

Semester – I

Course Structure for M.Sc. Geography under Choice Based Credit System

Core Courses (C): (Exclusively for Geography Students)

Sr. No.	Course Code	Exam Course Code	Nomenclature of the Course	Contact Hours			Credits	Max. Marks		
				L	S	P		Th	IA	T
Core Courses (CC): Exclusively for Geography Students										
1	16GEOG101CC	1061	Geomorphology	4	1	0	5	80	20	100
2	16GEOG102CC	1062	Climatology	4	1	0	5	80	20	100
3	16GEOG103CC	1063	Quantitative Methods in Geography	4	1	0	5	80	20	100
4	16GEOG104CC	1064	Practical Geography: Interpretation of Topographical Sheets and Computer Aided Statistical Diagrams	2	1	4	5	Distribution of Marks: Lab Work Test: 60 Record on Lab work: 20 Viva-Voce: 20		100
Discipline Centric Elective Courses (DCEC): To be Offered to the Students of Geography: Any One of the following Four Courses										
5.	16GEOG101DCEC	1065	Biogeography	4	1	0	5	80	20	100
6.	16GEOG102 DCEC	1066	Soil Geography	4	1	0	5	80	20	100
7.	16GEOG103 DCEC	1067	Resource Geography	4	1	0	5	80	20	100
8.	16GEOG104 DCEC	1068	Rural Geography	4	1	0	5	80	20	100
Total Credits:							25			500

Note:

L - Lecture;
Th - Theory

S - Seminar;
IA - Internal Assessment

P - Practical;
T - Total

Department of Geography

Semester – II

Sr. No.	Course Code	Exam Course Code	Nomenclature of the Course	Contact Hours			Credits	Max. Marks		
				L	S	P		Th	IA	T
Core Courses (CC): Exclusively for Geography Students										
1.	16GEOG201CC	2061	Geographical Thought	4	1	0	5	80	20	100
2.	16GEOG202CC	2062	Advanced Geography of India	4	1	0	5	80	20	100
3.	16GEOG203CC	2063	Oceanography	4	1	0	5	80	20	100
4.	16GEOG204CC	2064	Practical Geography: Morphometric and Hypsometric Analysis	2	1	4	5	Distribution of Marks: Lab Work Test: 60 Record on Lab work: 20 Viva-Voce: 20		
Discipline Centric Elective Courses (DCEC): To be Offered to the Students of Geography only Any One of the following Four Courses:										
5.	16GEOG201 DCEC	2065	Agricultural Geography	4	1	0	5	80	20	100
6.	16GEOG202 DCEC	2066	Urban Geography	4	1	0	5	80	20	100
7.	16GEOG203DCEC	2067	Political Geography	4	1	0	5	80	20	100
8.	16GEOG204DCEC	2068	Gender Issues in Geography	4	1	0	5	80	20	100
Foundation Course (FC): Compulsory course for the students of all Departments of the University										
9.	16GEOG201 FC	2069	Value Education	2	0	0	2	80	20	100
Total Credits							27	600		

Note:

L - Lecture;
Th –Theory

S - Seminar;
IA – Internal Assessment

P - Practical;
T – Total

Department of Geography

Semester – III

Sr. No.	Course Code	Exam Course Code	Nomenclature of the Course	Contact Hours			Credits	Max. Marks		
				L	S	P		Th	IA	T
Core Courses (CC): Exclusively for Geography Students										
1.	16GEOG301CC	3061	Regional Planning and Development	4	1	0	5	80	20	100
2.	16GEOG302CC	3062	Environmental Geography	4	1	0	5	80	20	100
3.	16GEOG303CC	3063	Population Geography	4	1	0	5	80	20	100
4.	16GEOG304CC	3064	Practical Geography: Field Work and Report Writing.	2	1	4	5	Distribution of Marks: Lab Work Test: 60 Record on Lab work: 20 Viva-Voce: 20		100
Discipline Centric Elective Courses (DCEC) To be Offered to the Students of Geography only Any One of the following Three Courses:										
5.	16GEOG301 DCEC	3065	Social Geography	4	1	0	5	80	20	100
6.	16GEOG302 DCEC	3066	Cultural Geography	4	1	0	5	80	20	100
7.	16GEOG303DCEC	3067	Geography of Haryana	4	1	0	5	80	20	100
8.	16GEOG304DCEC	3068	Urbanisation in India	4	1	0	5	80	20	100
Open Elective Courses (OEC): To be opted out of a pool of OECs as decided by the University										
9.	16GEOG301OEC	3069	Fundamentals of Geography	3	0	0	3	80	20	100
Total Credits:							28			600

Note: Open Elective Course as Offered by the Department of Geography for the Students of other Departments is - Fundamentals of Geography.

L - Lecture;
Th - Theory

S - Seminar;
IA - Internal Assessment

P - Practical;
T - Total

Department of Geography
Semester – IV

Sr. No.	Course Code	Exam Course Code	Nomenclature of the Course	Contact Hours			Credits	Max. Marks		
				L	S	P		Th	IA	T
Core Courses (CC): Exclusively for Geography Students										
1.	16GEOG401CC	4061	Fundamentals of Remote Sensing and GIS	4	1	0	5	80	20	100
2.	16GEOG402CC	4062	Research Methodology	4	1	0	5	80	20	100
3.	16GEOG403CC	4063	Geography of Natural Hazards and Disasters	4	1	0	5	80	20	100
4.	16GEOG404CC	4064	Practical Geography: Interpretation of Aerial Photographs & Satellite Images and Thematic Mapping	2	1	4	5	Distribution of Marks: Lab Work Test: 60 Record on Lab work: 20 Viva-Voce: 20		100
Discipline Centric Elective Courses (DCEC) To be Offered to the Students of Geography only Any One of the following Three Courses:										
5.	16GEOG401DCEC	4065	Geography of Tourism	4	1	0	5	80	20	100
6.	16GEOG402DCEC	4066	Geography of Settlements	4	1	0	5	80	20	100
7.	16GEOG403DCEC	4067	Geography of Health and Well-being	4	1	0	5	80	20	100
8.	16GEOG404DCEC	4068	Geography of Water Resources	4	1	0	5	80	20	100
Open Elective Courses: To be opted out of a pool of OECs as decided by the University										
9.	16GEOG401OEC	4069	Geography of India	3	0	0	3	80	20	100
Total Credits:							28			500

Note: Open Elective Course as Offered by the Department of Geography for the Students of other Departments is - Geography of India

L - Lecture;

S - Seminar;

P - Practical;

Th -Theory

IA - Internal Assessment

T - Total

Total Credits: 25+27+28+28=108

DEFINITIONS OF COURSES

1. CORE COURSE (CC)

- Core Courses (CC): Compulsory Course for the Students of Geography.

2. DISCIPLINE CENTRIC ELECTIVE COURSES (DCEC):

- Discipline Centric Elective Courses (DCEC): Optional Courses within the Department.

3. OPEN ELECTIVE COURSES (OEC)

- Open Elective Courses (OEC): Optional Courses which are to be opted out of a pool of courses from all departments as decided by the University.

4. FOUNDATION COURSES (FC):

- Foundation Courses (FC): A compulsory paper to be offered to all students of various Departments of the University.

Chairperson
Department of Geography

M.Sc. Geography: Semester-I
GEOMORPHOLOGY
Course Code-16GEOG10ICC
Exam Course Code-1061

End Semester Exam : 80 marks
Internal Assessment : 20 marks
Total : 100 marks
Time : 3 hrs.

Unit-I

Geomorphology - Definition, Nature and scope. History and development of geomorphic ideas: Fundamental concepts - Uniformitarian's, geological structure, process and stage. The Earth's interior - structure and constitution, Recent Views. Plate tectonics- meaning and concept; plates, plate margins and boundaries; plate motion; Tectonic activities along the boundaries and Distribution of plates.

Unit-II

Endogenetic processes - Faulting, folding and their geomorphic expressions. earthquake concept, causes, classification, intensity and magnitude, Geographical distribution. Vulcanism - concept, mechanism and causes; Volcanoes- classification, volcanic materials; Topography associated with vulcanicity and geographical distribution.

Unit-III

Exogenetic processes : Weathering and mass wasting - meaning and concept, controlling factors, classification and significance. Dynamics of fluvial, aeolian, glacial and karst processes and resulting landforms.

Unit-IV

Applied Geomorphology - meaning: Applications of Geomorphology in Regional planning, engineering projects, mineral exploration and hydrology. Regional Geomorphology of Punjab plain, Aravalli Region and Thar desert of India.

Note :

The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire syllabus. All questions carry equal marks.

Recommended Readings :

1. Bloom, A.L. (1992), *Geomorphology*, Second Edition, Prentice Hall of India, New Delhi.
2. Chorley, R.J.(1972), *Spatial Analysis in Geomorphology*, Methuen, London.
3. Cooke, R.U. and Doornkamp, J.C. (1974), *Geomorphology in Environmental Management—An Introduction*. Clarendon Press, Oxford.
4. Dayal, P. (1990), *A Text Book of Geomorphology*, Shukla Book Depot, Patna.
5. Dury, G.H. (1959), *The Face of the Earth*, Penguin Harmondsworth.
6. Fairbridge, R.W. (1968), *Encyclopaedia of Geomorphology*, Reinholdts, New York.

7. Garner. H.F.(1974), *The Origin of landscape-A Synthesis of Geomorphology*, Oxford University Press, London.
8. Goudie, A. (1993), *The Nature of the Environment*, Oxford & Blackwell, London.
9. Husain, Majid (2002), *Fundamentals of Physical Geography*, Second Edition, Rawat Publications, Jaipur and New Delhi.
10. McKnight, Tom L. (1987), *Physical Geography: A Landscape Appreciation*, Second Edition, Prentice Hall, Inc., Englewood Cliffs, N.J.
11. Ollier, C.D. (1979), *Weathering*, Longman, London.
12. Pitty, A.F. (1971), *Introduction to Geomorphology*, Methuen, London.
13. Sharma, H.S.(ed.) (1980), *Perspectives in Geomorphology*, Concept, New Delhi.
14. Singh, Savindra (1993), *Physical Geography*, Prayag Pustak Bhawan, Allahabad.
15. Singh, Savindra (1998), *Geomorphology*, Prayag Pustak Bhawan, Allahabad.
16. Skinner, B.J. & Porter, S.C.(1995), *The Dynamic Earth*, John Wiley, New York.
17. Sparks, B.W. (1960), *Geomorphology*, Longman, London.
18. Stoddart, D.R.(ed.) (1996), *Process and Form in Geomorphology*, Routledge, New York.
19. Strahler, A .N. (1988), *Earth Sciences*, Harper and Row Publishers, N.D.
20. Strahler, A.H. and Strahler, A.N. (2006), *Modern Physical Geography*, Fourth Edition, Willey-India, New Delhi.
21. Thornbury, W.D. (1991), *Principles of Geomorphology*, John Wiley, New Delhi (Indian Reprint)
22. Wooldridge, S. W and Morgan, R.S. (1991), *An Outline of Geomorphology*, Orient Longmans, Calcutta.

M.Sc. Geography: Semester I
CLIMATOLOGY
Course Code-16GEOG102CC
Exam Course Code -1062

End Semester Exam : 80 marks
Internal Assessment : 20 marks
Total : 100 marks
Time : 3 hrs.

Unit-I

Nature and Scope of Climatology: Climatic elements – atmospheric temperature, pressure, moisture, general atmospheric circulations jet stream.

Unit-II

Weather system and disturbances – air-mass, fronts, cyclones, tornades; Ocean atmospheric interaction- El Nino, Monsoon winds.

Unit-III

Global climate system - Approaches to climatic classification; Classification of Koppen, and Thornthwaite; Major Climates of the world-tropical and polar.

Unit -IV

Climatic changes - evidences, possible causes, global warming acid rain and problems of acid rain.

Note :

The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire syllabus. All questions carry equal marks.

Recommended Readings :

1. Barry, R.G. and Chorley, R.J. (1998), *Atmosphere, Weather and Climate*, ELBS, Methuen & Co. Ltd. London and New York.
2. Bhutani, Smita (2000), *Our Atmosphere*, Kalyani Publishers, New Delhi.
3. Collins, J.M. (2014), *Climatology*, Oxford, London.
4. Critchfield, J. H. (1993), *General Climatology*, Prentice Hall of India, New Delhi.
5. Das, P.K. (1987), *Monsoons*, National Book Trust, New Delhi.
6. Fein, J.S. and Stephens, P.N. (1987), *Monsoons*. Wiley Interscience.
7. Griffith, J.F. and Driscoll, D.M. (1982). *Survey of Climatology*, Charles Merrill.
8. India Met. Deptt. (1968). *Climatological Tables of Observatories in India*, Govt. of India.
9. Lal, D.S. (2010), *Fundamentals of Climatology*, Third Edition, Chaitanya Publishing House, Allahabad.
10. Lal, D.S. (2016), *Climatology*, Sharda Pustak Bhawan, Allahabad.
11. Lydolph, P.E. (1985), *The Climate of the Earth*, Rowman.
12. Menon, P.A. (1989), *Our Weather*. National Book Trust, New Delhi.
13. Peterson, S. (1969). *Introduction to Meteorology*. McGraw Hill Book, London.

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14. Riehl, H. (1968), *Introduction to Atmosphere*, McGraw Hill, New York.
15. Robinson, P.J. and Henderson S. (1999), *Contemporary Climatology*, Longman, London.
16. Singh, Savindra (2016), *Climatology*, Pravalika Publications, Allahabad.
17. Thompson, R.D. and Perry, A. (ed.) (1997), *Applied Climatology: Principles and Practice*, Routledge, London.
18. Trewartha, G.T. (1980), *Introduction to Climate*, McGraw Hill, New York.

M.Sc. Geography: Semester -1
QUANTITATIVE TECHNIQUES IN GEOGRAPHY
Course Code-16GEOG103CC
Exam Course Code -1063

End Semester Exam : 80 marks
Internal Assessment : 20 marks
Total : 100 marks
Time : 3 hrs.

UNIT - I

Data Collection: sources, types and methods; Data Classification - Frequency distributions; Graphical presentation of data- Histogram and Frequency Curve; Levels of data measurement: nominal, ordinal, interval, and ratio.

UNIT - II

Measures of Central Tendency: Arithmetic Mean, Median, Mode and their geographical significance;

Centrographic Techniques: mean centre, median centre and standard distance.

UNIT - III

Measures of dispersion: Mean deviation, Standard deviation and Coefficient of variation.

Measure of inequality: (i) Location quotient (ii) Lorenz curve.

UNIT - IV

Correlation and Regression Analysis: Scatter diagram, Spearman's Rank Difference and Karl Pearson's Product Moment Correlation Coefficients; Regression equations and Regression lines.

Sampling: Random and Non-random sampling methods- merits and limitations.

Note :

The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire syllabus. All questions carry equal marks.

Recommended Readings :

1. Ashis Sarkar (2013), *Quantitative Geography: Techniques and Presentations*, Orient BlackSwan, New Delhi
2. Ebdon, D. (1983), *Statistics in Geography : A Practical Approach*, Blackwell, London.
3. Gregory, S. (1978), *Statistical Methods and the Geographer* (4th Edition), Longman, London.
4. Gupta, S.P. (2010), *Statistical Methods*, Sultan Chand and Sons, Latest Edition.
5. Hammond, R. and McCullagh, P.S. (1974), *Quantitative Techniques in Geography: An Introduction*. Clarendon Press, Oxford.
6. John P. Cole and Cuchlaine A. M. King (1968), *Quantitative Geography*, John Wiley, London.
7. Johnston R. J. (1973), *Multivariate Statistical Analysis in Geography*, Longman, London.
8. Mathews, J.A. (1987), *Quantitative and Statistical Approaches to Geography*, Practical Manual, Pergamon, Oxford.
9. Maurice Yeats (1974), *An Introduction to Quantitative Analysis in Human Geography*, McGraw Hill. New York.
10. Pal, Saroj K. (1998), *Statistics for Geoscientists; Techniques and Applications*, Concept Publishing Company Pvt. Ltd., New Delhi.
11. Peter Haggett, Andrew D. Cliff, & Allan Frey (1977), *Location Methods*, Vols. I and II, Edward Arnold, London.
12. Peter, J. Taylor (1977), *Quantitative Methods in Geography*, Houghton Mifflin Company, Boston.
13. Rogerson, P.A. (2010), *Statistical Methods for Geography*, (A Student's Guide), 3rd Edition, Sage Publication, New Delhi.
14. Smith, David M. (1975), *Patterns in Human Geography*, Penguin, Harmondsworth.
15. Unwin, David (1981), *Introductory Spatial Analysis*, Methuen, London.
16. Yeates, Mauris (1974), *An Introduction to Quantitative Analysis in Human Geography*, McGraw Hill. New York.

M.Sc. Geography: Semester-I

**PRACTICALS - INTERPRETATION OF TOPOGRAPHICAL SHEETS AND
COMPUTER AIDED STATISTICAL DIAGRAMS AND GRAPHS**

Course Code-16GEOG104CC

Exam Course Code -1064

Max. Marks : 100

Time : 4 Hours

Distribution of Marks :

Lab work test : 60

Record on labwork : 20

Viva Voce : 20

UNIT-I

Introduction to Maps: Definition and Types of Maps, Map scale, Conventional map symbols, Importance and uses of maps

Interpretation of Topographical maps: Topographical maps and their types, Basic information on Topographical sheets, Conventional Signs, Identification of Physical and Cultural details on Survey of India Toposheets.

UNIT - II

Introduction to Computer: Components of Computer—Hardware and Software; Use of Computers in Geography.

Introduction to Microsoft Excel: Input of data, Bar Diagram, Pie Diagram, Scatter Diagram, Line Graph. Placement of heading and sub-heading, legend, Font size, Style, Bold, Italics, Changes from colour to different shade pattern. Different weight, colour and pattern to X and Y coordinates. Page layout. Ascending and Descending order.

Note: The question paper will contain six questions in all, including three questions from each unit. Candidate(s) are required to attempt three questions in all selecting at least one question from each unit.

Recommended Readings:

1. Misra, R.P. and Ramesh, A. (1999), *Fundamentals of Cartography*, Concept Publishing Company, New Delhi
2. Monkhouse, F.J. and Wilkinson, H.R. (1980), *Maps and Diagrams*, B. I. Publications, New Delhi.
3. Punmia, B.C. (1981). *Surveying*. Standard Book House, New Delhi.
4. Sharma, J.P. (1996), *Prayogik Bhoogol*, Restogi Publications, Meerut.
5. Singh, R.L. (1979), *Elements of Practical Geography*, Kalyani Publishers, New Delhi.
6. Yadav, H.L.. (2000). *Prayogik Bhoogol Ke Aadhar* (Fundamentals of Practical Geography), Radha Publication. New Delhi.

M.Sc. Geography: Semester-1

BIOGEOGRAPHY

Course Code-16GEOG101DCEC

Exam Course Code -1065

End Semester Exam: 80 marks

Internal Assessment: 20 marks

Total: 100 marks

Time: 3 hrs.

UNIT-I

Biogeography – Development and scope: Biosphere - definition, nature and composition; Environment, Habitat and Plant-animal association.

Origin of fauna and flora: Major gene centers; domestication of plants and animals and their disposal agents and roots.

Unit-II

Distribution of plant life on the earth and its relation to soil, climate and human activities.

Geographical distribution of animal life on the earth and its relation to vegetation types, climate and human activities.

Unit-III

Ecosystem - Meaning, types, components and functioning of ecosystem; Evolution of living organism and factors influencing their distribution on the earth.

Biomes- Meaning and types.

Unit-IV

Bio-geographical realms: Zoogeography and Zoogeographical realms. Zoogeography and its Environmental Relationship

Environmental hazards: Ecological consequences, human perception and adjustment with respect to flood, drought and earthquake.

Bio-Reserves in India: National forest and wild life policy of India.

Note: The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire syllabus. All questions carry equal marks.

Recommended Readings:

1. Agarwal, D.P. (1992). *Man and Environment in India Through Ages*, Book & Books.
2. Bradshaw, M.J. (1979), *Earth and Living Planet*, ELBS, London.
3. Cox. C.D. and Moore, P.D. (1993), *Biogeography: An Ecological and Evolutionary Approach* (Fifth Edition), Blackwell.
4. Gaur, R. (1987), *Environment and Ecology of Early Man in Northern India*, R.B. Publication Corporation.
5. Hoyt, J.B.(1992), *Man and the Earth*, Prentice Hall, U.S.A.
6. Huggett, R.J. (1998), *Fundamentals of Biogeography*, Routledge, U.S.A.
7. Illics, J. (1974), *Introduction to Zoogeography*, Mcmillian, London.
8. Khoshoo, T.N. and Sharma. M. (eds.) (1991), *Indian Geosphere-Biosphere*, Har-Anand Publication, Delhi.
9. Lapedes, D.N. (ed.) (1974), *Encyclopedia of Environmental Science*, McGraw Hill.
10. Lllies, J. (1974), *Introduction of Zoogeography*, McMillan, London.
11. Mathur, H.S. (1998), *Essentials of Biogeography*, Anuj Printers, Jaipur.
12. Pears, N. (1985), *Basic Biogeography*. 2nd Ed. Longman, London.
13. Simmon. I.G.(1974), *Biogeography, Natural and Cultural*, Longman, London.
14. Tivy, J. (1992). *Biogeography: A Study of Plants in Ecosphere*, 3rd Edition. Oliver an Boyd, U.S.A.

M.Sc. Geography: Semester -1
SOIL GEOGRAPHY
Course Code-16GEOG102DCEC
Exam Course Code -1066

End Semester Exam : 80 marks
Internal Assessment : 20 marks
Total : 100 marks
Time : 3 hrs.

Unit - I

Nature, scope and significance of Soil Geography; its relationship with Pedology.

Soil forming factors: parent material, organic, climatic, topographic; and Processes of soil formation and soil development (physical, biotic and chemical). Soil Profile and its development.

Unit - II

Pedogenic regimes: podzolization, laterisation, calcification and gleezation and salinization.

Physical properties of soils: morphology, texture, structure, water, air, temperature and other properties of soil;

Chemical properties of soil and soil reaction; methods to improve the physical qualities of soils.

Unit - III

Genetic classification of soils; Taxonomic classification of soils: zonal, azonal and intra-zonal soils, their characteristics and world patterns; classification and spatial distribution of Indian soils.

Unit - IV

Soil conservation in India; Conservation methods to improve the physical qualities of soils; Soil erosion, and degradation; Soil Survey - methods and mechanism.

Integrated soil and water management: Sustainable development of soil resources with reference to India.

Note: The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire syllabus. All questions carry equal marks.

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Suggested Readings

1. Backman, H.O and Brady, N.C. (1960), *The Nature and Properties of Soils*, McMillan, New York.
2. Basile, R.M. (1971), *A Geography of Soils*, William C. Brown, Dubuque, Ia.
3. Bennet, Hugh H.: *Soil Conservation*, McGraw Hill, New York.
4. Birkland P.W. (1999), *Soils and Geomorphology*, Oxford University Press, Inc., New York.
5. Brady Nyle, C. and Weil Raymond, C. (2012), *The Nature and Properties of Soils*, Pearson publishing. Prentice hall of India, Pvt. Ltd. , New Delhi.
6. Bunting, B.T. (1973), *The Geography of Soils*, Hutchinson, London.
7. Clarke, G.R. (1957), *Study of the Soil in the Field*, Oxford University Press, Oxford.
8. Daji, J.A.(1970), *A Text Book of Soil Science*, Asia Publishing House, New Delhi.
9. De N.K. and Ghos, P. (1993), *India: A Study in Soil Geography*, Sribhumi Publishing Co., Calcutta.
10. Foth H.D. and Turk, L.M. (1972), *Fundamentals of Soil Science*, John Wiley, New York.
11. Govinda Rajan, S.V. and Gopala Rao, H.G. (1978), *Studies on Soils of India*, Vikas, New Delhi.
12. Govinda Rajan, S.V. and Gopala Rao, H.G.(1978), *Studies on Soils of India*, Vikas Publications, New Delhi.
13. James S. Gardiner (1977), *Physical Geography*, Harper's College Press, New York.
14. Mc. Bride, M.B.: *Environmental Chemistry of Soils*, Oxford University Press, New York 1999.
15. McBride, M.B. (1999), *Environmental Chemistry of Soils*, Oxford University Press, New York.
16. Mcknight, Tom L. (1987), *Physical Geography: A Landscape Appreciation (2nd Ed.)*, Prentice Hall, inc., Englewood Cliffs, N.J.
17. Pitty, A.F. (1978), *Geography and Soil Properties*. University Press, London.
18. Raychoudhuri, S.P. (1958), *Soils of India*, ICAR, New Delhi.
19. Sehgal, J. (2000), *Pedology-Concepts and Applications*. Kalyani Publications, New Delhi.
20. Steila, D. (1976), *The Geography of Soils*. Prentice Hall, inc., Englewood Cliffs, N.J.

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M.Sc. Geography: Semester I

RESOURCE GEOGRAPHY
Course Code-16GEOG103DCEC
Exam Course Code -1067

End Semester Exam : 80 marks
Internal Assessment : 20 marks
Total : 100 marks
Time : 3 hrs.

Unit-I

Nature, Scope and Significance of Geography of Resource; Definition and Concept of Resources, Classification of Resources.

Unit-II

Models of Natural Resource Processes: Zimmermann's Primitive and Advance Models of Natural Resource Process, Kirk's Decision Model, Brookfield System Model.

Unit-III

Use and Misuse of Resources: Soil Resource; Water Resource; Forest Resource and Mineral Resources; Future Prospects of Natural Resources.

Unit-IV

Conservation and Management of Natural Resources: Meaning and Concept of Conservation of Natural Resources; Resource Conservation and Management Methods of Natural Resources- Soil Resource, Water Resource, and Forest Resource; Problems of Natural Resource Management in India.

Note:

The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire Syllabus. All questions carry equal marks.

Recommended Readings:

1. Barbier, Edward B. (2005), *Natural Resources and Economic Development*, Cambridge University Press.
2. Borton, I. and Kates. R.W. (1984), *Readings in Resource Management and Conservation*, University of Chicago Press, Chicago.
3. Bruce, Mitchell (1989), *Geography and Resource Analysis*, John Wiley and Son, New York.
4. Eliot Hurst. M.E. (1972). *A Geography of Economic Behaviour : An Introduction*, Duxbury Press, California.
5. Gautam. Alka (2013). *Geography of Resources: Exploitation, Conservation and Management*. Sharda Pustak Bhawan. Allahabad.

6. Guha. J.L. and Chattroj. P.R. (1994). *Economic Geography-A Study of Resources*, The World Press Pvt. Ltd., Calcutta
7. Kates, R.W. & Burton. I (eds) (1986), *Geography, Resources and Environment*, Vols. I & II, University of Chicago Press, Chicago.
8. M. Laren, D.J. and Skinnet, B.J.(eds.) (1986), *Resources and World Development*, John Wiley & Sons, New York.
9. Martino, R.L. (1969), *Resource Management*. Mc Graw Hill Book Co., London.
10. Negi, B.S. (2000), *Geography of Resources*. Kedar Nath and Ram Nath, Meerut.
11. Owen, Oliver. S. (1971). *Natural Resource Conservation : A Ecological Approach*. McMillion New Delhi.
12. Raja, M. (1989), *Renewable Resources Development*, Concept Pub. New Delhi.
13. Ramesh, A. (1984), *Resource Geography* (Edited by R.P. Misra), **Contribution to Indian Geography**, Vol. Heritage Publishers, New Delhi.
14. Singh, A and Raja, M. (1982), *Geography of Resources and Conservation* (Hindi Edition) Pargati Parkashan. Meerut.
15. Zimmermann, E. W. (1951), *World Resources and Industries*, Harper and Brothers, New Delhi.

M.Sc. Geography: Semester-I

RURAL GEOGRAPHY
Course Code-16GEOG104DCEC
Exam Course Code -1068

End Semester Exam : 80 marks
Internal Assessment : 20 marks
Total : 100 marks
Time : 3 hrs.

UNIT-I

Rural Geography: Meaning, Nature and Scope. Types of community facilities and services - water, sanitation, electricity.

Provider of community facilities- governmental, non-governmental and philanthropic organizations; Community facilities and services programmes

Unit-II

Rural House Types : House Types based on Building Materials, Size and Shape as basis for classification; House Types based on Socio-Economic Status; Regional Patterns of Houses in India.

Unit-III

Rural Development in India: Determinants of rural development; Approaches to rural development: Community development approach, sectoral approach, target approach, integrated approach, participatory development approach; Sustainable rural development.

Issues of Rural Development in India: Land Reforms, Agricultural land-use, Rural Poverty, Rural Unemployment. Rural education, health and health care delivery systems.

Unit-IV

Rural Planning: District and block level planning: Area specific projects/programmes - Tribal Area Development and Integrated Wasteland Development programme; Agricultural specific Programmes: High Yielding Variety programme, Integrated Rural Development Programmes (IRDP).

Note: The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire syllabus. All questions carry equal marks.

Recommended Readings:

1. Alam, S.M. *et al.* (1982). *Settlement System of India*. Oxford and IBH Publication Co., New Delhi.

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2. Armendera (1998), *Poverty, Rural Development and Public Policy*; Deep and Deep Publishers, New Delhi.
3. Chisholm, M. (1967), *Rural Settlements and Land Use*, John Wiley, New York.
4. Clout, H.D. (1977), *Rural Settlements and Land Use*, John Willy, New York.
5. Das, K.D. (2007). *Dynamics of Rural Development*. Deep and Deep Publishers, New Delhi.
6. Garg, A. (1992), *Working and Impact of Integrated Rural Development Programme*, Deep and Deep Publishers, New Delhi.
7. Hudson, F.S. (1976), *A Geography of Settlements*, Mac Donald & Evans, New York.
8. Jha, U.M. (1995), *Rural Development in India: Problems and Prospects*.
9. Madan, G.R. (2010), *Indian Rural Problems*, Radha Publications, New Delhi.
10. Mandal, R.B. (1988). *Systems of Rural Settlements in Developing Countries*, Concept Publication, New Delhi
11. Mandal, R.B. (2001). *Introduction to Rural Settlements*, Concept Publication, New Delhi.
12. Misra, H.N. (1987), *Rural Geography*, Vol. IX, Contributions to Indian Geography, Heritage Publishers, New Delhi.
13. Misra, S.K. and Puri, V.K. (2009), *Indian Economy*, Himalaya Publishing House, New Delhi.
14. Nath, V. (2010), *Rural Development and Planning in India*, Concept Publication, New Delhi
15. Nikkiran, S. and Ramesh, G. (2010), *Research Methods in Rural Development*, Deep and Deep Publications, New Delhi
16. Rai, S. (2005), *Kurukshetra*. Ank. 12, October, Gramin Vikas Mantralaya, New Delhi.
17. Sahu, B.K. (2003), *Rural Development in India*; Anmol Publishers, Delhi.
18. Satendra and Sharma, V.K. (2004), *Sustainable Rural Development for Disaster Mitigation*, Concept, New Delhi.
19. Shah, G. Thorat S. *et al.* (2006). *Untouchability in Rural India*, Sage Publication, New Delhi.
20. Singh, R.L. (1976), *Geographic Dimensions of Rural Settlements*, NGSi, Varanasi.
21. Singh, R.L. and K.N. Singh eds. (1975), *Readings in Rural Settlements Geography*, NGSi, Varanasi.
22. Singh, R.Y. (1994). *Geography of Settlements*, Rawat Publication, New Delhi.
23. Singh, R.Y. (2005). *Adhiwas Bhugol*. (in Hindi) Rawat Publication, New Delhi.
24. Sinha, R.N.P., *Geography and Rural Development*; Manohar Publishers and Distributors, New Delhi.
25. Sinha, S.P. & Singh, S. (2007). *Strategies for Sustainable Rural Development*, Deep and Deep Publishers, New Delhi.

SEMESTER-2

M.Sc. Geography: Semester-2
GEOGRAPHICAL THOUGHT
Course Code-16GEOG201CC
Exam Course Code -2061

End Semester Exam : 80 marks
Internal Assessment : 20 marks
Total : 100 marks
Time : 3 hrs.

UNIT - I

Geography - its field and place in the classification of sciences: Basic concepts in the philosophy of geography - distributions, relationships, interactions, areal differentiation and spatial organization.

Historical Development: Contributions of Greek (Eratosthenes, Ptolemy) and Roman (Strabo) geographers during ancient period.

UNIT - II

Historical Development: Contributions of German (Bernard Varenius, Immanuel Kant, Alexander von Humboldt and Carl Ritter) geographers.

Geography in the 19th century– Contributions of Friedrich Ratzel, and Paul Vidal de la Blache.

Unit – III

Dualisms in Geography-Systematic & Regional Geography; Physical & Human Geography; Concept of Region in Geography.

Unit-IV

Quantitative revolution in Geography; Behavioural and Humanistic Approaches in Geography
Dominant paradigms in Geography - environmental determinism and possibilism.

Note : The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire syllabus. All questions carry equal marks.

Recommended Readings:

1. Abler, Ronald; Adams, John S. Gould, Peter. (1971). *Spatial Organization : The Geographer's View of the World*. Prentice Hall, N.J.
2. Agnew, John *et al.* (ed.) (1996). *Human Geography*, Blackwell Publishers London.

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3. Aitken Stuart & Gill Valentine (ed.) (2006). *Approaches to Human Geography*, Sage, London.
4. Bonnet, Alastair (2008). *What is Geography?* Sage, New Delhi.
5. Cloke, Paul and Johnston, Ron (2005), *Spaces of Geographical Thought*, Sage, London.
6. Dickinson, R.E. (1969). *The Makers of Modern Geography*, London.
7. Dikshit, R.D. (ed.) (1994). *The Art & Science of Geography: Integrated Readings*, Prentice Hall of India, New Delhi.
8. Dikshit, R.D. (1999), *Geographical Thought - A Contextual History of Ideas*, Prentice Hall of India, New Delhi.
9. Hartshorne, R. (1959). *Perspective on Nature of Geography*, Rand McNally & Co.
10. Harvey, David (1969), *Explanation in Geography*, Edward Arnold, London.
11. Harvey, David (1990), *The Condition of Postmodernity*, Blackwell, London.
12. Harvey, Milton E and Brian P. Holly (1981), *Themes in Geographic Thought*, Croom Helm, London.
12. Holt-Jonson, Arild (2011), *Geography, History and Concepts: A Students' Guide*, Sage.
13. Hubbard, Phil, Rob Kitchin and Gill Valentine (2008), *Key Texts in Human Geography*, Sage, London.
14. Hubber, Phil *et al.* (2002). *Thinking Geographically: Space Theory and Contemporary, Human Geography*, Continuum, New York.
15. Husain, M. (2001), *Evolution of Geographic Thought* (Fourth Edition), Rawat Publication Jaipur.
16. James P.E. and Martin J. Geoffret (1972), *All Possible Worlds*, John Wiley and Sons, New York.
17. Johnston, R.J. (1988). *The Future of Geography*, Methuen, London.
18. Johnston, R.J. (2004), *Geography and Geographers*, Arnold London.
19. Minshull, R. (1970). *The Changing Nature of Geography*, Hutchinson University Library, London,
20. Peet, Richard (1998). *Modern Geographical Thought*, Oxford Blackwell.
21. Peet, Richard (2003), *Radical Geography*, (Indian Reprint), Rawat Publication, New Delhi.
22. Soja, Edward W. (1997). *Postmodern Geographies*, Indian Ed. Rawat Publications, New Delhi.
23. Unwin, Tim (1992). *The Place of Geography*, Pearson Education Limited, Essex.
24. Tim, Cresswel (2013). *Geographic Thought : A Critical Introduction*, Wiley- Blackwell, New York.

M. Sc. Geography: Semester-2
ADVANCED GEOGRAPHY OF INDIA
Course Code-16GEOG202CC
Exam Course Code -2062

End Semester Exam : 80 marks
Internal Assessment : 20 marks
Total : 100 marks
Time : 3 hrs.

Unit-I: Physical Setting:

Space relationship of India with neighboring countries; Physiographic regions; Drainage system and watersheds; Climate: Mechanism of Indian monsoons and rainfall patterns, Climatic regions; Natural vegetation; Soil types and their distributions.

Unit-II: Agriculture and Resources:

Major characteristics and problems of agriculture; Agricultural regions; Agro-climatic regions. Green revolution and its impact on Indian agriculture; Dry farming and its significance; Livestock resources and white revolution.

Non-Conventional Energy resources; Mineral resources-coal and petroleum.

Unit-III: Industry, Transport, Communication and Trade:

Evolution of industries; Locational factors of cotton textile, iron and steel, and automobile industries; Industrial regions of India.

Road, railway, and pipeline networks and their complementary roles in regional development.

Unit-IV: Regional Development and Planning:

Experience of regional planning in India; Integrated rural development programmes; Planning for backward area, desert, drought prone, hill, tribal area development;

Contemporary Issues:

Environmental hazards: earthquakes, Tsunamis, floods and droughts-causes and mitigation measures.

Population explosion and food security; Regional disparities in economic development; Linkage of rivers;

Recommended Readings:

1. Centre for Science & Environment (1988). *State of India's Environment*, New Delhi. Delhi.
2. Desphande. C.D.(1992). *India : A Regional Interpretation*. ICSSR & Northern Book Centre, New Delhi.
3. Dreza, Jean & Amartya Sen (ed.) (1996). *India Economic Development and Social Opportunity*, Oxford University Press. New Delhi.

4. Dubey, R. N.(1974). *Economic Geography of India*, Kitab Mahal, Allahabad
5. Gautam, Alka (2014). *Advanced Geography of India*, 4th Ed., Sharda Pustak Bhawan, Allahabad.
6. Hussain, Majid (2015). *Geography of India*, Mc Graw Hill Education.
7. Joshi, H. L.(1990). *Industrial Geography of India*, Rawat Publications, Jaipur
8. Khullar, D.R. (2014). *India: A Comprehensive Geography*, 3rd Ed., Kalyani Publishers, New Delhi.
9. Kundu A. and Raza, Moonis (1992), *Indian Economy: The Regional Dimension* Speclaum Publishers, New Delhi. 1992.
10. Nag, P. and Sengupta. S. (1992), *Geography of India*, Concept publications. Co., New Delhi.
11. Rautray, J.K.(1993), *Geography of Regional Disparity*, Asian Institute of Technology, Bankok.
12. Robinson, Francs (1989). *The Cambridge Encyclopaedia of India, Pakistan, Bangladesh, Sri Lanka, Nepal, Bhutan & Maldives*, Cambridge University Press, London.
13. Sharma, T.C. and Coutinno, O. (1988). *Economic and Commercial Geography of India*, Vikas Publishing House Pvt. Ltd. New Delhi.
14. Singh R.L. (ed.) (1971). *India - A Regional Geography*, National Geographical Society, India, Varanasi.
15. Spate OHK & ATA Learnont (1967), *India & Pakistan*, Methuen, London.
16. Tirtha, R. and Gopal Krishan (1996). *Emerging India*, Reprinted by Rawat Publications, Jaipur.
17. Tirtha, R. and Krishan G. (1996). *Geography of India*, Rawat Publications, Jaipur & New Delhi.
18. Tiwari, R. C. (2010). *Geography of India*, 6th Ed., Prayag Pustak Bhawan, Allahabad.

M.Sc. Geography: Semester-2
OCEANOGRAPHY
Course Code-16GEOG203CC
Exam Course Code -2063

End Semester Exam : 80 marks
Internal Assessment : 20 marks
Total : 100 marks
Time : 3 hrs.

UNIT-I

Definition, nature and scope of oceanography, oceanography and other sciences.

Wegner's drift hypothesis and sea floor spreading and Plate Tectonics.

Unit-II

Major features of ocean basins: continental margin and deep-ocean basins; ocean floor profile-continental shelf, slope, ridge and deeps.

Coral reefs-formation and types: ocean deposits: configuration of ocean floors of Indian Ocean and Atlantic Ocean.

Unit-III

Physical and chemical properties of sea water; Interlink between atmospheric circulation and circulation patterns in the oceans: Temperature of oceans; salinity in oceans; density of oceans;

Currents of Atlantic, Pacific and Indian Ocean: Ocean currents and their impact on climate and economy.

Unit-IV

Oceans as source of food, mineral and energy resources - evidences, mechanism and impact.
Global warming and sea-level changes: Impact of Humans on the Marine Environment

Note: The question will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire syllabus. All questions carry equal marks.

Recommended Readings:

1. Davis Richard, J.A. (1986). *Oceanography - An Introduction to the Marine Environment*, Wm. C. Brown, Iowa.
2. Denny, M. (2008). *How the Ocean Works: An introduction to Oceanography*, Princeton University Press, New Jersey.

3. Duxbury, C.A and Duxbury B. (1996). *An Introduction to the World's Oceans*, 2nd ed. C. Brown. Iowa.
4. Garrison, T. (1995). *Essentials of Oceanography*, Wardsworth Pub. Co., London.
5. Garrison, T. (2001), *Oceanography - An Introduction to Marine Science*, Books/Cole, Pacific Grove, USA.
6. Gross, M. Grant (1987). *Oceanography: A View of the Earth*, Prentice - Hall Inc., New Jersey.
7. Kennel, J.P. (1982). *Marine Geology*. Prentice Hall, Englewood Cliff, New Jersey.
8. Kerhsaw. S. (2004). *Oceanography : An Earth Science Perspective*. Routledge, UK.
9. King, C.A.M. (1962). *Oceanography for Geographers*.
10. Lal, D.S. (2007), *Oceanography*, Sharda Pustak Bhawan, Allahabad.
11. Sharma, R.C. (1985). *The Oceans*, Rajesh Publications, New Delhi.
12. Sharma, R.C. and Vatal. V. (1986). *Oceanography for Geographers*. Chatanaya Publishing, Allahabad.
13. Shepart, F. (1969), *The Earth Beneath the Sea*, Athneum, Rev. Ed., New York.
14. Sieboldt, E., and W.H. Berger (1994). *The Sea Floor*, 2nd Ed., Freeman, New York.
15. Singh, Savindra (2008). *Oceanography*, Prayag Pustak Bhawan, Allahabad.
16. Stopmmel, H. (1987). *A View of the Sea*. Princeton University Press, New Jersey.
17. Ummerkutty, A.N.P. (1985). *Science of the Oceans and Human Life*, NBT, New Delhi.
18. Von Arx. W.S. (1962). *An Introduction to Physical Oceanography*, Addison, Wesley, New York.

M.Sc. Geography: Semester -2

PRACTICAL GEOGRAPHY: MORPHOMETRIC AND HYPOMETRIC ANALYSIS

Course Code-16GEOG204CC

Exam Course Code -2064

Distribution of Marks

Lab Work Test : 60

Record on Lab Work : 20

Viva-Voce : 20

Total : 100

Time : 4 hrs.

UNIT - I

Morphometric Analysis of Drainage basin: Types and its geographical significance; **Linear Aspects:** Stream ordering based on Horton and Strahler, Bifurcation ratio, **Areal Aspects:** Geometry of basin shape, Basin Perimeter, Length and Area, Stream frequency and Drainage density

UNIT - II

Relief Aspects: Hypsometric analysis- Hypsometric curve and Integral Hypsometric curve, Clinographic analysis, Altimetric analysis, **Slope Analysis-** Average Slope (Wentworth's method), Relative Relief (Smith's method), Dissection Index, **Profile Analysis** -Longitudinal profile.

Note :

The question paper shall contain six questions in all, including three questions from each unit. Candidate(s) are required to attempt three questions in all selecting at least one question from each unit. All questions carry equal marks.

Recommended Readings:

1. Dury, G.H. (1966). *Essays in Geomorphology*. Heinmann, London.
2. Misra, R.P. and Ramesh. A. (1999). *Fundamentals of Cartography*, Concept Publishing Company, New Delhi.
3. Monkhouse, F.J. and H.R. Wilkinson (1980), **Maps and Diagrams**, B. I. Publications, Bombay.
4. Singh, R.L. (1979), *Elements of Practical Geography*, Kalyani Publishers, New Delhi.
5. Singh, S. (1997), *Geomorphology*. Prayag Pustak Bhawan, Allahabad.
6. Yadav, H.L., (2000). *Prayogik Bhoogol Ke Aadhar (Fundamentals of Practical Geography)*, Radha Publication, New Delhi.

M.Sc. Geography: Semester II
AGRICULTURAL GEOGRAPHY
Course Code-16GEOG201DCEC
Exam Course Code -2065

End Semester Exam : 80 marks
Internal Assessment : 20 marks
Total : 100 marks
Time : 3 hrs.

UNIT-I

Agricultural Geography: nature, scope, significance and development. Approaches to the study of Agricultural Geography: commodity, systematic and regional and systems. Origin and dispersal of agriculture. Sources of agricultural data.

UNIT-II

Theories of agricultural location-Von Thunen's theory of agricultural location and its recent modifications.

Agricultural Productivity: Concept, determinants and methods of its measurement; regional imbalances in agricultural productivity in India.

UNIT-III

Agricultural system of the world: Whittlessey's classification - shifting cultivation, plantation farming, Mediterranean agriculture, commercial grain farming.

Agricultural region: concept and techniques-Normative technique, empirical technique, single element technique and statistical technique.

UNIT-IV

Agriculture in India- Specific problems in Indian agriculture and their management and planning; Agricultural Policy in India; agricultural planning regions.

Green Revolution, White Revolution, Food deficit and food surplus regions.

Note:

The question will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire syllabus. All questions carry equal marks.

Recommended Readings

1. Andreae, B. (1981). *Farming Development and Scope: A World Agricultural Geography*, Water de Grytar, New York.
2. Bayliss Smith, T.P.(1987). *The Ecology of Agricultural Systems*. Cambridge University Press, London.
3. Berry, B.J.L. *et al.* (1976). *The Geography of Economic Systems*. Prentice Hall, New York.
4. Brown, L.R. (1990). *The Changing World Food Prospects - The Nineties and Beyond*, World Watch Institute, Washington D.C.
5. Dyson, T. (1996). *Population and Food - Global Trends and Furure Prospects*, Routledge, London.
6. Gautam, Alka (2012). *Agricultural Geography*, Sharda Pustak Bhawan, Allahabad.
7. Geoffrey, H.F.: (1970). *Geography of Agriculture: Themes in Research*, Practice Hall, N.J.
8. Gregor, H.P. (1970). *Geography of Agriculture*. Prentice Hall, New York.
9. Grigg, D. (1995), *Introduction to Agricultural Geography*, Longman, Ontario.
10. Grigg, D.B. (1974). *The Agricultural Systems of the World*, Cambridge University Press, New York.
11. Hartshorn, T.N. and Alexander, J.W. (1988), *Economic Geography*. Prentice Hall, New Delhi.
12. Hussain, M. (1997). *Systematic Agricultural Geography*, Rawat Publications, Jaipur.
13. Mannion, A.M. (1995). *Agriculture and Environment Change*. John Wiley, London.
14. Mohammad, Ali and Hanafī, Y.S. (2013). *Agricultural Geography*, Vasundhra Prakashan, Gorakhpur.
15. Morgan W.B. and Norton, R.J.C. (1971). *Agricultural Geography*, Mathuen, London.
16. Morgan, W.B. (1978). *Agriculture in the Third World - A Spatial Analysis*. Westview Press, Boulder.
17. Sauer, C.O. (1969). *Agricultural Origins and Dispersals*. M.I.T. Press, Mass, U.S.A.
18. Shafi, M. (2006). *Agricultural Geography*, Pearson Education, New Delhi.
19. Singh, J. and Dhillon, S.S. (1984). *Agricultural Geography*, Tata McGraw Hill Publishing Co. Ltd., New Delhi.
20. Symons, Leslic (1967). *Agricultural Geography*, G. Bell and Sons, London.
21. Tarrant, J.R. (1974). *Agricultural Geography*. Wiley, New York.

M.Sc. Geography: Semester II
RESOURCE GEOGRAPHY
Course Code-16GEOG202DCEC
Exam Course Code -2066

End Semester Exam : 80 marks
Internal Assessment : 20 marks
Total : 100 marks
Time : 3 hrs.

UNIT-I

Resource Geography: meaning, nature, and scope; Concept of Resources, Classification of Resources; Factors of Resource Creation; Resources and Environment – scarcity and sustainability.

UNIT-II

Models of Natural Resource Process: Zimmermann's Primitive and Advance Models of natural resource process, Kirk's Decision Model. Brookfield System Model.

UNIT-III

Natural Resources: Soil Resource, Water Resource, Forest Resource and Mineral Resources, Future prospects of Natural resources

UNIT-IV

Conservation and Management of Natural Resources: Meaning and Concept of conservation of Natural Resources, Resources Conservation and Management Methods of Natural resources: Soil Resource, Water Resource, Forest Resource and Mineral Resources, Problems of Natural Resource Management in India; Policies for sustainable resource-based development.

Note:

The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire Syllabus. All questions carry equal marks.

Recommended Readings:

16. Barbier, Edward B. (2005). *Natural Resources and Economic Development*, Cambridge University Press.
17. Borton, I. and Kates, R.W. (1984). *Readings in Resource Management and Conservation*, University of Chicago Press, Chicago.
18. Bruce, Mitchell (1989). *Geography and Resource Analysis*, John Wiley and Son, New York.
19. Eliot Hurst, M.E. (1972). *A Geography of Economic Behaviour : An Introduction*, Duxbury Press, California.
20. Gautam, Alka (2013). *Geography of Resources: Exploitation, Conservation and Management*, Sharda Pustak Bhawan, Allahabad.
21. Guha, J.L. and Chatterjee, P.R. (1994). *Economic Geography-A Study of Resources*, The World Press Pvt. Ltd., Calcutta

22. Kates, R.W. & Burton, I (eds) (1986). *Geography, Resources and Environment*, Vols. I & II, University of Chicago Press, Chicago.
23. M. Laren, D.J. and Skinnet, B.J.(eds.) (1986), *Resources and World Development*, John Wiley & Sons, New York.
24. Martino, R.L. (1969). *Resource Management*. Mc Graw Hill Book Co., London.
25. Negi, B.S. (2000). *Geography of Resources*, Kedar Nath and Ram Nath, Meerut.
26. Owen, Oliver. S. (1971). *Natural Resource Conservation : A Ecological Approach*. McMillion New Delhi.
27. Raja, M. (1989). *Renewable Resources Development*, Concept Pub. New Delhi.
28. Ramesh, A. (1984), *Resource Geography* (Edited by R.P. Misra), **Contribution to Indian Geography**, Vol. Heritage Publishers, New Delhi.
29. Singh, A and Raja, M. (1982). *Geography of Resources and Conservation* (Hindi Edition) Pargati Parkashan, Meerut.
30. Zimmermann, E. W. (1951), *World Resources and Industries*, Harper and Brothers, New Delhi.

M.Sc. Geography: Semester II
POLITICAL GEOGRAPHY
Course Code-16GEOG203DCEC
Exam Course Code -2067

End Semester Exam : 80 marks
Internal Assessment : 20 marks
Total : 100 marks
Time : 3 hrs.

UNIT - I

Nature and scope of Political Geography: its approaches and recent trends.
Schools of thought: Political Economy, World Systems, Place, and Globalisation.

UNIT - II

Concepts of Nation, State, Nation- State, Nationalism and Nation- Building; Emergence and growth of territorial state: Globalisation and the Crisis of the Territorial State; Forms of Governance : Unitary and Federal.

Concept of frontiers and boundaries, demarcation of boundaries, classification and functions of boundaries.

UNIT - III

Rise and Demise of German Geopolitics: Global strategic views: Mahan and Sea power; Mackinder and Heartland: Spykman and Rimland: Servasky and Air power.
Geopolitics in the post Cold War World - S.B. Cohen's model of Geo-politics.

UNIT - IV

Emergence of India as regional power: Geo-political significance of Indian and Pacific Ocean; Geo-political issues in India with special reference to water disputes and riparian claims; Gerrymandering and electoral abuse in India: Kashmir problem and Indo-Pak relations; Inter-State water disputes in India (special reference to SYL canal).

Note :

The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire syllabus. All questions carry equal marks.

Recommended Readings:

1. Adhikari, Sudepto (2008). *Political Geography of India*. Sharda Pustak Bhandar, Allahabad.
2. Agnew, J.A. (1987). *Place and Politics*. Allen and Unwin, Boston.
3. Alexander, L.M. (1963). *World Political Patterns*. Ran Mc Nally, Chicago.

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4. Blacksell, Mark (2003). *Political Geography*, London Routledge.
5. Cox, Kevin R. (2008). *The Sage Handbook of Political Geography*, Sage, New Delhi.
6. De Blij, H.J. and Glassner. Martin (1968). *Systematic Political Geography*, John Wiley, New York.
7. Dicken, Peter (2003). *Global Shift*. Sage, New Delhi.
8. Dikshit, R.D. (1996). *Political Geography: A Contemporary Perspective*, Tata McGraw Hill, New Delhi.
9. Dikshit, R.D. (2000). *Political Geography: The Spatiality of Politics*, New Delhi : Tata McGraw Hill
10. Dikshit, R.D. (1999). *Political Geography: A Century of Progress*, Sage, New Delhi.
11. Fisher, Charles A. (1968). *Essays in Political Geography*, Methuen, London.
12. John R. Short (1982). *An Introduction to Political Geography*, Routledge, London.
13. Jones, Martin Rhys Jones and Michael Woods (2003), *An Introduction to Political Geography*, Routledge. London.
14. Khor, Martin (2001). *Rethinking in Globalization*, London : Zed Books.
15. Painter J. (1995). *Politics, Geography and Political Geography*, London : Arnold.
16. Pounds N.J.G. (1972). *Political Geography*. McGraw Hill, New York.
17. Prescott. J.R.V. : *The Geography of Frontiers and Boundaries*, Aldine, Chicago.
18. Sukhwal. B.L. (1968). *Modern Political Geography of India*. Sterling publishers, New Delhi.
19. Taylor. P.J. and Colin Flint (2001). *Political Geography*, New Delhi : Pearson.
20. Taylor, P.J. and Johnston. R.J. (1979). *Geography of Elections* Hammondsworth : Penguin.
21. Taylor, Peter (1985). *Political Geography*. Longman, London.

M.Sc. Geography: Semester II

GENDER ISSUES IN GEOGRAPHY
Course Code-16GEOG204DCEC
Exam Course Code -2068

End Semester Exam : 80 marks
Internal Assessment : 20 marks
Total : 100 marks
Time : 3 hrs.

UNIT- I

Gender Geography: scope, nature and development; Feminism and feminist movement, Development of and theoretical approaches to the study of Gender in geography;

Gender based demographic structure; gender gaps in infant mortality rates; maternal mortality rate; female infanticide; gender and longevity gap- their spatial variations.

UNIT- II

Gender and Work: Historical developments in the sexual division of labour; Participation of women in economic activities: Primary, Secondary and Tertiary Sector;

Multiple roles of women in land, water and forest resource management; Involvement of women in household activities and its significance.

UNIT- III

Gender gaps in social and public life: education, wage differentials in economic activities, health care and nutrition.

Scope for bridging gender gap: empowerment of women through education, economic opportunities, access to reproductive health services; Involvement in decision making processes from local bodies to parliaments; Role of women in development, environmental management and disaster management.

UNIT- IV

Status of females in the society in Developed and Developing countries with special reference to India; Crime against women with special reference to domestic violence; Gender and Neo-liberalization Policies in India.

Note :

The question paper will have five units. Each of the first four units of question paper will contain two questions from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The unit five shall be compulsory and shall contain eight short answer type questions covering entire syllabus. All questions carry equal marks.

Recommended Readings:

1. Boserup, E. (1989). *Women's Role in Economic Development*, Earthscan, London.
2. Dankelman, I. & Davidson, J. (1989). *Women and Environment in the Third World*, Earthscan, London.
3. Deblig, H.J (1991). *Human Geography-Culture, Society and Space*, 5th Ed., John Wiley, New York.
4. Johnston, R.J (ed.) (1996). *The Dictionary of Human Geography*, Blackwell, Oxford,
5. Koblinsky, M. *et al.* (eds.) (1993). *The Health of Women-A Global Perspective*. Westview Press, Boulder.
6. Lee, D. (1988). *Women in Geography-A Comprehensive Bibliography*. Boca Raton, Florida.
7. Lewis, R. (1995). *Race, Femininity and Representation*, Routledge, New York.
8. Momsen, J.H. & Townsend, J. (eds.) (1987). *Geography of Gender in the Third World*, Albany, New York.
9. Reagent, A.C. & Monk J.J. (eds.) (1982). *Women and Spatial Change*, Kendall & Hunt, Dubuque, Iowa.
10. Rhodda, A. (1991). *Women and Environment*, Zed, London.
11. Seager, J. & Olson, A.: *Women in the World- An International Atlas*.
12. Sivant, R.L. (1985), *Women-A World Survey*, World Priorities Washington, D.C.
13. Skjelsback, I. and Smith, D. (2001). *Gender, Peace and Conflict*, Sage, London.
14. Sowell, T. (1994). *Race and Culture –A World View*, Basic Books, New York.
15. UNICEF (1990). *The Lesser child – The Girl in India*, United Nations, Geneva.
16. United Nations (1991). *The World's Women, 1970-1990*, United Nations, New York.
17. United Nations (1995). *World Resources 1994-95. Chapter 3: Women and Sustainable Development*, United Nations. New York.

M.Sc. Geography: Semester-2
VALUE EDUCATION
Course Code-16GEOG201FC
Exam Course Code -2069

End Semester Exam : 80 marks
Internal Assessment : 20 marks
Total : 100 marks
Time : 3 hrs.

Note:

The syllabus of 'Value Education' is same for all departments of the university.
That can be pasted here.

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