

**HEMCHAND YADAV VISHWAVIDYALAYA, DURG  
(C.G.)**

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**SCHEME OF EXAMINATION  
&  
SYLLABUS  
of  
M.A./M.Sc.(Geography) Semester Exam  
Session 2021-22**

**(Approved by Board of Studies)  
Effective from July 2021**

# Hemchand Yadav Vishwavidyalaya, Durg (C.G.)

## M.A./M. Sc. GEOGRAPHY

### SEMESTER I (2021-22)

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

S. No.	Paper	Title	M. M.		
			Written	Inte. Asse.	Total
1.	I	Geomorphology	80	20	100
2.	II	Climatology	80	20	100
3.	III	Geographical Thought	80	20	100
4.	IV	Geography of India	80	20	100
5.	V	Practical-I : Advanced Cartography	---	---	100

1. The M. A. /M. Sc. Semester I examination in Geography shall consist of 500 marks. There shall be four theory papers each of 100 marks and one practical of 100 marks as follows:

Paper I	Geomorphology
Paper II	Climatology
Paper III	Geographical Thought
Paper IV	Geography of India
Paper V	Practical-I: Advanced Cartography

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

(i)	Practical record	20%
(ii)	Lab work (up to three hours)	70%
(iii)	Viva on i. ii.	10%

- The external and internal examiners shall jointly submit marks.
- All the candidates shall present at the time of the practical examination their practical record regularly signed by the teachers concerned.

M. A. /M. Sc.  
29/06/2021  
Dr. Sushma Yadav

Jaisingh  
29.6.21

Bhargava  
29.06.2021  
Neeta Kumbhara

Bhargava  
29/06/2021

Jaisingh  
29.6.2021  
Dr. Jaisingh Sahas

## PAPER – I GEOMORPHOLOGY

- UNIT – I Nature and scope of Geomorphology; Fundamental concepts; Interior of the earth; Earth movement: epeirogenic and orogenic movements With reference to the evolution of the Himalaya: Forces of Crustal instability, Isostasy, Geosyncline, Plate tectonic, Mountain building, Earthquake and Vulcanicity.
- UNIT – II Exogenic processes: concept of gradation; Agents and processes of gradation: weathering, wasting and erosion, aggradation; Climatic Geomorphology and morphogenetic regions; slope evolution, Arid Semi-Arid and Karst topography.
- UNIT – III Concept of Geomorphic cycle and its controversy; Dynamic of glacial and periglacial processes and resulting landforms, Complications of fluvial geomorphic cycle and resulting landforms.
- UNIT – IV Geological structure and landform: development of landscape and drainage on uniclinal, folded and domal structures and Erosion surfaces, Applied Geomorphology.

### SUGGESTED READINGS:

1. Ahned, E.: Coastal Geomorphology of India.
2. Chorley, R. J.: Spatial Analysis in Geomorphology, Methuen, London, 1972.
3. Cooke R.II. and Doornkamp, J.C. : Geomorphology in Environmental Management. An Introduction, Clarendon press, Oxford, 1974.
4. Dury, G.H.: The Face of the Earth, Penguin Harmondsworth 1959.
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 University Press. London, 1974.
8. Holms, A.: Principles of Physical Geology, Thomas Nelson, London.
9. Mitchell, C.W.: 'l'erra.ii'i Evaluation. Longman, London, 1973.
10. Oilier, C.D. : Weathering, Longman, London, 1979.
11. Pitty, A.F.: Introduction to Geomorphology, Methuen, London, 1971.
12. Stoddart, D.R. (ed.) : Process and Form in Geomorphology, Roulldge, New York, 1996.
13. Skinner, B.J. & Porter, S.C.: The Dynamic Earth John Wiley. New York, 1995.
14. Sparks, B.W. Geomorphology, Longman, London, 1960.
15. Sharma, H.S. (cd.): Perspective in Geomorphology, Concept, New Delhi, 1980.
16. Singh, S : Geomorphology, Prayag Publication, Allahabad, 1998.
17. Steers, J.A. : The Unstable Earth Methuen, London.
18. Thornbury, W.I.). Principles of Geomorphology, John Wiloy, New York, 1960.
19. Strahler, A.N.: Physical Geography, Willey, New York.
20. कौशिक, एस.डी.: भू-आकृति विज्ञान
21. नेगी, बी,एस., भू-आकृति विज्ञान
22. दयाल परमेश्वर, भू-आकृति विज्ञान
23. यादव तथा रामसुरेश., भू-आकृति विज्ञान, ग्रनयि, कानपुर
24. सिंह,सविन्द्र के, भू-आकृति विज्ञान, शारदा पुस्तक भवन, इलाहाबाद

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29.6.2021  
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**PAPER - II**  
**CLIMATOLOGY**

- UNIT – I Nature and scope of climatology and its relationship with meteorology; composition of atmosphere; Insolation, heat balance of the earth, stability and instability, greenhouse effect, vertical and horizontal distribution of temperature.
- UNIT – II Jet stream; General circulation in the atmosphere; Acid rain; concept of air masses and Front. EL Nino and La Nino. Monsoon winds and cyclones.
- UNIT – III The application of general principles of elementary physical and synoptic meteorology to the study and classification of climate. Climatic classification of Koeppen and Thornthwaite. Major climate of the world-tropical, temperate, desert and mountain climate.
- UNIT – IV Climatic changes during geological and historical times, evidences, possible causes, global warming, Applied climatology.

**SUGGESTED READINGS:**

1. Barry, R.G. and Chorley P..1.; Atmosphere, Weather and Climate, Roulledge, London and New York, 1998.
2. Critchfieldid, J.H. : General Climatology, Prentico Hall, India, New Delhi, 1993.
3. Das, P.K. : Monsoons 'National Book Trust, New Delhi, 1987.
4. Fein, J.S. and Slephens, 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, Chaitanaya Publications, Allahabad, 1986.
7. Lydolp, P.H. : The Climate of the Earth, Rowiman, 1985.
8. Menon, P.A. : Our Weather, N.B.T., New Delhi, 1989.
9. Pelerson, S. : Introduction to Meteorology, Me G-r-aw Hill Book, London, 1969.
10. Robinson, P.J. and Henderson S. : Contemporary Climatology, Henlow, 1999.
11. Thompson, R.D. and Perry, A (ed.) : Applied Climatology, Principles and Practice. Raoutledge, London. 1997.
12. तिवारी अनिल कुमार : जलवायु विज्ञान, राजस्थान हिन्दी ग्रंथ अकादमी
13. सिंह,सविन्द्र, प्रवालिका पब्लिकेशन्स, इलाहाबाद

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**PAPER – III**  
**GEOGRAPHICAL THOUGHT**

- UNIT – I The Field of geography, its place in the classification of science, geography as a social science, and natural science. Definition, scope and functions of geography; Geography as science of relationship, as science of areal differentiation, as spatial science, Spatial Organization, Geography and environmentalism: forms of man-nature relationship and current view; Dualism in geography; Regional Concept.
- UNIT – II The growth of geographical knowledge from earliest times up to the 15th century. Contributions of Greek and Roman thinkers. Geographical information in Ancient Indian literature. The Great Age of Maritime Discovery and Exploration. Contributions of various schools of thought in modern Geography:  
(i) German School - A.V. Humbolt, Carl Ritter. Friedrich Ratzel  
(ii) French School - Vidal-De- Blache, Jean brunhes  
(iii) British School - H.J. Mackinder, L.D. Stamp  
(iv) American School - E.C. Semple, G. Taylor
- UNIT – III Scientific explanations: routes to scientific explanation (inductive/deductive); Type of explanation: cognitive description, cause and effect, temporal, functional/ecological, systems; Laws, theories and models in geography; Quantitative revolution and philosophy of positivism.
- UNIT – IV Responses to positivism, behaviurlism and humanistic, relevance movement and radical geography; Changing paradigms; Status of Indian Geography; Future of Geography.

**SUGGESTED READINGS:**

1. Abler, Ronald; Adams, John S.Gold, Peler: Spatial Organization: The Geographer's view of the world. Prentice Hall, N.J. 1971.
2. Ali S.M. : The Geography of Puranas, Peoples Publishing House, Delhi, .1968.
3. Amedeo, Douglas : An Introduction to Scientific Reasonign in Geography, John Wiley, U.S.A. 1971.
4. Dikshit, R.D. (ed.): The Art & Science of Geography Rand Me Nally & Co., 1959.
5. Hartshorne, R.: Perspectives on Nature of Geography Rand Me Nally & Co., 1959.
6. Husain, M. : Evolution of Geographic Thought, Rawat Pub., Jaipur, 1984.
7. Johnston, R.J.: Philosophy and Human Geography, Edward Arnold, London, 1983.
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 20th Century.
12. Dikshit, R.D.: Geographical Thought : A Contextual History of Ideas, Prentice Hall of India, New Delhi.
13. Harvey D. : Explanation in Geography.
14. सिंह उजागर : भौगोलिक चिन्तन का विकास
15. त्रिपाठी एवं बिरले: भौगोलिक चिन्तन का विकास एवं विधितंत्र
16. कौशिक, एस,डी. : भौगोलिक विचारधाराओं का इतिहास एव विधितंत्र
17. सिंह, जगदीश : भौगोलिक चिंतन का मूलाधार.

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**PAPER – IV**  
**GEOGRAPHY OF INDIA**

- UNIT – I Physical and Biological elements in the Geography of India: Geological structure, relief, climate, Drainage, vegetation and soils.
- UNIT – II Agriculture: Major characteristics and problems, Impact of infrastructural and institutional factors on agriculture. Important crops-wheat, rice, cotton, sugarcane, oil-seeds, tea and coffee, Agricultural regions. Green revolution, Agro-climatic regions.
- UNIT – III Sources of power: Coal; Petroleum, Natural gas. Hydroelectricity and Atomic energy. Mineral resources with special reference to iron ore, manganese and bauxite. Industrial development with special reference to iron and steel, cement, cotton, jute, sugar and paper industries; Industrial regions.
- UNIT – IV Regional division of India: Purpose and Methodology. Major schemes of regions of India: O.H.K. Spate and R.L. Singh. Physical and cultural geography of Chhattisgarh State.

**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. Raza Moonis : Indian Economy : the Regional Dimension Speclaum Publishers, New Delhi, 1992.
5. Robinson, Francs : The Cambridge Encyclopedia of India, Pakistan, Bangladesh, Sri Lanka, Nepal, Bhutan & Maldives Cambridge University Press, London, 1989.
6. Singh R.L. (ed.) : India - A Regional Geography National Geographical Society, India Varanasi, 1971.
7. Spale OHK & ATA Learnont-India & Pakistan Methuen, London. 1967.
8. Tirtha R. & Gopal Krishna, Emerging India Reprinted by Rawat Publications, Jaipur 1996.
9. Sharma T.C. and O. Coutinho : Economic and Commercial Geography of India.
10. अग्रवाल पी.सी. भारत का भौतिक का भूगोल, एशिया प्रकाशन कं., रायपुर 2003
11. बंसल सुरेशचन्द्र : भारत का भौतिक का भूगोल, मिनाक्षी प्रकाशन , मेरठ.
12. वर्मा रामविलास, भारत : एक भौगोलिक विवेचन , भवदीय प्रकाशन श्रृंगारघाट – अयोध्या, फैजाबाद, पिन –224123,2007

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## PAPER – V

### PRACTICAL I - ADVANCED CARTOGRAPHY

**Graphs and Diagrams:** Triangular graph. Logarithmic and semi logarithmic graphs, scatter graphs; climatograph. Proportional circles, spheres and cubes.

**Thematic Maps:** Choropleth maps, isolines, Flow maps, isochrones and class intervals. Morphometric Analysis: Profiles, Slope Analysis; Altimetric, and Clinographic curves; Block Diagrams.

#### SUGGESTED READING:

1. Monk house F.J. & H.R. Wilkinson: Maps and Diagrams, Methuen, London.
2. मॉक हाउस तथा विल्किन्सन (अनु.प्रो.प्रेमचन्द अग्रवाल) : मानचित्र तथा आरेख म.प्र. हिंदी ग्रंथ अकादमी
3. हीरालाल: प्रायोगिक भूगोल.
4. शर्मा, जे. पी. प्रायोगिक भूगोल,

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# Hemchand Yadav Vishwavidyalaya, Durg (C.G.)

## M.A. /M. Sc. GEOGRAPHY

### SEMESTER – II

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

S. No.	Paper	Title	M. M.		
			Written	Inte. Asse.	Total
1.	VI	Economic and Natural Resource Management	80	20	100
2.	VII	Oceanography	80	20	100
3.	VIII	Regional Development and Planning	80	20	100
4.	IX	Social Geography	80	20	100
5.	X	Practical-II : Map Projections, Map Interpretation and Surveying	---	---	100

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

There shall be four theory papers each of 100 marks and one practical of 100 marks as follows:

Paper VI Economic and Natural Resource Management.

Paper VII Oceanography

Paper VIII Regional Development and Planning

Paper IX Social Geography

Paper X Practical-II : Map Projections, Interpretation and Surveying.

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%

(ii) Lab work (up to three hours) 40%

(iii) Field work (up to three hours) 30%

(iv) Viva on i, ii & iii above 10%

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

(c) Candidates shall be examined in survey individually. They will however be allowed to take the help of a labourer each at their own expense.

(d) All the candidates shall present at the time of the practical examination their

Practical record regularly signed by the teachers concerned.

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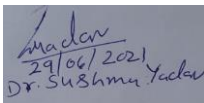
## PAPER- VI

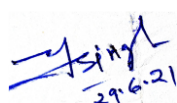
### ECONOMIC AND NATURAL RESOURCE MANAGEMENT

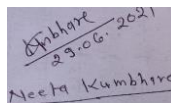
- UNIT – I Nature and scope of economic Geography; fundamental concepts in economic geography; classification of economies, sectors of economy (primary, secondary, tertiary). Meaning, nature and classification of resources, Resource appraisal: human wants and social objective, technological status and resources. Appraisal of quality and quantity of human resources, relation between population and resource, natural resources and economic development, resource adequacy and scarcity, limits to growth. Resource use, concept of absolute and relative abundance of resources, optimum, under use, misuse and over use of resources.
- UNIT – II World pattern of major natural resources: land and soils, biotic resources, water resources mineral and energy resources, oceanic resources.
- UNIT – III Classification of Industries, Theories of industrial location; case studies of selected industries; Iron and Steel; Aluminium, Chemical, Textile. Means of transport, International trade, trade blocks, globalization and Indian economy.
- UNIT– IV Conservation and management of resources; evolution of the concept, principles, philosophy and approaches to conservation, resource conservation and management methods. Policy making and resource management; sustainable development of resources.

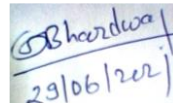
#### SUGGESTED READING:

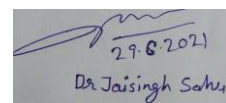
- Ahemd, Jaleel - Natural Resources in Low Income Contries. Bennet,  
II.II. - Elements of Soil Conservation.  
Ciriacy, Wantrup, S.V. & - Natural resources: Quality & Quantity Persons (eds.)  
Betall, R.C. & R.O. Buehanan - Industrial Activity and Economic Geography. Edvard  
and Rosers - Agricultural Resources.  
Freeman, T.W. - Geography and Planning.  
Fryer, D.M. - World Economic Development.  
Isard, Walter - Method of Regional Analysis.  
Mehta, M.M. - Human Resource Development Planning.  
Owen, O.S. - Natural Resource Conservation.  
Peach, W.N. & James, A. - Zimmerman's World Resources Contenting and  
Conservation.  
Parkin's, E.A. & J.R. Whitakr - Our Natural Resource and their conservation. Renner,  
G.T. - Conservation of National Recourses.  
Stamp, L.D. - Land of Britain Its use and Misue. Smith, G.H. (ed.)  
- Conservation. of Natural Recourses. Symoos, L. -  
Agriculture Geography.  
Thomas W.L. (et.al. reds.) - Man's Role in Changing the face of the Earth. Wales,  
H. & H.O. Lathrop - The Conservation of Natural Recourses.  
Wheeler, T.O. et al - Economic Geography, John Wiler New York 1995.

  
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**PAPER – VII**  
**OCEANOGRAPHY**

- UNIT – I Nature and scope of Oceanography; Distribution of land and water; Major features of ocean basins; Marine sediments. Physical and chemical properties of sea water.
- UNIT – II Interlink between atmospheric circulation and circulation pattern in the oceans, surface currents, Thermohaline, waves and tides.
- UNIT– III Marine-biological environment: Bio-geochemical cycle in the ocean. biozones, types of organisms; plankton, nekton and benthos, food and mineral resources of the sea. Major marine environments; coastal : estuary, deltas, barrier island, rocky coasts : Open : reefs, continental shelf, continental slope and deep : Pelagic environment and floor of the ocean basins.
- UNIT – IV Impact of Humans on the marine environment. Law of the sea; exclusive economic zone; marine deposits and formation of coral-reefs.

**SUGGESTED READINGS:**

1. Davis Rechar J.A. : "Oceanography-An Introduction to the Marine Environment". Wm. C. Brown Iowa, 1986.
2. Duxbury, C.A. and Duxbury B. : An Introduction to the world's Oceans-C. Brown. Iowa 2nd ed., 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 Delhi, 1987.
5. King C.A.M. Oceanography for Geographers 1962.
6. Sharma, R. C. "The Oceans" Rajesh N. Delhi, 1985.
7. Urnmerkuty, A.N.P. Science of the Eceans and Human life, NBT, New Delhi, 1985.
8. Ornmany, F.D. : The Ocean.
9. Sharma, R. C. & M. Vital : Oceanography : A Brief Introduction kislaya Pub. New Delhi.
10. Siddartha, K.. : Oceanography : A Brief Introduction, Kislya Pub. New Delhi.
11. नेगी ,बी.एस.: जलवायु तथा समुद्र विज्ञान.
12. सिंह, सविन्द्र सिंह – समुद्र विज्ञान, प्रयाग पुस्तक भवन, इलाहाबाद (उ.प्र.) 2011
13. लाल, डी. एस – समुद्र विज्ञान,

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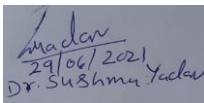
## PAPER – VIII

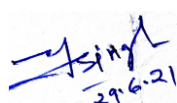
### REGIONAL DEVELOPMENT AND PLANNING

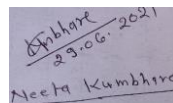
- UNIT – I Regional Planning: Definition, Scope, evolution and Objectives. Region and Regionalism, Planning Regions: Concept and Delineation. Type of Regions. Central Place Theory, Concept of core and periphery Friedmann's Model of Spatial Organisation and Economic Growth.
- UNIT – II Regional Development Theories: Development Theories of Myrdal and Hirschman, Economic and Export Base model, Frank's Theory of Under development.
- UNIT – III Approaches and Strategies of Regional Development: Growth Pole Theory Agropolitan Development, Community Development, River Basin Planning, Metropolitan Planning (with reference to India).
- UNIT – IV Regional Planning in India. Regional Imbalances and Inequalities, Indicators of Regional Development; Regional Policies in Five Year Plans, Centre State Relations and Multilevel Planning, Planning for special problem Regions: Hill areas, Tribal areas, Drought prone areas, Command areas and River basins. Regional development and planning in India.

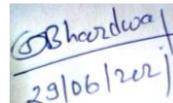
#### SUGGESTED READING:

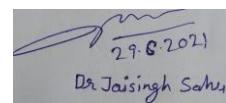
1. Daysch, C.H.J. & others: Studies in Regional Planning.
2. Deckinson R.E. : City Region and Regionalism.
3. Freeman, E.W. : Geography and Planning.
4. Golksin A. : Regional Planning and Development.
5. Keeble, L. : Principle and Practice of Town and Country Planning.
6. Stamp L.D. : The Land of Britain : Its use and Misuse.
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**PAPER – IX**  
**SOCIAL GEOGRAPHY**

- UNIT– I Definition, meaning and scope of Social geography and its Nature and relationship with other Social sciences. Development of Social Geography, Approaches to the study of Social Geography.
- UNIT– II Concept of Society – Social Environment, Geographic bases of Social Formation. Social Geography of India - Social Stratification, Caste and Class. Social organization and groups, Social transformation and change in India, Religion and linguistic group of India. Evolution of Socio-Cultural Regions of India.
- UNIT – III Social well- being– meaning and indicators of Social well- being. Quality of life, Pattern and bases of rural and urban society. Deprivation and discrimination issues relating to women and under privileged groups. Cultural Realms and Cultural Region of the World.
- UNIT – IV Social development planning – meaning and importance. Public policy and social planning in India: Review of Five year Plans strategies to improve social well-being in tribal, hill, drought and flood prone Areas.

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## PAPER – X

### PRACTICAL II- MAP PROJECTIONS, INTERPRETATION AND SURVEYING

Map Projections: Mathematical/Graphical construction of world

projections. Interpretation of Maps: Geological Maps.

Principles and methods of topographical surveying involving the use of Theodolite and Dumpy level. Solution of problems in Surveying.

Topographical Information – International series, South east Asia Series, Indexing, Classification & Interpretation of topographical sheets.

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2. Kanetkar, T.R. & S.V. Kulkarni: Surveying and leveling part I & II A.V.G. Prakashan, Poona.
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5. हीरालाल: प्रायोगिक भूगोल.

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# Hemchand Yadav Vishwavidyalaya, Durg (C.G.)

## M.A./M. Sc. GEOGRAPHY SEMESTER III

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

S. No.	Paper	Title	M. M.		
			Written	Inte. Asse.	Total
1.	XI	Population Geography	80	20	100
2.	X II	Settlement Geography	80	20	100
3.	XIII (A)	Remote Sensing Techniques	80	20	100
	<b>OR</b>	<b>OR</b>			
4.	XIII (B)	Biogeography and Ecosystem	80	20	100
5.	XIV	Research Methodology	80	20	100
	XV	Practical-III : Remote Sensing and Quantitative Techniques	---	---	100

- The M.A. /M. Sc. Semester III examination in Geography shall consist of 500 marks. There shall be four theory papers each of 100 marks and one practical of 100 marks as follows:  
Paper XI : Population Geography  
Paper XII : Settlement Geography  
Paper XIII (A) : Remote Sensing Techniques  
**OR**  
Paper XIII (B) : Biogeography and Ecosystem  
Paper XIV : Research Methodology  
Paper XV : Practical – III: Remote Sensing and Quantitative Techniques
- The theory papers shall be of three hours duration.
- Candidates will be required to pass separately in theory and practical examinations.
- (a) In the practical examination the following shall be the allotment of time and marks.  
(i) Practical record : 20%  
(ii) Lab work (up to Four hours) : 70%  
(iii) Viva on i.& ii. Above : 10%  
(b) The external and internal examiners shall jointly submit marks.  
(c) All the candidates shall present at the time of the practical examination their practical record regularly signed by the teachers concerned.

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## SEMESTER – III

### PAPER - XI

#### POPULATION GEOGRAPHY

- UNIT – I Definition and scope of Population Geography. Relation of Population Geography with other subjects of social sciences. Historical development of Population Geography in western countries and in India. Sources of population data, Census and its history.
- UNIT – II Distribution of Population: The concept of population density and its types. Factors affecting population distribution. Distribution & Density of population in the world with special reference to Europe, Asia and India. Growth of population: Measure of decennial and annual rates of population growth, prehistoric and modern trends of population growth in the world. Regional aspect of population growth in India. Population theories. Demographic transition.
- UNIT– III Population composition in terms of age and sex, rural, urban residence, educational status and occupational structure. Significance of these elements in population analysis, factors affecting their composition in population, broad world patterns and detailed spatial patterns in India. Fertility and Mortality of population: Significance and factor. Indices and rates. World pattern and pattern in India. Human Development Index and its Components.
- UNIT– IV Migration of population: Causes, characteristics and types. Methods of estimating value of internal migration. Important international migrations of the world, internal migration in India: Population and Resources: Population-Resource regions. Population Regions: Concept and methods, population regions of India, population policies of India.

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2. Boglia, 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.
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22. बघेल, अनुसुइया : शिशु मर्त्यता : सिंघई पब्लिशर्स एण्ड डिस्ट्रीब्यूटर, रायपुर, 2004.
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**SEMESTER – III**  
**PAPER - XII**  
**SETTLEMENT GEOGRAPHY**

- UNIT – I      Meaning, Objectives and Scope of Settlement Geography; Evolution, Distribution, Types and Patterns of Rural Settlements; Rural House Types; Rural Service Centers.
- UNIT – II      Evolution and growth of urban settlements; The Geographical setting of Urban Centers: Site, Situation and Location.
- UNIT – III     Rank- size-relationship; Cities as Central Places, Central Place Theory, Growth Centre Theory.
- UNIT – IV     City- Country Relationship: Umland, Rural-Urban Fringe.

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10.     Mayor, H.M. & (.,.1". Kohn : Readings in Urban Geography.
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12.     Mumford L. : Culture of cities.
13.     Robson, W.A. : Great cities of world.
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15.     Carter, Harold : Study of Urban Geography, London, Edward Arnold, 1979.
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## SEMESTER – III

### PAPER – XIII (A) REMOTE SENSING TECHNIQUES

- UNIT– I Historical development of remote sensing as a technology - Relevance of remote sensing in Geography - Concepts and basics: Energy source, energy and radiation principles, energy interactions in the atmosphere and earth surface features, remote sensing systems: platform sensors and radiation records. Microwave sensing interpretation of SLAR imageries, thermal imageries.
- UNIT– II Remote Sensing Satellite: platforms LANDSAT, SPOT, NOAA, RADARSAT, IRS, INSAT: principles and geometry of scanners and CCD arrays, orbital characteristics and data products - MSS, TM, LISS I & II, SPOTPLA & 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 Applications: Air photo and image interpretations, arid mapping land use and land cover, land evaluation, urban land use, landform and its processes, weather studies and studies of water resources: integration of Remote Sensing and GIS. Remote sensing and hazard management, remote sensing and environmental management.

#### SUGGESTED READINGS:

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## PAPER – XIII (B)

### BIOGEOGRAPHY AND ECOSYSTEM

- UNIT– I Definition and scope of Biogeography Environment, Habitat and Plant-animal association, Biome Types.
- UNIT– II Elements of plant geography, distribution of forests and major communities. Plant successions in newly formed land forms. Zoogeography and its Environmental Relationship. Palaeo botanical and Palaeo climatological records of environmental change.
- UNIT– III Ecosystems: concept and components, Ecosystem-form and function: tropic level, ecological pyramids, ecological niche, energy and nutrients in the ecosystem, hydrological cycle, food chains and food webs. Major terrestrial ecosystems of the world: agriculture, forests, grassland and desert. Population growth and environment.
- UNIT– IV Biodiversity and its Conservation. Preservation and conservation of the ecosystem through resource management, Environment legislation. The Stockholm conference, the Earth summit, Environmental laws in India (the Wild Life Act, Water Act, Forest Act, Environment Protection Act and National Environment Tribunal Act).

#### SUGGESTED READINGS -

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2. Bradshaw, M.J.: Earth and Living Planet, ELBS. London, 1979.
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**SEMESTER – III**  
**PAPER - XIV RESEARCH**  
**METHODOLOGY**

- UNIT – I      Research Methodology-An Overview; Procedure of scientific Research, Defining Research Problem; Formulating Hypothesis; Research Design.
- UNIT – II      Methods of Data Collection: Observation, Questionnaire, Schedule and Interview; Sampling: Sampling Methods, Size of Sample;
- UNIT – III      Processing and Analysis of Data: Processing- Editing, Coding, Classification and Tabulation, Analysis – Measurement of Central Tendency, Dispersion, and Correlation.
- UNIT – IV      Preparation of Research Reports: Steps, Layout and Types of Reports

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2. Hoyt, J.B. Man and the Earth, Prentice Hall, U.S.A. 1992.
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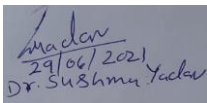
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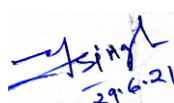
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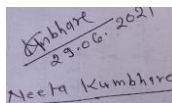
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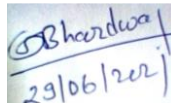
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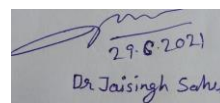
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## SEMESTER – III

### PAPER - XV

#### PRACTICAL -III

#### Remote Sensing, Interpretation of Topographical Sheets and Quantitative Techniques

1. **Principles of Photogrammetry:** - Air Photo- Stereo test, Orientation of stereo model under mirror stereoscope, Preparation of photo/line index and determination of photo scale, Use of parallax bar and determination of heights, Identification of features on aerial photo graph, Tracing of details from stereo pair, Interpretation of physical and cultural details, Preparation of Land use map pre field interpretation, Field visit for ground truthing.
2. **Remote Sensing:**– Study of satellite Image – Annotation Identification of features on FCC imageries, Tracing of details from satellite imageries, Basic Principles of Image interpretation, Interpretation of Physical and Cultural details and preparation of land use and land cover map using IRS Images. Pre field visit.

#### Statistical Techniques:

Product moment and Rank Correlation Coefficients, Linear Regression. Hypothesis Testing: Chi-Square test, t-test & F test, Sampling Techniques, Point, Line and Area Sampling.

#### SUGGESTED READINGS:

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# Hemchand Yadav Vishwavidyalaya, Durg (C.G.)

## M.A./M. Sc. GEOGRAPHY SEMESTER IV

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

S. No.	Paper	Title	M. M.		
			Written	Int. Ass.	Total
1.	XVI	Urban Geography	80	20	100
2.	XVII	Agricultural Geography	80	20	100
3.	XVIII (A)	Geographical Information System	80	20	100
	<b>OR</b>	<b>OR</b>			
4.	XVIII (B)	Environmental Geography	80	20	100
5.	XIX	Field Work (Physical and Socio- Economic)	---	---	100
6.	XX	Practical-IV :Geographical Information System and Quantitative Techniques	---	---	100

1. The M.A./M.Sc. Semester IV examination in Geography shall consist of 500 marks.

There shall be three theory papers and one Field Work report each of 100 marks and one practical of 100 marks as follows.

S. No.	Paper	Title
1.	XVI	: Urban Geography
2.	XVII	: Agricultural Geography
3.	XVIII (A)	: Geographical Information System
	<b>OR</b>	
4.	XVIII (B)	: Environmental Geography
5.	XIX	: Field Work (Physical and Socio- Economic)
6.	XX	: Practical-IV: Geographical Information System and Quantitative Techniques

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

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

4. Candidates will be required to submit their Field Report in three copies in hard bound at least one hundred pages for Valuation.

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

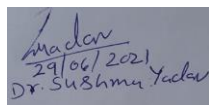
(i) Practical record 20%

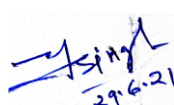
(ii) Lab Work (up to Four Hours) 70%

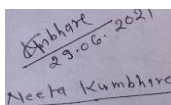
(iii) Viva on i & ii above 10%

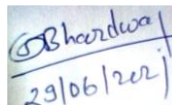
(b) The external and internal examiners shall jointly submit marks.

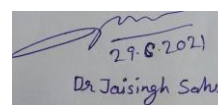
(c) All the candidates shall present at the time of practical examination their practical record regularly signed by the teacher concerned.

  
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**SEMESTER – IV**  
**PAPER-XVI**  
**URBAN GEOGRAPHY**

- UNIT – I Definition, Objective and Scope of urban geography, General Nature of City Structure.
- UNIT – II Internal structure: Morphology and Land use. Theories of Urban Structure: The Concentric Zone Theory, the Sector Theory, the Multiple Nuclei Theory. Commercial Structure of Cities; The Central Business District (CBD),
- UNIT – III Centrifugal and Centripetal forces in Geography, Economic Base of Towns: Basic, Non-basic concept. Urban Functions: Functional Classification of Towns: Webb, Harris, and Nelson.
- UNIT – IV Contemporary Urban Issues: Urban renewal, Urban sprawl, Slums, Environmental Pollution, Urban Planning; Landuse Planning, Urban and Metropolitan Planning in India.

**SUGGESTED READINGS:**

1. Abercrombee, Sir P.: Town and Country planning 1961.
2. Alam, Shah Manzoor : Hyderabad Securdabad (Twin Cities) A. study in urban geography)
3. Alam, S.M. & V.V.Tokshishevesky : Urbanization in developing countries.
4. Berry Brain .I. 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. Hall P. : Urban and Regional Planning, Rout ledge, London, 1992.
11. Kundu, A. : Urban Development and Urban Research in India, Khanna Publication, 1992.
12. Mayor, H.M. & Kohn : Readings in Urban Geography.
13. Morgan, F.W. : Ports and Harbours.
14. Mumford L. : Culture of cities.
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**SEMESTER – IV**  
**PAPER – XVII**  
**AGRICULTURAL GEOGRAPHY**

- UNIT – I Nature, scope, significance and development of agricultural geography. Approaches to the study of agricultural geography: Commodity, systematic and regional systems. Origin and dispersal of agriculture. Sources of agricultural data.
- UNIT – II Determinants of agricultural land use - Physical, economic, social, and technological Land holding and land tenure systems, Land reforms, land use Agriculture policy and planning. Selected agricultural concepts and their measurements; cropping pattern, crop concentration, intensity of cropping, degree of commercialization, diversification and specialization, efficiency and productivity, crop combination regions and agricultural development.
- UNIT – III Theories of agricultural location based on several multi-dimensional factors:-Von Thunen's theory of agricultural location and its recent modifications; Whittlesey's classification of agricultural regions; land use and land capability.
- UNIT – IV Contemporary Issues: Food, nutrition and hunger, food security, drought and food-security, food aid Programmes; role of irrigation, fertilizers, insecticides and pesticides, technological know-how. Employment in the agricultural sector: landless labourers, woman, children: occupational and agricultural activities.

**SUGGESTED READINGS:**

1. Bayliss Smith, IP.: The Ecology of Agricultural Systems. Cambridge University London, 1987.
2. Berry, B.J.L et. al. : The Geography of economic Systems. Prentice Hall, New York, 1976.
3. Brown, L.R. : The Changing World Food Prospects - The Nineties and Beyond, World Watch Institute, Washington D.C., 1990.
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12. Singh, J. and Dhillon, S.S. : Agricultural Geography. Tata McGraw Hill' Pub.; Delhi, 1988.
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## SEMESTER – IV

### PAPER – XVIII (A)

#### GEOGRAPHICAL INFORMATION SYSTEM

- UNIT – I Spatial Science : Geography as a spatial science, maps and spatial information dynamics of spatial information, elements of information technology, Geographic objects and their relations definition and development of GIS, computer environment for GIS.
- UNIT – II Spatial Data: Elements of spatial data: data sources: Primary and secondary census and sample data, quality and error variations Raster and vector data structures, data conversion comparison of raster and vector data bases, methods of spatial interpolation – GIS data formats for the computer environment.
- UNIT – III GIS Technology: Coordinate system-basic principles of cartography and computer assisted cartography for GIS – remote sensing data as a data source for GIS integration of GIS and remote Sensing-GPS and GIS: technology, data generation and limitations – visualization in GIS-Digital Elevation Models (DEM and TINS).
- UNIT – IV GIS Application: GIS as a Decision Support System –expert system for GIS-basic flow chart for GIS application – GIS standard legal system and national GIS policy application of GIS in Land Information System, Urban Management, Environmental Management and Emergency Response System.

#### SUGGESTED READINGS:

1. American Society of Photogrammetry : Manual of Remote Sensing. ASP, Falls Church V.A., 1983.
2. Barrett E.C. and L.F. Curtis : Fundamentals of Remote Sensing and Air Photo Interpretation on, Memillan, New York, 1992.
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**SEMESTER – IV**  
**PAPER – XVIII (B)**  
**ENVIRONMENTAL GEOGRAPHY**

- UNIT – I Environment: Meaning, definition, concepts and theories related to environment. Environment and its components: Classification, Characteristics and their interdependent relationship, Development of the environmental studies and their approaches: Development of environmentalism in Geography.
- UNIT – II Environment and development. Ecological concepts; Geography as human ecology; Ecosystem: meaning definition, Concept and components. Main terrestrial ecosystems of the world-forests and agriculture.
- UNIT – III Environmental hazards- natural and human made, environmental pollution: meaning definition, nature and types-air, water, noise and others. Ecological impacts of pollution. Resource use and ecological imbalance with special reference to soil, forests and water resources.
- UNIT – IV Environmental Management: meaning, importance and approaches, need for environmental policy and laws. Preservation and conservation of environment through resource management (Green revolution, Chipko movement, National Parks). Environmental Actions: concept, need and importance Stockholm Conference, Earth Summit, E.I.A. definition and methods and need for EM Environmental education and People's participation.

**Suggested Readings:**

1. Agrawal, Anil and Sunita Narain. Dying Wisdom: The Fourth citizen Report. Centre for Science and Environment, New Delhi, 1998.
2. Burton I.; R.W. Kates & G.F. Whiley. The Environment as Hazards. O. U.P. New York, 1978, Carledge, Bryen. Population and the Environment, O.U.P., New York, 1995.
3. Chandna, R.C. Environmental Awareness Kalyani Punlishers, New Delhi, 1998.
4. Dawson, J. and J.C. Doornkamp, eds.: Evaluating the Human Environment. Edward Arnold, London, 1975
5. Detwyler, J.R.: Man,s impact on Environment. Pelican, 1970.
6. Edington, J.M. & M.A. Edington: Ecology and Environmental Planning. Chapmap & Hall, London, 1977.
7. Goudie, Andrew. The Human Impact on the Natural Environment, Blackwell Oxford, U.K. 1994
8. Jain, R. K., L.V. Urban and G.S. Stacy; Environmental Impact Analysis-A New Dimension in Decision-Making. Van Norstrand Reinhold Co. New York, 1977.
9. Khoshoo, T.N. Environmental Concepts and Strategies. Ashish Publishing House, New Delhi.
10. Mohan, M. Ecology and Development. Rawat Publications; Jaipur, 2000.
11. Munn, R.E. Environmental Impact Assessment: Principles and Procdures. John Wiley & Sons, New York, 1979.
12. Narain, Sunita. The Citizen Fifth Report. Centre for Science and Environment, New Delhi 2003.

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5. Sharma, B.L. & Puar P: Global Environmental Challenges. Rohini Books, Publishers & Distributors, Jaipur, 2004.
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13. रघुवंशी अरुण और चन्द्रलेखा रघुवंशी : पर्यावरण तथा प्रदूषण, मध्यप्रदेश हिन्दी ग्रथ अकादमी, भोपाल, 1989
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16. तिवारी, विजय कुमार : पर्यावरण और परिस्थितिकी, हिमालय पब्लिशिंग हाउस, दिल्ली 1998 ।
17. तिवारी, विजय कुमार, : पर्यावरण अध्ययन, हिमालय पब्लिशिंग हाउस, दिल्ली, 1998

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## SEMESTER – IV

### PAPER - XIX

#### FIELD WORK (PHYSICAL AND SOCIO- ECONOMIC)

UNIT – I Trace the prominent features of area to be surveyed. Identify salient landform features of selected area on a topographical sheet. Identify the landforms on the surface, while in the field. Also note the agents of erosion, transportation and deposition associated with the landforms.

UNIT – II Identify and classify the Bio-diversity in the area (Flora & fauna). Observe the relationship of various landforms, flora and fauna with land-use, settlement structure and life style of people.

#### Socio – Economic

UNIT – III Procure a cadastral map of the village/town for field mapping of the features of land-use and land quality. Procure/prepare the settlement –site map through rapid survey to map the residential, commercial, recreational (parks, playground), educational, religious and other prominent features. Conduct a socio-economic survey of the households with a structured questionnaire. Supplement the information by personal observations and perceptions.

UNIT – IV Based on observations of the land-use and results of the socio-economic enquiry of the households, prepare a critical field-survey report. Photographs and sketches, in addition to maps and diagrams, may supplement the report.

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## SEMESTER – IV

### PAPER - XX PRACTICAL-IV

## GEOGRAPHICAL INFORMATION SYSTEM AND QUANTITATIVE TECHNIQUES

### Geographical Information System

An overview of GIS software, Elements of GIS: Data capture-verification and preprocessing-data storage and maintenance of databases-Database Management Systems: Spatial data creation, Editing the layers and table creation, Creation of non Spatial data, data manipulation, analysis (integrated analysis of spatial and attribute data, overlay analysis, neighborhood operations and connectivity functions) and spatial modeling-output format and generation. Buffer analysis, Network Analysis, Creation of DEM & TIN Generation of thematic map.

GPS – Demonstration and handling of Hand held GPS receivers, Checking and updating of existing map, Use of GPS to Check/update the existing topographical map, Ground truthing by GPS.

### Quantitative Techniques:

Running mean, Mean centre, Nearest Neighbor Analysis; Lorenz Curve, Normal distribution curve, Probability.

### SUGESSTED READINGS:

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2. Monkhouse, F.J. & H.R. Wilkinson; Maps and Diagrams Mathuen, London.
3. Mahmood, Aslam 1971 : Statistical Methods in Geographical studies Rajesh Pub., New Delhi.
4. Gregory, S. Statistical Methods and The Geographer.
5. Hammond & Mccullah 1977 : Quantitative Techniques in Geography, Clarendon Press,Oxford.
6. Fitz, Gomid, B.P. : Science in Geography, Developments in Geographical Method, Oxford University Press.
7. Yeaters, M. : An Introduction to Quantitative Analysis in Human Geography, McGraw Hill, New York.
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