed by the teachers concerned.

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**PAPER - I**  
**Course Code - PGECT 101**  
**GEOMORPHOLOGY**

**Max. Marks End Semester : 80**

**UNIT-1** Nature, Scope and Fundamental Concepts of Geomorphology, Interior of the Earth:  
Swess, Gutenberg, International Union of Geodesy and Geo-Physics.

**UNIT-2** Continental Drift: F B Taylor and Alfred Wegner. Isostasy: Pratt and Airy. Plate  
Tectonics, Earthquakes, Volcanoes,

**UNIT-3** Concept of Gradation: Weathering, Mass Wasting and Erosion.  
Cycle of Erosion: W.M. Davis and Walter Penck.

Erosional Landforms: Fluvial, Aeolian, Marine (Costal), Glacial And Karst

**Unit -4** Soil Formation. Slope Evolution, Evolution of Drainage. Climatic Geomorphology.  
Applied Geomorphology- Hydro - and Urban Geomorphology.

**SUGGESTED READINGS:-**

1. Ahmed, E. : Coastal Geomorphology of India.
2. Chorley, R. J. : Spatial Analysis in Geomorphology, Methuen, London, 1972.
3. Cooke R.U. and Doornkamp, J.C. : Geomorphology in Environmental Management. An Introduction.  
Clarendon Press, Oxford, 1974.
4. Thornbury, W.D. Principles of Geomorphology, John Wiloy, New York, 1960.
5. Fairbridge, R.W. Encyclopedia of Geomorphology, Reinholdts, New York, 1968.
6. Goudie, A. : The Nature of the Environment Oxford & Blackwell, London, 1993.
7. Garner, H.F. : The Origin of landscape- A Synthesis of Geomorphology, Oxford Univ. Press.  
London, 1974.
8. Mitchell, C.W. : Terrain Evaluation. Longman, London, 1973.
9. Ollier, C.D. : Weathering, Longman, London, 1979.
10. Pitty, A.F. : Introduction to Geomorphology, Methuen, London, 1971.
11. Stoddart, D.R. (ed.) : Process and Form in Geomorphology, Roulledge, New York, 1996.
12. . Thornbury, W.D. Principles of Geomorphology, John Wiloy, New York, 1960.
13. . Strahler, A.N. : Physical Geography, Willey, New York.
14. Sharma. H.S. (ed.) : Perspectives in Geomorphology, Concept, New Delhi, 1980.

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## PAPER - II

Course Code - PGECT 102

### CLIMATOLOGY

Max. Marks End Semester: 80

**Unit I :** Meaning, Definition, Nature and Scope of Climatology. Difference between Climate and Weather. Atmosphere: Its Composition and Structure. Heat Budget. Temperature: Vertical and Horizontal Distribution.

**Unit II:** Atmospheric Circulation. Air Pressure Belts. Air Masses. Atmospheric Disturbances: Tropical and Temperate Cyclones. Theory of Monsoon Winds: Thermal, ITCZ and Jet Stream. EL Nino And La Nina,

**Unit III:** Climatic Classification on the Basis of Temperature and Rainfall.

Climatic Classification of Koeppen and Thornthwaite. Major World Climates: Equatorial. Monsoon, Savannah, Hot Desert, Mediterranean, Tundra .

**Unit IV:** Climatic Changes during Geological and Historical Times. Global Warming. Acid Rain. Green House Effects. Micro Climate. Applied Climatology.

#### SUGGESTED READINGS :

1. Barry, R.G. and Chorley P.J.; Atmosphere, Weather and Climate, Routledge, London and New York. 1998.
2. Critchfield, J.H. : General Climatology, Prentice Hall, India, New Delhi, 1993.
3. Das, P.K. : Monsoons National Book Trust, New Delhi, 1987.
4. Fein, J.S. and Stephens, P.N. : Monsoons. Wiley Interscience, 1987.
5. India Met. Deptt. : Climatological Tables of Observatories in India, Govt. of India 1968.
6. Lal, D.S. : Climatology, Chaitanya Publications, Allahabad, 1986.
7. Lydolph, P.E. : The Climate of the Earth, Rowman, 1985.
8. Menon, P.A. : Our Weather, N.B.T., New Delhi, 1989.
9. Peterson, S. : Introduction to Meteorology, Mc Graw Hill Book, London, 1969.
10. Robinson, P.J. and Henderson S. : Contemporary Climatology, Henlow, 1999.

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PAPER – III

Course Code - PGECT 103

HISTORY OF GEOGRAPHICAL THOUGHT

Max. Marks End Semester: 80

**Unit I:** Nature and Scope of Geography, Place of Geography in the Classification of Science. Concepts in Geography: Science of Relationship, Areal Differentiation, Spatial Distribution, Interaction. Spatial Organization.

**Unit II:** Contribution of Greeks: Eratosthenes.

Contribution of Romans : Ptolemy.      **Dark Age in Geography**

Geographical Knowledge in the Ancient Indian Literature.

Contribution of the Arab Geographers : Al Beruni, Al Idrishi, Ibn Battuta,

**Unit III:** Schools of Thoughts in Modern Geography:

i German School : Humboldt, Ritter and Ratzel    ii French School: Blache, Demangeon

iii Anglo-American : J. F. Mackinder, W M Davis, Miss Ellen Churchill Semple,

**Unit IV:** Determinism, Possibilism and Neo-Determinism. Dualism in Geography: Physical vs. Human. Systematic vs. Regional. Quantitative Revolution.

**SUGGESTED READINGS :**

1. Jain, S. M. Bhaugolik Chintan evam Vidhitantra, Sahitya Bhavan Publications, Agra.
2. Ali S.M. : The Geography of Puranas, Peoples Publishing House, Delhi, 1968.
3. Hussain, Majid Bhaugolik Chinta ka itihās, Rawat Publications, New Delhi.
4. Dikshit, R.D. (ed.) : The Art & Science of Geography Rand McNally & Co., 1959.
5. Hartshorne, R. : Perspectives on Nature of Geography Rand McNally & Co., 1959.
6. Husain, M. : Evolution of Geographic Thought, Rawat Pub., Jaipur, 1984.
7. Bansal, Suresh Chandra - Bhaugolik Chintan ke Multatva, Meenakshi Prakashan, Meerut.
8. Johnston, R.J. : The Future of Geography, Methuen, London, 1988.
9. Minshull, R. : The Changing Nature of Geography, Hutchinson University Library, London, 1970.
10. Ali, S. M. : Arab Geography.
11. Taylor, G. : Geography in the 20<sup>th</sup> Century.
12. Panda, B. P. & L N Verma - Bhaugolik Vichardharaon ka Itihas, M. P. Hindi Granth Academy, Bhopal
13. Harvey D. : Explanation in Geography.

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PAPER – IV

Course Code - PGECT 104

ADVANCED GEOGRAPHY OF INDIA

Max. Marks End Semester: 80

Unit I : Physical Elements : Geological Structure, Relief Features: The Himalayas, The Great Plains and the Deccan Plateau. Monsoon Climate: Origin and Features. Drainage. Vegetation and Soils: Types.

Unit II : Physical Resources: Water, Minerals (, Iron-ore, Manganese, Bauxite ). Energy( Coal, Petroleum & Natural Gas, Atomic, Solar and Wind)

Unit III : a. Agriculture : Major Crops - Wheat, Rice, Cotton, Sugarcane, and Tea  
Agricultural Regions.

b. Major Industries: Iron & Steel, Cement, Cotton, Sugar, Paper. Industrial Regions.

Unit IV : Socio-Cultural Attributes:

- Population: Distribution, Density and Growth,
- Transportation- Roads, Railways and Airways.
- Regionalization of India- O H K Spate, R L Singh.
- Regional Studies- Malabar, Thar Desert, Chhattisgarh.

SUGGESTED READINGS :

1. Centre for Science & Environment (1988) State of India's Environment, New Delhi.
2. Desphande C.D. India : a Regional Interpretation ICSSR & Northern Book Centre 1992.
3. Dreza, Jean & Amartya Sen (ed.) India Economic Development and Social opportunity Oxford University Person, New Delhi. 1996.
4. Kundu A. Moonis Raza: Indian Economy : the Regional Dimension, Speculum Publishers. New Delhi. 1992.
5. Robinson, Frances : The Cambridge Encyclopaedia of India, Pakistan, Bangladesh, Sri Lanka, Nepal, Bhutan & Maldives Cambridge University Press, London, 1989.
6. Singh R.L. (ed.): India - A Regional Geography, NGSI, Varanasi, 1971.
7. Spate OHK & ATA Learmonth-India & Pakistan Methuen, London. 1967.
8. Tirtha, R. & Gopal Krishna, Emerging India Reprinted by Rawat Publications, Jaipur 1996.

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**PAPER - V**

**Course Code - PGECT 105**

**PRACTICAL : ADVANCED CARTOGRAPHY**

**Max. Marks End Semester : 100**

**Graphs and Diagrams :** Triangular graph. Logarithmic Graphs, Scatter Graphs;

Climatograph. Proportional Circles, Spheres and Cubes.

**Thematic Maps :** Choropleth Maps, Isolines, Flow Maps, Iso-chrones..

**Morphometric Analysis :** Profiles, Slope Analysis; Altimetric Curves.

**SUGGESTED READING :**

1. Monk house F.J. & H.R. Wilkinson : Maps and Diagrams, Methuen, London.
2. Shrama J.P. Practical Geography.

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## M.A. GEOGRAPHY

### SEMESTER - II

M.A. Geography Semester-II shall consist the following papers :

Paper	Course Code	Title	Marks			Credits
			Written	Internal	Total	
VI	PGECT 201	Economic Geography and Natural Resource Management	80	20	100	4
VII	PGECT 202	Oceanography	80	20	100	4
VIII	PGECT 203	Social Geography	80	20	100	4
IX	PGECT 204	Regional Development and planning	80	20	100	4
X	PGECT 205	Practical-II Map Projection, Interpretation and Surveying	-	-	100	4

1. The M.A. Semester-II examination in Geography shall consist of 500 marks.

There shall be four theory papers of 100 marks each and one practical of 100 marks as given in the above Table.

2. The theory papers shall be of three hours duration.

3. Candidates will be required to pass separately in theory and practical examinations.

4. (a) In the practical examination the following shall be the allotment of time and marks.

(i) Practical record	20%	20
(ii) Lab work (up to 4 hours)	70%	70
(iii) Viva on (i) and second (ii) above	10%	10

(b) The external and internal examiners shall jointly submit their marks.

(c) All the candidates shall present at the time of the practical examination.

Along with their practical record regularly signed by the teachers concerned.

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**PAPER – VI**  
**Course Code - PGECT 201**  
**Economic Geography and Natural Resource Management**

**Max. Marks End Semester: 80**

- Unit I:** Meaning, Definition, Natural and Scope of Economic Geography; Fundamental Concepts of Economic Geography; Approaches of Economic Geography. Classification of Economies, Sector of Economy (Primary, Secondary and Tertiary).
- Unit II:** Meaning, Definition, Natural and Classification of Resources Natural Resources and Economic Development: Resource Adequacy and Scarcity.  
Concept of Resource Utilization : Optimum use, under use, overuse.
- Unit III:** A :- World Major Natural Resources and Its management Soil, Forests, Water.  
Minerals (Iron ore) and Energy (Coal, Hydal).  
B:- Industrial Location Theory – Alfred Weber, August Losch, David M. Smith, Walter Izard.
- Unit IV:** A :- Means of transport: Roads, Railways and Waterways, International trade; Import and Export  
B :- Industrial Region of India, WTO and India.

**SUGGESTED READINGS :**

1. Ahemd, Jaleel: Natural Resource in Low Income Countries.
2. Bennet' II.II.- Element of soil conservation.
3. Ciriacy, wantrup, S.V. & persons (eds) - Natural Resource quality and quantity.
4. Edvard, and rosers – Agriculture Resource.
5. Owens, O.S.-Natural Resource.

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**PAPER - VII**  
**Course Code - PGECT 202**  
**OCEANOGRAPHY**

**Max. Marks End Semester : 80**

- Unit I:** Nature and Scope of Oceanography; Historical Development of Oceanography. Major Features of Ocean Basins: General and of the Pacific, Atlantic and Indian Ocean. Marine Deposits.
- Unit II :** Physical and Chemical Properties of Sea Water: Temperature and Salinity. Ocean Water Circulation - Ocean Currents: Origin and Distribution ( Pacific, Atlantic and Indian), Tides: Types and Theories of Origin – Equilibrium. Progressive and Stationary.
- Unit III :** Marine Biological Environment : Bio-zones, Types of Organisms: Plankton. Nekton and Benthos. Coral - Reefs  
Food and Mineral Resources of the Sea.
- Unit IV :** Major Marine Environment: Estuary, Deltas. Impact of Human on the Marine Environment: Marine Pollution, Marine Ecology, Over Fishing and Sea Level Change: Causes and Its Impact. Law of the Sea.

**SUGGESTED READINGS :**

1. Davis Rechar J.A. : "Oceanography-An Introduction to the Marine Environment". C. Brown Iowa, 1986.
2. Duxbury, C.A. and Duxbury B. : An Introduction to the world's Oceans- C. Brown. Iowa , 1986.
3. Garrison, T. : "Oceanography - An Introduction to Marine Science" Books/Cole, Pacific Grove. USA, 2001.
4. Gross, M. Grant : Oceanography, a View of the earth, prantice-Hall inc, New Jersey, 1987.
5. King C.A.M. Oceanography for Geographers 1962.
6. Sharma, R. C. "The Oceans", Rajesh N. Delhi, 1985.
7. Ummerkutty, A.N.P. Science of the Oceans and Human life, NBT, New Delhi, 1985.
9. Sharma, R. C. & M. Vatal : Oceanography : A Brief Introduction kislāya Pub. New Delhi.
10. Siddartha, K. : Oceanography : A Brief Introduction, Kislyā Pub. New Delhi.

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## PAPER - VIII

Course Code - PGECT 203

### Social Geography

Max. Marks End Semester : 80

- Unit I:** Social Geography: Nature and Scope. Philosophical Bases of Social Geography: Structuralism, Radicalism, Humanism, Modernism.
- Unit II:** Geographical Bases of Social Formations- Structure, Process and Patterns: Role of Race, Caste, Religion and Languages in the Evolution of Socio-Cultural Regions in India. Social Transformation and Change in India.
- Unit III:** Physical Quality of Life, Human Development Index. Rural and Urban Deprivation in India with Respect to Health Care, Education and Shelter. Discrimination Issues of Women and Under- privileged Groups.
- Unit IV:** Policies and Planning: Social Policy in Five Year Plans and Area Plans. Strategies to Improve Social Well-being in Tribal Areas, Hill Areas. Drought – Prone Areas and Flood –Prone Areas.

### SUGGESTED READINGS

- Ahmad, Aijazddin 1999, Social Geography, Rawat Publication, New Delhi.
- Rao, MSA, 1970 Urban Sociology in India, Orient Longman, New Delhi
- Dubey, S.C. 1991 Indian Society, National Book Trust, New Delhi
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PAPER – IX PAPER - IX  
Course Code - PGECT 204

**REGIONAL DEVELOPMENT AND PLANNING**

Max. Marks End Semester: 80

- Unit I :** Regional Planning : Meaning, Definition, Nature, Scope, Aims, Approaches and Its Evolution. Russian Experience of Planning..
- Unit II :** Theory of Growth Pole and Growth Centre.  
Development Theory – Friedman, Myrdal, Frank and Hirschman.
- Unit III :** Planning in India: Planning Regions in India - C.S. Chandrashekhar. Ashok Mitra, L.S. Bhatt & V L S Prakash Rao, P.Sengupta & Galina Sadasyuk.  
Multi level Planning in India. Regional Planning in Five Year Plans.  
Intra- and Inter Regional Disparity in Development in India.
- Unit IV :** Regional Development Policy and Programmes - Tribal Area, Flood-Prone Area. Drought- Prone Area, Hill Area and Damodar River Valley (DVC).

**RECOMMENDED READINGS -**

3. Freeman, E.W. : Geography and Planning.
6. Stamp.L.D. : The Land of Britain : Its use and Misure.
7. Sdasyuk. Galina and Dengupta, P. : Economic Regionalization of India problems and Approches.
8. Desai, P.B. & Others : Regional Perspective of Industrial and Urban Growth the case of Kanpur. Bombay, 1969.
9. Prakash, Rao V.L. & S.P. : Regional Planning.
10. Census of India : Economic and Socio- Cultural Dimensions of Regionalisation (An Indo-USSR Colaborative Study)
11. Friedmann J. & Alonsow : Regional Development and Planning, M.I.T. Press.
12. Misra R.P. (ed.): Regionl Planning: Concept, Techniques, Policies & Case Studies Mysore 1969.
13. Misra, R.P. & others : Regional Development and Planning in India.
14. Chandna, R.C. Pradeshik Niyojan evam Vikas, Kalyani Publication
15. Maurya, S. D. Pradeshik Niyojan evam Vikas, Pravalika Publication, Prayagraj.
16. Bhatt L.S. and others : Micro level planning - A Case Study of Karnal Area, Hyryana (K.B. Publishing, New Delhi)

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**PRACTICAL-II : MAP PROJECTIONS, INTERPRETATION AND SURVEYING**

**Max. marks End Semester : 100**

**Map Projections :** Mathematical /Graphical Construction of World Projections.

**Interpretation of Maps :** Geological Maps and Topographical Sheets.

**Principles and Methods of Topographical Surveying-** Theodolite and Dumpy Level. Solution of Problems in Surveying.

**SUGGESTED READINGS :**

1. Davis, R. C. & E. S. Forte : Surveying : Theory and Practical.
2. Kanetkar, T.R. & S.V. Kulkarni : Surveying and levelling part I & II A.V.G. Prakashan. Poona.
3. Monkhouse F.J. & H.R. Wilkinson : Maps and Diagrams, Methuen, London.
4. Sharma G P Practical Geography

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## M.A. GEOGRAPHY

### SEMESTER - III

M.A. Geography Semester-III shall consist the following papers :

Paper.	Course Code	Title	Marks			Credits
			Written	Internal	Total	
XI	PGECT 301	Population Geography	80	20	100	4
XII	PGECT 301	Settlement Geography	80	20	100	4
XIII_A	PGECT 301	Remote Sensing Techniques	80	20	100	4
XIII - B	PGECT 301	Bio- Geography	80	20	100	4
XIV	PGECT 301	Research Methodology	80	20	100	4
XV	PGECT 301	Statistical Techniques	-	-	100	4

1. The M.A. Semester-III examination in Geography shall consist of 500 marks.

There shall be four theory papers of 100 marks each and one practical of 100 marks as given in the above Table. **Students have an optional Paper in Paper XIII, where he/she has to choose one.**

2. The theory papers shall be of three hours duration.

3. Candidates will be required to pass separately in theory and practical examinations.

4. (a) In the practical examination the following shall be the allotment of time and marks.

(i) Practical record	20%	20
(ii) Lab work (up to 4 hours)	70%	70
(iii) Viva on (i) and second (ii) above	10%	10

(b) The external and internal examiners shall jointly submit their marks.

(c) All the candidates shall present at the time of the practical examination.

Along with their practical record regularly signed by the teachers concerned.

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PAPER - XI  
Course Code - PGECT 301  
POPULATION GEOGRAPHY

Max. Marks End Semester : 80

- Unit I :** Meaning , Definition, Nature and scope of Population. Relation of Population Geography with other Social Sciences, Sources of Population Data: Census of India, National Sample Survey Organization, National Family Health Survey Civil Registration System and Vital Statistics.
- Unit II :** Concept of population: Distribution, Growth, Density, Fertility, Mortality and Migration.
- Unit III :** Population Composition: Age, sex, Marital, Occupation, Literacy and Rural-Urban in the World. Growth of population: Decennial and Annual. Population Projection.
- Unit IV :** Population Theory- Malthus, Sadler, Adwin Kerner. Optimal, Over and Under Population. Demographic Dividend. Demographic Transition.

**SUGGESTED READINGS -**

1. Bilasborrow, Richard E and Daniel Hogan, Population and Deorestation in the Humid Tropics. International Union for the Scientific Study of Population, Belgium 1999.
2. Bogua, D.J. Principles in Demography. John Wiley, New York 1969.
3. Bose, Ashish et al. : Population in India's Development (1947-2000); Vikas Publishing House, New Delhi, 1974.
4. Census of India, India : A State Profile, 1991.
5. Chandna, R. C. Geography of Population, Concepts, Determinants and Patterns. Kalyani Publishers. New York, 2000.
6. Clarke, John I. Population Geography, Pergamon Press, Oxford, 1973.
7. Crook, Nigel Principles of Population and Development Pergamon Press. New York 1997.
8. Garnier, B.J. Geography of Population Longman, London, 1970.
9. Mamoria, C.B. India's Population Problem, Kitab Mahal New Delhi, 1981.
10. Mitra, Ashok India's Population : Aspects of Quality and Control Vol I & II. Abhiman Publications. New Delhi, 1978.
11. Premi, M.K. India's Population : Heading Towards a Billion, B.R., Publishing Corporation 1991.
12. Sundaram K. V. and Sudesh Nangia. (ed.) Population Geography, Henlage Publications. Delhi. 1986.
13. UNDP : Human Development Report, Oxford University Press, Oxford, 2000.

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**PAPER - XII**  
**Course Code - PGECT 302**  
**SETTLEMENT GEOGRAPHY**

**Max. Marks End Semester: 80**

**Unit I:** Nature and Scope of Settlement Geography.

Concepts of Settlement: Rural Settlement, Urban Settlement, Hierarchy of Settlement.

Primate City and Morphology of Settlement.

Origin and Types of Settlement.

**Unit II :** Rural Settlements : Types and Patterns, Rural House Types.

Size and Spacing of Rural Settlements. Rural Problems and Planning.

**Unit III :** Urban Settlements: Evolution and Growth. Urban Centres: Site and Situation. Rank-Size Rule of Urban Settlements;

**Unit IV :** Cities as Central Places: Central Place Theory – Christaller and Losch.

City - Country Relationship: Umland, Rural-Urban Fringe,

**SUGGESTED READINGS :**

1. Abercrombee, Sir P. : Town and Country planning 1961.
2. Alam, Shah Manzoor : Hyderabad Secundrabad (Twin Cities) A study in urban geography)
3. Alam, S.M. & V.V. Pokshishevesky : Urbanization in developing countries.
4. Berry Brain J. L. : Geographic Prospectives on Urban Systems.
5. Bresse, C. & D.F. Whiteman : An approach to Urban Planning
6. Dickinson, R.E. : City, Religion and Regionalism.
7. Gallion and Fisher : The Urban Pattern.
8. Griffith, J.P. : A study of Urban constructions in India.
9. Gibbs : Urban Research Methods.
10. Mayor, H.M. & C.F. Kohn : Readings in Urban Geography.
11. Morgan, F. W. : Ports and Harbours.
12. Mumford L. : Culture of cities.
13. Robson, W.A. : Great cities of world.
14. Robson, B.T. : Urban Growth : An approach, methuen, London.
15. Carter, Harold : Study of Urban Geography, London, Edward Arnold, 1979.
16. Singh R.L. & K.N. Singh : Readings in Rural Settlement Geography, NGSI Varanasi, 1975.

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**Paper XIII – A**  
**Course Code - PGECT 303**  
**Remote Sensing Techniques**

**Max. Marks End Semester : 80**

**Unit I**

Historical Development of Remote Sensing as a Technology.  
Relevance of Remote Sensing in Geography.  
Concepts of Basics : Energy Source, Energy and Radiation Principle.  
Energy Interactions in the Atmosphere and Earth Surface Featured.  
Remote Sensing Systems : Platform Sensors.  
Microwave Sensing Interpretation of SLAR Imageries, Thermal Imageries.

**Unit II**

Remote Sensing Satellite : Platforms- LANDSAT, SPOT, NOAA, RADARSAT, IRS, INSAT.  
Principles of Scanners and CCD Arrays. Orbital Characteristics and Data Products – MSS, TM, LISS –I & LISS –II, SPOTPLA and MLA, SLAR.

**Unit III**

Image Processing. Types of Imagery. Techniques of Visual Interpretation. Ground Verification. transfer of interpreted Thematic Information to Base maps- Digital Processing. Rectification and Restoration, Image Enhancement - Contrast Manipulation. Classification: Supervised and Unsupervised, Post –Classification Analysis and Accuracy Assessment.

**Unit IV**

Application: Air Photo and Image Interpretation, Arid Mapping, Land—Use, and Cover, Land Evaluation, Urban Land-Use, Landform and Its Process, Weather Studies and Studies of Water Resources, Integration of Remote sensing and GIS. Remote sensing and Hazards Management. Remote sensing and Environmental Management.

**Reference**

Chauniyal, Devidutt Remote Sensing and Geographic Information System. In Hindi.

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## Paper XIII – B

Course Code - PGECT 303

### BIO-GEOGRAPHY

Max. Marks End Semester :80

**Unit I :** Definition and Scope of Bio-Geography. Habitat and Types. Plants-Animal Association.

Biome and its Types - Equatorial Rain Forest, Desert, Terrestrial, Aquatic and Grassland (Tropical and Temperate).

**Unit II :** Elements of Plant Geography. Distribution of Forests and Communities. Plant Successions in Newly Formed Landforms. Zoo-Geography:

**Unit III :** Ecosystem: Components and Function, Tropic level, Ecological Pyramids.

Ecological Niche, Energy and Nutrients in Ecosystem.

Food Chain and Food Webs.

**Unit IV :** Man – Environment Relationship: Resource use and Ecological Imbalance with

reference to soil, Forest and energy resource. Biodiversity and Its Conservation of the Ecosystems through Resource Management.

Environment Legislation: The stockhom Conference and the Earth Summit. Environment Laws in India ( the wild life act. Water Act., Environment Protection Act and National Environment Tribunal Act.)

#### Suggested Readings -

1. Chandana, R.C. 1998 : Environment Awareness, Klyani Publication, New Delhi.
2. Simmons, I.D. 1981 : Ecology to Natural Resources, Edward Arnold, London.
3. लक्ष्मीचंद अग्रवाल : जैव भूगोल।
4. होता : जैव भूगोल एवं पारिस्थितिकी।
5. बी. पी. राव : पर्यावरण एवं पारिस्थितिकी।
6. डॉ. विजय तिवारी : पर्यावरण अध्ययन, हिमालय पब्लिकेशन, मुम्बई।
7. डॉ. विजय तिवारी : पर्यावरण एवं पारिस्थितिकी, हिमालय पब्लिकेशन, मुम्बई।
8. डॉ. विजय तिवारी : पर्यावरण प्रदूषण अध्ययन, हिमालय पब्लिकेशन, मुम्बई।
9. AGRAWAL, D.P. : Man and Environment in India, through ages. Books & Books, 1992.
10. Cox. C.D. and Moore, P.D. : Biogeography; an ecology and evolutionary approach 5<sup>th</sup> edn. Bacwell, 1993.

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## Paper- XIV

Course Code - PGECT 304

Research Methodology

Max. Marks End Semester : 80

- Unit I : Nature and Scope of Research Methodology. Scientific Research: Procedure and Characteristics. Research Problem. Research Design.  
Hypothesis – Types. Sampling: Types.
- Unit II : Methods of Data Collection- Observation, Questionnaire, Schedule and Interview.
- Unit III : Measures of Dispersion: Mean Deviation, Standard Deviation and Coefficient of Variation.  
Correlation: Types , Product Moment, Rank Correlation and Carl Pearson's Co- efficient of Correlation. Linear Regression.
- Unit IV : Data- Processing and Analysis: Coding, Classification, Tabulation and Analysis.  
Preparation of Research Report. Report : Types and Steps.

### RECOMMENDED READINGS -

1. Selltitz, C. M. Jahoda, M. Deutsch – Research method in Social Relation, holt, New York 1961.
2. Goode, W and P.K. Hatt – Method in social research Mc Graw Hill, Tokyo, 1962.

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PAPER - XV

Course Code - PGECT 305

PRACTICAL-III : QUANTITATIVE TECHNIQUES

Max. Marks: 100

- Deviation - Mean, Quartile, Standard and Co-efficient of Variation.
- Dispersion - Lorenz Curve. Nearest Neighbour Analysis
- Correlation- Product Moment, Rank Correlation.  
Carl Pearson's Coefficient of Correlation.
- Linear Regression.
- Test of Hypothesis: Z Test, F Test, 't' Test and Chi-square Test.

SUGGESTED READINGS -

1. Singh, R.L. & P.K. Dutt : Elements of Practical Geography Students Friends.
2. Monkhouse, F.J. & H.R. Wilkinson; Maps and Diagrams Mathieu, London.
3. Mahmood, Aslam 1971 : Statistical Methods in Geographical studies Rajesh Pub.. New Delhi.
4. Gregory, S. : Statistical Methods and The Geographer.
5. Hammond & Mc ullah 1977 : Quantitative Techniques in Geography, Clarendon Press. Oxford.
6. Fitz, Gomid, B.P. : Science in Geography, Developments in Geographical Method, Oxford University Press.
7. Yeates, M. : An Introduction to Quantitative Analysis in Human Geography. McGraw Hill. New York.

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**M.A. GEOGRAPHY**  
**SEMESTER - IV**

M.A. Geography Semester-IV shall consist the following papers :

Paper	Course Code	Title	Marks			Credits
			Written	Internal	Total	
XVI	PGECT 401	Urban Geography	80	20	100	4
XVII	PGECT 402	Agriculture Geography	80	20	100	4
XVIII	PGECT 403	Health Geography	80	20	100	4
XIX	PGECT 404	Socio-Economic Survey Report	80	20	100	4
XX	PGECT 405	Remote Sensing, GPS and G.I.S.	-	-	100	4

1. The M.A. Semester-II examination in Geography shall consist of 500 marks.

There shall be four theory papers of 100 marks each and one practical of 100 marks as given in the above Table.

2. The theory papers shall be of three hours duration.

3. Candidates will be required to pass separately in theory and practical examinations.

4. (a) In the practical examination the following shall be the allotment of time and marks.

(i) Practical record	20%	20
(ii) Lab work (up to 4 hours)	70%	70
(iii) Viva on (i) and second (ii) above	10%	10

(b) The external and internal examiners shall jointly submit their marks.

(c) All the candidates shall present at the time of the practical examination.

Along with their practical record regularly signed by the teachers concerned.

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**PAPER-XVI**  
**Course Code PGECT 401**  
**URBAN GEOGRAPHY**

**Max. Marks End Semester: 80**

**Unit I :** Meaning, Definition, Nature and scope of Urban geography. Approaches in Urban Geography.

Attributes of Urban Places during Ancient, Medieval and Modern Periods.

**Unit II :** Urban Morphology – Theories of Urban Structure  
(Concentric Zone Theory, The Sector Theory and The Multiple Nuclei Theory).  
and Urban Land Use. City Core (CBD).

**Unit III :** Urban Economic Base: Basic and Non-Basic Economic Functions.

Functional Classification of Towns - Harris and Nelson.

Classification of Towns in India – Ashok Mitra, Lewis Mumford, G. Taylor.

**Unit IV :** Contemporary Urban Issues: Slums, Transportation, Housing.

Urban Environmental Problems: Air, Water, Noise.

Urban Planning : Aims Master Plan – Chandigarh, NCR, Bhubaneswar, Navi Mumbai.

**Suggested Readings -**

1. Rao, B.P. and N Sharma *Nagariye Bhoogol*, Vasundhara Prakashan, Gorakhpur.
2. Singh, O.P. *Nagariye Bhoogol*,
3. Bansal, S.C. *Nagariye Bhoogol*, Meerut
4. Dickinson, R.E. : *City, Religion and Regionalism*.
5. Mayor, H.M. & C.F. Kohn : *Readings in Urban Geography*
6. Carter, Harold : *Study of Urban Geography*, London, Edward Arnold, 1979.
7. Singh R.L. & K.N. Singh : *Readings in Rural Settlement Geography*, NGSI Varanasi, 1975.

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**PAPER – XVII**  
**Course Code PGECT 402**  
**AGRICULTURE GEOGRAPHY**

**Max. Marks End Semester:80**

**Unit I :** Nature, Scope and development of Agricultural Geography, Approaches to the Study of Agricultural Geography: Commodity, Systematic and Regional Systems.

**Unit II :** Determinants of Agriculture - Physical, Economic, Social and Technological.

Land holding and Land Tenure System, Land Reforms,

**Unit III :** Von Thunen's Theory of Agricultural Location.

Whittlesey's classification of agricultural regions. Agricultural Regions in India.

Land use, Crop=Combination and Cropping .Shifting Cropping Pattern. Green Revolution, White revolution

**Unit IV :** Agricultural Policy in India : Contemporary Issues : Drought and Food Security, Irrigation, Fertilizers, Insecticides and Pesticides, Technological Know-How.

**Suggested Readings -**

1. Edward, and Rosers – Agriculture Resource.
2. Gautam, Alka Krishi Bhoogol, Sharda Pustak Bhawan, Allahabad
3. Krishi Bhoogol, Kailash Pustak Sadan, Bhopal
4. Hussain, Majid Krishi Bhoogol, Rawat Publication, New Delhi.
5. Singh, Indira Krishi Bhoogol

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**PAPER – XVIII**  
**Course Code PGECT 403**  
**HEALTH GEOGRAPHY**

**Max. Marks End Semester: 80**

**Unit I : Meaning, Definition, Nature and Scope of Health Geography. Approaches of Health Geography. Development of Health Geography – in 18<sup>th</sup>, 19<sup>th</sup> and 20<sup>th</sup> Century.**  
Concept of Health and Health Care in Ancient India.  
Indicators of Health. Characteristics of Health Care. Levels of Health Care.

**Unit II Physical and Economic Factors Affecting Human Health:**

- Geographical Factors: Relief, Soil and Climate.
- Economic Factors: Income and Place of Work.

**Unit III Social and Cultural Factors Affecting Human Health:**

- Social: Education and Educational Levels.
- Environmental: Pollution of Air, Water, Soil, and Noise.

**Unit IV : Health Care – International Level: WHO, UNICEF, RED CROSS.**

- National Level: CHC and PHC. Sub-Health Centres.
- Local Level: Mitnanin, Aanganwadis.

**Suggested Readings -**

- Khatri, Harish Chandra 2018 Swasthya Bhoogol, Kailash Pustak Sadan, Bhopal
- Carol, Huss (ed.) 1989 *The Banyan Tree: A Textbook for Holistic Health Practitioners*, Vol. I, Sahaj / Medical Mission Sisters, Pune.
- Eyles, John 1987 *The Geography of National Health: Essays in Welfare Geography*, Groom Helm, London.
- Pacione, Michel (ed.) 1986 *Medial Geography: Progress and Prospect*, Croom Helm, London.
- Park, K. 1995 *Park's Textbook of Preventive and Social Medicine*, Banarsidas Bhanot Pub. Jabalpur, 14<sup>th</sup> Edition.
- Prasad, Krishna Nandan 2023 Swasthya Bhoogol, Adhyayan Publishers & Distributors, New Delhi
- Singhai, 1999 Chikitsa Bhoogol, Sharda Prakashan, Gorakhpur.

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PAPER – XIX

Course Code PGECT 404

SURVEY REPORT ON SOCIO-ECONOMIC STATUS OF A VILLAGE

Max. Marks End Semester:100

SCHEME OF CHAPTERIZATION

*Chapter - I Introduction*

Statement of the Problem, Objective, Hypothesis, Data, Methods, Review of Literature

*Chapter - II Geographical Aspect*

Location, Structure, Relief, Drainage, Climate, Vegetation, Soil.

*Chapter - III Demographic Aspect*

Population Density. Composition of Population: Age, Sex, Religion, Caste.

Growth of Population.

*Chapter - IV Economic Aspect*

Composition of Population: Occupational, Income, Size of Holding.

Agricultural Produce and Productivity. Use of Technology. Loan for Agriculture.

Animal Husbandry- Milch Animals, poultry, Pigistry, Fish.

*Chapter - V Social Aspect*

**Education:** Literacy – Total, Male, Female, Caste, Religion, Age-wise.

Educational Levels - . Total, Male, Female, Caste, Religion, Age-wise.

**Marital Status** - Total, Male, Female, Caste, Religion, Age-wise.

*Chapter – VI Conclusion*

*Bibliography*

*Appendices*

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Paper XX

Course Code PGECT 405

REMOTE SENSING AND GEOGRAPHICAL INFORMATION SYSTEM

Max. Marks End Semester : 100

*Elements of Spatial Data*

Sources of Data : primary and secondary. Raster and Vector Data Structures.

Conversion & Comparison of Raster and Vector data

Methods of Spatial Interpolation.

*Air photo and Image Interpretations*

*Important Terminologies: Fiducial Points, Overlapping, Principal Point, Conjugate Points, Determination of Scale and Height.*

*Mapping of Land use and Land Cover*

*GIS Point, Line and Polygon*

*Text: Lat-Long, Scale, Index, Direction. Shading*

SUGGESTED READINGS -

- 1.2. Barrett E.C. and L.F. Curtis : Fundamentals of Remote Sensing and Air Photo Interpretation on, Mcmillan. New York, 1992.
3. Campbell J. : Introduction to Remote Sensing, Guilford, New York, 1989.
4. Curran, Paul J. : Principles of Remote Sensing. Longman, London, 1985.
6. Luder D., Aerial Photography Interpretation : Principles and Application, CcGraw Hill, New York, 1959.
8. Rao D. P. (eds.) : Remote Sensing for Earth Resources, Association of Exploration Geophysicist. Hederabad. 1998.
9. Thomas M. Lollasand and Ralph W. Kefer, Remote Sensing and Image Interpretation. Wiley & sons. New York, 1994.
11. Burrough P.A. Principles of Geographic Information Systems for Land Reson Assessment Oxford University Press, New York, 1986.
13. Maquire D.J.M.F. Goodchild and D.W. Rhind (eds.). Geographic information System Principles and Application. Taylor & Francis, Washington, 1991.
15. Peuquet D. J. and D.F. Marble, Introductory Reading in Geographic Information System Taylor & Francis. Washington, 1990.
16. Star J. and J. Estes, Geographic Information Systems : An Introduction, Prentice Engle Wood Cliff, New Jersey, 1994.

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