

M.Sc Geography Curriculum and scheme w.e.f. July, 2022 - CBCS

B.P.S. Mahila Vishwavidyalaya, Khanpur Kalan
(Sonipat-131305)

Department of Geography

Curriculum and Scheme of Examination of Two year

M.Sc (Geography)

(w.e.f. July, 2022)

Programme Code – 29



(Signature)


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Department of Geography
B.P.S.M.V. Khanpur Kalan (Sonipat)

Programme outcomes (POs):- After the completion of M.Sc (Geography) the students will be able:-

1. To learn and understand the trends and theories of Geographical aspects.
2. To acquire knowledge of different places all over the world in different aspects (socio, economic, environment).
3. The student would be in the position to attend various competitive exams.

Programme Specific Outcomes(PSOs):- on the completion of M. Sc (Geography) students are able to:-

1. Better understanding of the earth, environment conditions, and spatial distribution of various aspects related to physical as well as human resources.
2. Special focus on some recent trends in geographical studies like – Tourism, Remote Sensing & GIS Geography of Haryana.
3. Better opportunity in research areas of different subjects like – Political, History, Sociology, Economics etc.
4. Better placement opportunities in Teaching, Rural & Urban Planning, Natural Hazards, evaluation meteorological, Survey of India.
5. Better research opportunities in different areas in Geography (Physical, Demography, Agriculture, Environment, Water conservation, Health Geography)


Chairperson
Department of Geography
(also Chairperson)

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 | | | | |
|---|------------------|------------------|---|---------------|---------|------------|----|---|----|-----|
| Core Courses (CC): Exclusively for Geography Students | | | | | | | | | | |
| | | I | | L | s | p | Th | IA | T | |
| 1 | 16GEOG10ICC | 1061 | Geomorphology | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 2 | 16GEOG102cc | 1062 | Climatology | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 3 | 16GEOG 103CC | 1063 | Quantitative Methods in Geography | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 4 | 16GEOG 104CC | 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. | 16GEOG 10\ DCEC | 1065 | Biogeography | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 6. | 16GEOG\02 DCEC i | 1066 | Soil Geography | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 7. | 16GEOG\03 DCEC | 1067 | Resource Geography | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 8. | 16GEOG\04 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

Chairperson

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University of Rajasthan, Jaipur (Sonipat)

Department of Geography

Semester- II

| Sr. No. | Course Code | Exam Course Code | Nomenclature of the Course | Contact Hours | | | | Max. Marks | | |
|--|----------------|------------------|--|---------------|---|---|---------|--|----|-----|
| Core Courses (CC): Exclusively for Geography Students | | | | | | | | | | |
| | | | | L | S | P | Credits | Th | IA | T |
| 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 | | 100 |
| 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 |
| | | | | | | | | | | |
| 9. | 16GEOG201 FC | 2069 | value education | 1 | 1 | 0 | 2 | 80 | 20 | 100 |
| Total Credits | | | | | | | 27 | | | 600 |
| | | | | | | | | | | |

Note:
L - Lecture;
Th -Theory

S - Seminar;
IA - Internal Assessment

P - Practical;
T-Total

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Course Structure for M.Sc. Geography (CBCS) w.e.f. July 2020Semester - II

| Sr. No | Course Code | Exam Course Code | Nomenclature of the Course | Contact Hours | | | Credits | Max. Marks | | |
|--------|---------------|------------------|--|---------------|---|---|-----------|--|----|------------|
| | | | | L | S | P | | Th | IA | T |
| 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 | 0 | 6 | 5 | Distribution of Marks: Lab Work Test: 60 Record on Lab Work: 20 Viva-Voce: 20 | | 100 |
| 5 | 16GEOG201DCEC | 2065 | Agricultural Geography | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 6 | 16GEOG202DCEC | 2066 | Soil 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 |
| | | | Total Credits: | | | | 25 | | | 500 |

Note:L – Lecture;
Th – Theory;S – Seminar;
IA – Internal AssessmentP – Practical;
T – Total

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Annexure 1

DEPARTMENT OF GEOGRAPHY

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Course Structure for M.Sc. Geography (CBCS) w.e.f. July 2020

Semester III

| Sr. No | Course Code | Exam Course Code | Nomenclature of the Course | Contact Hours | | | Credits | Max. Marks | | |
|--------|--|------------------|--|---------------|---|---|-----------|--|----|------------|
| | | | | L | S | P | | Th | IA | T |
| 1 | 16GEOG301CC | 3061 | Regional Planning and Development | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 2 | 16GEOG302CC | 3062 | Population Geography | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 3 | 16GEOG303CC | 3063 | Research Methodology | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 4 | 16GEOG304CC | 3064 | Practical Geography: Field Work and Report Writing | 2 | 0 | 6 | 5 | Distribution of Marks: Lab Work Test: 80 Project Report: 50 Viva-Voce: 30 ; IA : 20 | | |
| | Open Elective (to be chosen from the list of electives provided by the University) CBCS Paper | | | 4 | 0 | 0 | 4 | 80 | 20 | 100 |
| 5 | 16GEOG301DCEC | 3065 | Social Geography | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 6 | 16GEOG302DCEC | 3066 | Economic Geography | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 7 | 16GEOG303DCEC | 3067 | Geography of Haryana | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 8 | 16GEOG304DCEC | 3068 | Environment Geography | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| | | | Total Credits: | | | | 25 | | | 500 |
| 9 | 16GEOG301OEC | 3069 | Fundamentals of Geography | 4 | 0 | 0 | 4 | 80 | 20 | 100 |
| | | | Total Credits: | | | | 29 | | | 100 |

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

Fundamentals of Geography.

L - Lecture;
Th - Theory;

S - Seminar;
IA - Internal Assessment

P - Practical;
T - Total

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Khanpur Kalan, Sonapat

DEPARTMENT OF GEOGRAPHY

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Course Structure for M.Sc. Geography (CBCS) w.e.f. July 2020

Semester IV

2-4 p.m. (CBCS) Wk-1: July 2020

| Semester IV | | | | | | | | | | | | |
|--|------------------|----------------------------|---|---|---|--------|------------|----|-----|--|----|-----|
| Course Code | Exam Course Code | Nomenclature of the Course | Contact Hours | | | Credit | Max. Marks | | | | | |
| | | | L | S | P | | Th | IA | T | | | |
| 1 | 16GBOG401CC | 4061 | Urban Geography | | | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 2 | 16GBOG402CC | 4062 | Geography of Water Resource | | | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 3 | 16GEOG403CC | 4063 | Fundamentals of Remote Sensing and GIS | | | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 4 | 16GEOG404CC | 4064 | Practical Geography: Interpretation of Aerial Photographs, Satellite Images and Mapping | | | 2 | 0 | 6 | 5 | Distribution of Marks: Lab Work Test: 60 Record on Lab Work: 20 Viva-Voce: 20 | | 100 |
| Open Elective (to be chosen from the list of electives provided by the University) CBCS Paper | | | 4 | 0 | 0 | 4 | 80 | 20 | 100 | | | |
| 5 | 16GEOG401DCEC | 4065 | Geography of Tourism | | | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 6 | 16GEOG402DCEC | 4066 | Tropical Climatology | | | 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 | Natural Hazards and Disasters | | | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| Total Credits: | | | | | | 25 | | | | | | 500 |

| | | | | | | | | | | |
|---|--------------|------|--------------------|---|---|---|----|----|----|-----|
| 9 | 16GEOG401OEC | 4069 | Geography of India | 4 | 0 | 0 | 4 | 80 | 20 | 100 |
| | | | Total Credits: | | | | 29 | | | 100 |

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

Geography of India.

L - Lecture;

Th - Theory;

S - Seminar;

IA - Internal Assessment

P - Practical;

T - Total

Total Credits: 25+25+29+29=108

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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.


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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.

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.

Objective: Geomorphological knowledge helps in identifying the problems faced by human society, arising due to the interaction of human being with landscape and natural environment. The present course is aimed at providing the knowledge to students about the processes and patterns involved in shaping the features on land surface.

Outcome: Through the study of geomorphology, students shall get to know about formation of the earth's surface features, the role played by the humans in changing the landscape and the significance of landforms in shaping the physical environment in an area

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: Application of Geomorphology in Regional planning, engineering projects. mineral exploration and hydrology. Physical Geomorphology of Punjab plain, Aravalli Region and Thar desert of India.

Recommended Readings :

1. Bloom, A.L. (1992). *Geomorphology*. 2nd Edition, Prentice Hall of India, New Delhi.
2. Chorley. R.J.(1972), *Spatial Analysis in Geomorphology*. Methuen, London.
3. Cooke. R.U. and Doornik, J.C. (1974), *Geomorphology*
Environmental Management and Conservation. Clarendon Press. Oxford.
4. Dayal. P. (1990). *A Text Book of Geomorphology*. Shukla Book Depot. Patna.

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5. Oury, G.H. (1959). *The Face of the Earth*. Penguin Harmondsworth.
6. Fairbridge. R.W. (1968). *Encyclopedia of Geomorphology*. Reinholdts. New York.
7. Garner. H.F.(197-1). *The Origin of the 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. Oilier. 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). *Landscapes of the Earth*. John Wiley, New York.
17. Sparks, B.W. (1960). *Geomorphology*. Longman, London.
18. Stoddart, D.R.(ed.) (1996). *Processes and Form in Geomorphology*, Routledge, New York.
19. Strahler, A .N. (1988). *Earth Science*. McGraw and Row Publishers, N.D.
20. Strahler. A.H. and Strahler. A.N. *Contemporary 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. Wand Morgan. R. (1965). *An Outline of Geomorphology*, Orient Longmans, Calcutta.


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M.Sc. Geography: Semester-I
CLIMATOLOGY
Course Code-16GEOGI02CC
Exam Course Code-1062

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

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.

Objective: It is an introductory course of climatology which is aimed at providing knowledge about the elements and processes of climates, different climatic types and climate change. Climate is one of the basic elements of physical environment which is a core area of interest for the students of geography.

Outcome: This course on climatology shall sharpen the understanding of students about different climatic systems found in the world. It shall develop scientific understanding about climates and their characteristics.

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, tornados; **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.

Recommended Readings:

1. Barry, R.G. and Chorely, 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 Driscell. D.M. (1982). *Survey of Climatology*, Charles Merrill.


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8. India Met. Deptt. (1968). *Climatological Tables of Observatories in India*, Govt. of India.
9. Lal. D.S. (2011). *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.
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.


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M.Sc. Geography: Semester-I
QUANTITATIVE TECHNIQUES IN GEOGRAPHY
Course Code-16GEOGI03CC
Exam Course Code-1063

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

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.

Objective: The objective of the course is to introduce the students to statistical tools for summarizing and analyzing quantitative information and data. The course includes various tools and techniques used in the analysis of geographical data.

Outcome: The course shall equip the students with statistical tools for summering, analyzing and finding spatial pattern from the geographical and other time series data.

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:
Centographic 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.


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Recommended Readings :

1. Ashis Sarkar (1983). *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. (1980), *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 Cuthbert 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. 1 and II, Edward Arnold, London.
12. Peter, J. Taylor (1977). *Quantitative Methods in Geography*, Houghton Mifflin Company, Boston.
13. Smith, David M. (1975). *Patterns in Human Geography*, Penguin, Harmondsworth.
14. Unwin, David (1981). *Introduction to Spatial Analysis*, Methuen, London.
15. Yeates, Maurice (1974), *An Introduction to Quantitative Analysis in Human Geography*, McGraw Hill, New York.


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M.Sc. Geography: Semester-I
PRACTICALS INTERPRETATION OF TOPOGRAPHICAL SHEETS
AND COMPUTER AIDED STATISTICAL DIAGRAMS AND GRAPHS
Course Code-16GEOGI04CC
Exam Course Code-1064

Max. Marks : 100

Time : 4 Hours

Distribution of Marks : Lab work test : 60

Record on labwork : 20

Viva Voce : 20

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.

Objectives: It is aimed to provide training to students in latest techniques in the field of cartography. It introduces the students to the tools used in thematic mapping and representation of quantitative data to facilitate spatial analysis and synthesis. It is a major technical course for the students to improve their abilities of using different kind of data and related statistical diagrams and graphs. The course aims to guide students to grasp the use of computer in Geography.

Outcome: After completion of the course the students will have a better acquaintance about the representation of statistical data in the form of diagrams and maps. They will develop the skill of map making and interpretation of geographical reality.

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.


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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 Geomorphology*. Kalyani Publishers, New Delhi.
6. Yadav. H.L.. (2000). *Prayogik Bhoogol Ke Aadhar* (Fundamentals of Practical Geography), Radha Publication. New Delhi.



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M.Sc. Geography: Semester-I
BIOGEOGRAPHY
Course Code-16GEOGI01DCEC
Exam Course Code-1065

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

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.

Course Outcome:- Biogeography is an interesting and developing subject and is particularly important in providing a basis for understanding the critical relationships between humans and the environment. In almost any area of natural sciences there are general components, underlying themes and specialist aspects.

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.

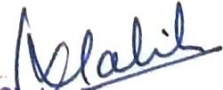
Biomes- Meaning and types.

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.


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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.O. (1993). Biogeography: An Ecological and Evolutionary Approach (Fifth Edition). Blackwell.
4. Gaur. R. (1987). Environment and Ecology of India: 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. Lillies. J. (1974). Introduction to Zoogeography, Mcmillan. 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. Lillies, 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 and Boyd, U.S.A.


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M.Sc. Geography: Semester-I
SOIL GEOGRAPHY
Course Code-16GEOGI02DCEC
Exam Course Code-1066

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

Note: The question paper will have five units. Each of the first four units of question paper will contain no 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.

Objective: The main aim of this course is to appraise the students about soil formation processes and geographical distribution of soils in the world. The course shall cover the fundamental processes, development, classification and mapping of this resource.

Outcome: Study of Soil Geography shall make the students understand the significance of soil resources in the development of the society. It should also make the students to internalize the relationship between soils and other natural resources

.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

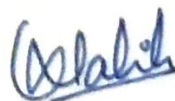
Soil conservation in India; Conservation methods to improve the physical qualities of soils; Soil erosion, and degradation: Soil Survey - methods and mechanism.


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

Suggested Readings

1. Backman, H.O and Brady, N.C. (1969). *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. James S. Gardiner (1977). *Physical Geography*, Harper's College Press, New York.
13. Mc. Bride. M.B.: *Environmental Chemistry of Soils*. Oxford University Press, New York 1999.
14. McBride. M.B. (1999). *Environmental Chemistry of Soils*, Oxford University Press, New York.
15. McKnight. Tom L. (1987), *Physical Geography: A Landscape Appreciation* (2nd Ed.), Prentice Hall, inc., Englewood Cliffs, N.J.
16. Pitty, A.F. (1978), *Geography and Soil Properties*. University Press, London.
17. Raychoudhuri. S.P. (1958). *Soils of India*. ICAR. New Delhi.
18. Sehgal. J. (2000). *Pedology-Concepts and Applications*. Kalyani Publications, New Delhi.
19. 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

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.

Objective: The objective is to create awareness among the students about resource availability, accessibility, distribution and its use or misuse. It also enlightened them to theoretical evaluation and conservation and management of resources for sustainable development.

Outcome: Students will become sensitized to resource their types, availability and use or misuse, its impact on environment and will learn conservation methods and techniques. They shall become aware about the ongoing international efforts to mitigate environment problems and legal provisions.

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.


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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.
6. Gautam. Alka (2013). *Geography of Resources: Exploitation, Conservation and Management*. Sharda Pustak Bhavan, Allahabad.
7. Guba. J.L. and Chattroj. P.R. (1994). *Ecological Geography-A Study of Resources*, The World Press Pvt. Ltd., Calcutta
8. Kates. R.W. & Bullon. I (eds) (1986). *Geography, Resources and Environment*, Vols. I & II University of Chicago Press. Chicago.
9. M. Laren. D.J. and Skinner. B.J.(eds.) (1986). *Resources and World Development*, John Wiley & Sons. New York.
10. Matti no. R.L. (1969). *Resource Management*. Mc Graw Hill Book Co., London. I O. Negi, B.S. (2000). *Geography of Resources*, Kedar Nath and Ram Nath, Meerut.
11. Owen. Oliver. S. (1971). *Natural Resource Conservation : A Ecological Approach*. McMillan 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.



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M.Sc. Geography: Semester-I
RURAL GEOGRAPHY
Course Code-16GEOGI04DCEC
Exam Course Code-1068

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

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.

Objective: The objective of the paper is to give to the students the basic ideas about the rural settlements, environment, social issues and development plans in the rural areas. It also throws light on the social and economic deprivation and inequalities in the rural areas.

Outcome: The present paper shall enhance the knowledge of students about the pattern, type and functional systems of rural settlements.

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).


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Recommended Readings:

1. Alam. S.M. *et al.* (1982). *Settlement System of India*. Oxford and IBH Publication Co., New Delhi.
2. Armendera (1998). *Pol'eri, 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. Manda!. R.B. (1988). *Systems of Rural Settlements in Developing Countries*, Concept Publication. New Delhi
11. Manda!. R.B. (2011). *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 Shanna.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. Singh. R.Y. (2005). *Adhiwas Bhugol*. (in Hindi) Rawat Publication. New Delhi.
23. Sinha. R.N.P.. *Geography and Rural Development*; Manohar Publishers and Distributors, New Delhi.
24. Sinha. S.P. & Singh. S. (2007). *Strategies for Sustainable Rural Development*, Deep and Deep Publishers. New Delhi.


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

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

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.

Objective: The objective of this course is to introduce the students to the history, philosophy and methodology of geography. The postgraduate students of geography must have an idea about the course of development of the discipline in terms of changes in its philosophy and methodological innovations.

Outcome: The course would appraise the students about the development of geography as a scientific discipline. It would help them in assessing the positive aspects and shortcomings of the discipline.

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 Varenus, 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.


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Unit-IV

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

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.
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. Harvey. David (1990), *The Condition of Postmodernity*. Blackwell, London.
11. Harvey. Millan 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. Hubbard. Phil *et al.* (2002). *Thinking Geographical (re) Space Theoretical 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). *Post/modern Geographies*. Indian Ed. Rawat Publications, New Delhi.
23. Unwin. Tim (1992). *The Place of Geography*. Pearson Education Limited, Essex.
24. Tim. Cresswell (2013). *Geographic Thought : A Critical Introduction*, Wiley- Blackwell. New York.


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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

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.

Objective: India is a country with diversity in landscape, vegetation, soils, drainage network, economy, population characteristics and culture. It is rich in resources and has got many minerals and power resources, which are the main assets of the country and are also exported. Therefore it becomes immense important to make the students know about their country.

Outcome: After studying Geography of India, students will become aware about the country's beautiful and diverse landscapes. They will acquire knowledge about the economy and valuable resources. This would also sharpen their understanding about the unity in diversity in India.

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.


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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 Opportunities*, Oxford University Press, New Delhi.
4. Dubey. R. N. (1974). *Economic Geography of India*, Kitab Mahal, Allahabad.
5. Gautam. Alka (2014). *Adm need Geography of India*, 4th Ed., Sharda Pustak Bhawan, Allahabad.
6. Hussain. Majid (2015). *Geography of India*. Mc Graw Hill Education.
7. Joshi. H. I. (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. Iqbal (1992). *Indian Economy: The Regional Dimension* Spectrum 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, Bangkok.
12. Robinson. Francis (1989). *The Cambridge Encyclopaedia of India, Pakistan, Bangladesh, Sri Lanka, Nepal, Bhutan & Maldives*. Cambridge University Press, London.
13. Sharma. T.C. and Coutinho. O. (1994). *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 Learmont (1967). *India & Pakistan* Methuen, London.
16. Tirtha. R. and Gopal Krishan (1990). *India & Pakistan* 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*, 3rd Ed., Prayag Pustak Bhawan, Allahabad.


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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

Note: The question will have five units. Each or the first four units of question paper will contain two questions from each unit or 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 remarks.

Objectives: The objective is to introduce the students the basic concepts of oceanography such as hydrologic cycle, water balance and movement of oceanic water, salinity distribution etc.

Outcome: It will acquaint the students with the basic concepts oceanography.

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


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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*, Wadsworth Pub. Co., London.
5. Garrison. T. (2001), *Oceanography - An Introduction to the Marine Science*. Brooks/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. Kerhshaw. 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. Shepard. 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. Ummernkutty. 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.



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M.Sc. Geography: Semester-2
PRACTIAL GEOGRAPHY: MORPHOMETRIC AND HYPSONETRIC ANALYSIS
Course Code-16GEOG204CC
Exam Course Code-2064

Max. Marks : 100

Time : 4 Hours

Distribution of Marks : Lab work test : 60

Record on lab work : 20

Viva Voce : 20

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.

Objective: The objective of this course is to make the students learn the morphometric tools by applying them in the analysis of relief, drainage pattern and slope.

Outcome: The course shall provide the students an opportunity to practice the use of tools and methods applied in morphometric analysis.

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

Recommended Readings:

1. Oury. G.H. (1966). *Essays in Geomorphology*. Heinmann. London.
2. Misra. R.P. and Ramesh ...\.. (! 999). *Fullldlllllellals 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.. (20001. *Prayogik Bhoogol Ke Aadhar (Fundamentals of Practical Geography)*, Radha Publication. Ne11 Delhi.


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M.Sc. Geography: Semester-2
AGRICULTURE GEOGRAPHY
Course Code-16GEOG201DCEC
Exam Course Code-2065

End Semester Exam : 80 marks

Internal Assessment : 20 marks

Total : 100 marks

Time : 3 hrs

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 equal marks.

Objective: The objective of this course is to acquaint the students with the spatial organization of agriculture and processes determining the agricultural pattern and processes. The students will develop an in-depth knowledge about the dynamics of land use, cropping pattern and the factors involved in change of agricultural landscape.

Outcome: The students shall get to know about the spatial organization of agricultural activities in world and India. Their knowledge about the origin, location, distribution of the agricultural activities shall be enriched. They would also get the knowledge about the modern agriculture, its dynamics and impact of climate change and economic liberalization on agricultural pattern and processes.

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: Whiteley's classification - shifting cultivation, plantation farming, Mediterranean agriculture, Commercial grain farming.

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



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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.

Recommended Readings

1. Andreae. B. (1981). *Farming Development and Scope: A World Agricultural Geography*, Water de Grytar, Newyork.
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 Changillg World Food Prospects - The Nineties and Beyond*, World Watch Institute, Washington D.C.
5. Dyson. T. (1996). *Population and Food - Global Trends and Future 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 Geogrophy*. Longman, Ontario.
10. 10. Grigg. D.B. (197--1-). *The Agricultural Systems of the World*, Cambridge University Press, New York.
11. Hartshorn. T.N. and Alcvander. 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 Han, Iti. Y.S. (2013). *Agricultural Geography*, Vasundhra Prakashan, Gorakhpur.
15. Morgan W.B. and Norlon. IU (1971). *Agricultural Geography*, Matlrnen, London.
16. Morgan. W.B. (1978). *Agriculture ill the Third World - A Spatial Ana(psis*. Westview Press, Boulder.
17. Sauer. C.O. (1969). *Agricultural Origins and Dispersals*. M.L.T. Press. Mass, U.S.A.
18. Shafi. M. (2006). *Agricultural Geography*, Pearson Education, New Delhi.
19. Singh. J. and Dhillon. S.S. (198--1-). *Agricultural Geography*. Tata McGraw Hill Publishing Co. Ltd, New Delhi.
20. Symons. Leslie (1967). *Agricultural Geography*. G. Bell and Sons, London.
21. Tarrant. J.R. (1974). *Agricultural Geography*. Wiley, New York.



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

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

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.

Objectives: The objective is to enlighten the students about the basics of urban geography, world urbanization pattern, morphology and land use of cities, social- economic, functional and spatial dimensions of urban centers and their various theoretical conjectures.

Outcome: The students shall be acquainted with various urban concepts, urban economic base, urban functions, urban core- periphery interaction and various theories and models.

UNIT-I

1. Urban Geography: nature, scope, approaches and concepts.
2. Origin and evolution of towns and factors of urban growth.
3. The global context of urbanization and cycle of urbanization.

UNIT-II

4. Economic base of cities: concept and employment ratio.
5. Functional classification of cities: concepts and scheme of classification.
6. Rural Urban Fringe: structural characteristics and its development.
7. City and region: concepts of influence and dominance, methods of delimitation of area of influence and area of dominance.

UNIT-III

8. Urban morphology and land use structure: city core, commercial, industrial and residential areas.
9. Models of city structure: concentric zone model by E.W. Burgess, sector model by Homer Hoyt, multiple nuclei model by Harris and Ullman and models of south Asian cities.


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UNIT-IV

10. Central place theory of Christaller and Losch.
11. Rank size rule and Law of primate city.
12. Social area analysis.

Suggested Readings:

1. Mayer H.M. and Kohn, C.F. (1968), Readings in Urt. The University of Chicago Press, Chicago.
2. Berry, J.E. & et al. (Eds.), 1970, Geography Perspective on Urban System, Prentice Hall, New Jersey.
3. Cater, Herald (1972), The study of Urban Geography, Edward Arnold, London.
4. Johnson, J (1974), Suburban Growth, John Wiley and sons, London.
5. Kaplan, Wheeler and Holloway(2007) Urban geography, John Wiley, USA
6. Clark, D (1982), Urban Geography, Croom Halm, London and Cambridge.
7. Northern, R.M.(1979) Urban Geography, John Wiley, Toronto.
8. Michanel Pacione (2004) Urban Geography: a global Perspective, Routledge, USA.
9. Ramachandra,R(1992) Urbanization and Urban System in India, Oxford, London.
10. Raymond and Murphy(1960) The American cities: An urban geography, McGraw hills, NewYork.
11. Sinha, S.P. (1984), Processes and Fattern of Urban Development in India: A.C. study of Haryana, The associated Publishers, Ambala Caltt.


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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

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.

Objectives: The objective is to acquaint the students with conceptual framework of geo-political issues and assessment of Indian position in the emerging geo-political situation.

Outcome: The students shall be groomed to grasp the conceptual framework of geo-political issues and role and status India in contemporary geo-political situation.

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 Rim land: Servasky and Air power.

Geopolitics in the post Cold War World - S.B. Cohen's model of Geo-politics.

UNIT - IV



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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).

Recommended Readings:

1. Adhikari. Sudepto I 20081. *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*. Rand McNally, Chicago.
4. Blackwell, 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. (1988). *Essays in Political Geography*, Methuen, London.
12. John R. Short (1982). *An Introduction to Political Geography*, Routledge, London.
13. Jones, Martin Rhys Jones and Ivkhael Woods (2003). *An Introduction to Political Geography*, Routledge, London.
14. Khor, Martin (2001). *Rethinking in Globalization*, London: Zed Books.
15. Painter, I. (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. Sukhwil, B.L. (1988). *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.



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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

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.

Objective: Objective of the course is to introduce the students to the concept of gender perspective in geography. It shall acquaint the students with feminism, gender issues and its applications in geographic studies.

Outcome: After the study of this course students shall become aware about gender perspective in geography.

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



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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.

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. Koblinksky, 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.L. & Toyns, J. (eds.) (1987). Geography of Gender in the Third World, Albany. New York.
9. Reagent, A.C. & Wilson, L. (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.



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M.Sc Geography, 2020-21 onwards
SCHEME OF EXAMINATION AND COURSE STRUCTURE
Based on Choice Based Credit System (CBCS)

M.Sc. Geography shall be of two years duration Program spread over four semesters. Each Semester shall consist of four Core Course of 5 credits each and a group of four Discipline Centric Elective Course (DCEC) of 5 credits each. Out of which the students have to select any one course/paper. The Discipline Center Elective Course/paper shall be provided by the department according to its administrative and academic convenience. Open Elective Course (OEC), as decided by each Department of the university for the students of other Departments have to opt one course each out of a pool of OECs as decided by the University, during 3rd and 4th semester and shall be of 4 credits each.

The medium of instructions shall be both English and Hindi.

The duration of examination for theory and practical course/paper shall be of three and four hours, respectively. Practical examination shall be conducted by Board of Examiners Consisting of either both the external examiners or the internal and external examiner from amongst the teachers of the Department, preferably the teacher(s) who are engaged in the teaching of Practical Course/Paper and the external examiner out of the 'panel of examiners' recommended by the P.G. Board of Studies and Research in Geography.

Each course will be of 100 marks. The marks of each course shall be in the ratio of 80:20, i.e. 80 marks for Theory Paper and 20 marks for Internal Assessment irrespective of the credits assigned to it. The Internal Assessment in each course/paper shall be based on two assignments of 05 marks each and one seminar of 10 marks presented by each candidate and participation of others.

However, the distribution of the weight age of marks in the 'internal assessment' and the minimum percentage of marks to pass the 'end semester examination' in each semester shall be as per the laid down norms/relevant ordinance of the University adopted from time to time.


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DEFINITIONS OF COURSES

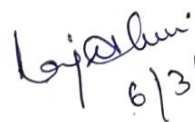
1. CORE COURSE(CC)
 - Core Course (CC): Compulsory Course for the students of Geography.
2. DISCIPLINE CENTRIC ELECTIVE COURSES (DCEC):
 - Discipline Centric Elective Courses (DCEC): Optional Courses within the Department.
3. OPEN ELECTIVE COURSES(OEC):
 - Open Elective Courses (OEC): Optional Courses which are to be opted out of a pool of Courses from all departments as decided by the University.



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DEPARTMENT OF GEOGRAPHY

B.P.S.M.V. Khanpur Kalan

Course Structure for M.Sc. Geography (CBCS) w.e.f. July 2020
Semester III

| Sr. No | Course Code | Exam Course Code | Nomenclature of the Course | Contact Hours | | | Credits | Max. Marks | | |
|--|---------------|------------------|--|---------------|---|---|---------|------------|----|-----|
| | | | | L | S | P | | Th | IA | T |
| 1 | 16GEOG301CC | 3061 | Regional Planning and Development | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 2 | 16GEOG302CC | 3062 | Population Geography | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 3 | 16GEOG303CC | 3063 | Research Methodology | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 4 | 16GEOG304CC | 3064 | Practical Geography: Field Work and Report Writing | 2 | 0 | 6 | 5 | 80 | 20 | 100 |
| Open Elective (to be chosen from the list of electives provided by the University) CBCS Paper | | | | 4 | 0 | 0 | 4 | 80 | 20 | 100 |
| 5 | 16GEOG301DCEC | 3065 | Social Geography | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 6 | 16GEOG302DCEC | 3066 | Economic Geography | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 7 | 16GEOG303DCEC | 3067 | Geography of Haryana | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| 8 | 16GEOG304DCEC | 3068 | Environment Geography | 4 | 1 | 0 | 5 | 80 | 20 | 100 |
| Total Credits: | | | | | | | 25 | | | 500 |
| 9 | 16GEOG301OEC | 3069 | Fundamentals of Geography | 4 | 0 | 0 | 4 | 80 | 20 | 100 |
| Total Credits: | | | | | | | 29 | | | 100 |

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

L – Lecture;
Th – Theory;

S – Seminar;
IA – Internal Assessment

P – Practical;
T – Total

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Haryana

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16GEOG301CC
Regional Planning and Development
Exam course Code - 3061

End Sem. Max. Marks: 80
Time: 3 Hrs.

Note: There will be nine questions in all. Question No. 1 is compulsory and consisting 8 subparts (short notes not exceeding 50 words each) covering entire syllabus. There will be 8 long questions, two from each unit. The candidate shall attempt **FOUR** long questions, selecting one from each unit. All questions carry 16 marks each.

Objective: The objective of the course is to develop an understanding of the processes, pattern and practice of regional development in India. This will expose students to development theories and strategies and planning concepts and broaden their perspective regarding regional disparities in India and the need of regional planning to overcome it.

Outcome: Students shall develop understanding about regional development processes, models adopted for development, regional disparities, challenges and strategies to overcome the disparities.

UNIT-I

1. Concept of Regional Development:, Regional disparities, Balanced Regional development
2. Region and its typology,
3. Basis of regionalization in India and their characteristics.

UNIT-II


4. Theories of Regional Development:
 - (i) Trickle Down Theory
 - (ii) Growth Pole Theory
 - (iii) Cumulative causation Model
 - (iv) Core-Periphery Theory


UNIT-III

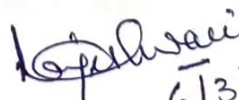
5. Development and Regional Disparities in India since Independence
 - (i) Disparities in Agricultural Development
 - (ii) Disparities in Industrial Development.
6. Disparities in Human Resource Development in terms of poverty, education and health

UNIT-IV

7. India through Planned Era with special reference to
 - (i) Tribal area development plan
 - (ii) Hill Area development plan
 - (iii) Desert, drought prone and backward area development plan
8. Niti Ayog : Aims and objectives
9. Urban Planning in India with special reference to National Capital Region


Dr. Anil Kumar
Faculty of Social Sciences
B.P.S. Mahila Vishwavidyalaya
Jhampur Kalan, Sonapat
Haryana


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Suggested Readings:

1. Chandna, R.C. (2000): Regional Planning : A Comprehensive Text. Kalyani Publishers., New Delhi.
2. Chaudhuri, J.R. (2001) : An Introduction to Development and Regional Planning with special reference to India. Orient Longman, Hyderabad.
3. Friedmann, J. and Alonso, W. (ed.) (1973) : Regional Development and Planning. The MIT Press, Mass.
4. Hettne, B.; Inotai, A. and Sunkel, O.(eds.) (1999-2000): Studies in the New Regionalism. Vol. I-V. Macmillan Press, London.
5. Kuklinski, A.R. (1972): Growth Poles and Growth Centres in Regional Planning. Mouton and Co., Paris.
6. Kuklinski, A.R. (ed.) (1975): Regional Development and Planning : International Perspective, Sijthoff-Leydor.
7. Leys, C. (1996): The Rise and Fall of Development Theory. Indian University Press, Bloomington, and James Curry, Oxford.
8. Mahapatra, A.C. and Pathak, C.R. (eds.) (2003): Economic liberalization and Regional Disparities in India. Special Focus on the North Eastern Region. Star Publishing House, Shillong.
9. Mahesh Chand and V. K. Puri ; Regional Planning in India, Allied Publishers, New Delhi, 1983.
10. Misra, R.P. (ed.) (1992) : Regional Planning: Concepts, Techniques, Policies and Case Studies. 2nd edition. Concept Publishing Company., New Delhi.
11. Misra, R.P. and Natraj, V.K. (1978): Regional Planning and National Development. Vikas, New Delhi.
12. Planning Commission of India: Eighth Five Year Plan (1992-97) Vol. I, Govt. of India, New Delhi.
13. Sundaram K V (1986) : Urban and Regional Planning in India, Vikas Publishing House, 1986, New Delhi
14. Raza Moonis (ed) (1988) Regional Development Vol. 10, Contribution to Indian Geography Heritage Publishers, New Delhi.
15. Kundu and Moonis Raza (1988) : Indian Economy: The Regional Dimension, CSRD/SSS, JNU. New Delhi.
16. Patnaik, C S (1981), Economics of Regional Development and Planning in Third World Countries, Associate Publishing House, New Delhi.

Note:

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16GEOG302CC
Population Geography
Exam course Code - 3062

End Sem. Max. Marks: 80

Time: 3 Hrs.

Note:

There will be nine questions in all. Question No. 1 is compulsory and consisting 8 subparts (short notes not exceeding 50 words each) covering entire syllabus. There will be 8 long questions, two from each unit. The candidate shall attempt FOUR long questions, selecting one from each unit. All questions carry 16 marks each.

Objective:

The objective of the course is to acquaint the students with the sources of population data, dynamics of population and their determinants and assessment of the impact of policy interventions

Outcome:

The students shall learn about the population data sources and various theories models and measures of population dynamics and international community' efforts to improve quality of human resource.

UNIT-I

1. Nature and scope of population geography.
2. Sources of population data, quality and reliability of data, problems of mapping population data.

UNIT-II

3. Concepts, determinants and world patterns of the following attributes of population:
 - (i) Distribution and density
 - (ii) Vital rates: birth and death rates
 - (iii) Migration (including laws of migration)
 - (iv) Growth
 - (v) Age and Sex Composition
 - (vi) Occupation
 - (vii) Literacy
4. Quality of human resource: human development index and its components.

UNIT-II

5. Limits to growth: Concepts of over population, under population and optimum population
6. Demographic Transition Model
7. Population Resource Regions
8. Theories of population: Malthus, Ricardo and Marx

UNIT-IV

9. Population problems and Population policy of India
10. Comparative study of population problems and policies of developed and less developed countries. Case study of U.S.A., Japan, China and Brazil

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Suggested Readings:

1. Beaujeu, Garnier, J. (1966) Geography of Population, Longman, London.
2. Brooks, S. (1977) : The World Population Today (Ethnodemographic Process), USSR Academy of Sciences, Moscow.
3. Cassen, Robert & Bates, Lisa M. (1994) : Population Policy : A New Consensus Overseas Development Council, Washington, D.C.
4. Chandna, R. C. (1997) : Jansankhya Bhugol, Kalyani Publishers, New Delhi.
5. Chandna, R. C. (1998) : Population, Publishers, New Delhi.
6. Chandna, R. C. (1998) : Environmental awareness, Publishers, New Delhi.
7. Chandna, R. C. (1998) : a Geography of Population : Concepts, Determinants and Patterns, Publishers, New Delhi.
8. Clarks, John, I. (1971) : Population Geography and the Developing Countries, Pergamon Press, New York.
9. Demko, G. J. and others (Eds.) (1971) : Population Geography, Reader, McGraw-Hill Books Co., New York
10. Hassan, I. (2010) Population Geography,
11. Jones, Huw, R. (1981) : A Population Geography, Harper and Row Publishers, London.
12. Mahajan, N. (2014) Population Geography, R.K. publishers, Delhi
13. Newbold, K Bruce (2016) Population geography: Tools and Issues,
14. Petrov, V. (1985) : India: Spotlight of Population, Progress Publishers, Moscow.
15. Qazi, S.A. (2010). Population Geography, APH publishers.
16. Trewartha, G. T. (1972) : The Less Developed Realm-A Geography of its Population, John Wiley & Sons, Inc., New York.
17. Trewartha, G. T. (1978) : The More Developed Realm-A Geography of its Population Pergamon Press, New York.
18. Woods, R. (1979) : Population Analysis in Geography, Longman, London.

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Max. Marks: 80

Time: 3 hours

Note:

There will be nine questions in all. Question No. 1 is compulsory and consisting 8 subparts (short notes not exceeding 50 words each) covering entire syllabus. There will be 8 long questions, two from each unit. The candidate shall attempt FOUR long questions, selecting one from each unit. All questions carry 16 marks each.

Objectives:

The objective of the course to make students develop an understanding of the concept of Research in geography, Research Problems, Research Design, Data Collection and Sampling Design.

Outcome:

The course shall equip the students with the understanding of different aspects of research. The students will learn about the significance of Research in Geography.

Unit-I

1. Introduction to Research in Geography: meaning, objectives, types and significance of research; Characteristics of Research.
2. Significance of Field work in Geography.

Unit-II


3. Defining Research Problems: Meaning of Research problem; Selection of Research problem; Need for defining a research problem; Techniques involved in defining a problem; Limitations of the Research problem
4. Formulation of Hypothesis: Definition, Characteristics and types of Hypothesis

Unit-III

5. Research Design: meaning, need and features of Research design; Important concepts related to Research design; Types of Research design- exploratory, descriptive and experimental
6. Sampling and Sample Design: Census and sample methods; advantages and limitations of sampling; characteristics of a good sample; sampling techniques and methods- Random sampling methods and non-random sampling methods; merits and limitations of sampling.

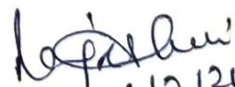
Unit-IV

7. Data sources and Data Collection: types of data- primary and secondary; Sources of data, methods of collecting primary data- observation method, interview method, Questionnaire and Schedule; difference between questionnaire and Schedule


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Suggested Readings:

1. Har Prasad (1992): Research Methods and Techniques in Geography, Rawat Publishers, Jaipur.
2. Mishra, H.N. and Singh V.P. (ed.) (1998): Research Methodology: Social, Spatial and Policy Dimensions, Rawat Publishers, Jaipur.
3. Goode and Hat, Research Methodology in Social Sciences, Oxford University Press, New Delhi.
4. Johnson, R.J. (1978): Multivariate statistics in Geography, Longman, London.
5. Black James A and D.J. champion (1976): Methods and Issues in social Research, New York, John Wiley and Sons, Inc.
6. Kothari, C.R. (2004). Research Methodology: Methods and Techniques, 2nd Ed., New Age International Publishers, New Delhi.
7. Kumar, R. (2005): Research Methodology: Step by Step Guide for Beginners, 2nd pPearson, Australia, p-7.
8. Mishra, H.N. and Singh, V.P.(2002), Research Methodology in Geography: Social, Spatial and Policy Dimensions, Rawat Publication, Jaipur.
9. Dey, I. (1993), Quantitative Data Analysis, Routledge, London.
10. Somekh, B. and Cathy, L. (2005). Research Methods in the Social Sciences, Vistaar Publications, New Delhi.

Satish

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16GEOG304CC
Practical Geography:
Field Work and Report Writing
Exam course Code - 3064

End sem. Max. Marks: 80

Distribution of Marks:

Project Report: 50

Viva-Voce: 30

Note:

The students will have to write a project report based on field survey which shall be duly supervised by the teacher.

Objective:

The objective of the course is to teach the techniques and tools used in the analysis of socio-economic data by applying them on the data collected through field survey and drawing inferences and interpretations.

Outcome:

The writing of the project report shall train the students in analysis and interpretation of socio-economic data obtained from the field.

Scheme of Evaluation of Project Report:

1. Report writing: 50 marks
2. Viva voce on report: 30 marks

Note: The paper is compulsory and students have to visit to collect socio-economic data, financial assistance to students and teachers may be provided by the university.

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Note: There will be nine questions in all. Question No. 1 is compulsory and consisting 8 subparts (short notes not exceeding 50 words each) covering entire syllabus. There will be 8 long questions, two from each unit. The candidate shall attempt FOUR long questions, selecting one from each unit. All questions carry 16 marks each.

Objective: The objective of the course to make students understand the society and social structure in spatial context. It shall appraise the students about social space and spatial distribution of tribes, caste territories, religions and linguistic regions in India.

Outcome: This course shall equip the students with the understanding of spatial dimensions of the societal characteristics and organizations in India. It will make them understand the processes and patterns of social change and transformation in spatial context.

UNIT-I

1. Nature and scope of Social Geography, its development and place among social sciences.
2. Sources and problems of data for study in Social Geography of India.
3. Social differentiation and region formation, social evolution, social space, social and spatial justice.

UNIT-II

4. Tribes: Social formations, rural-urban and spatial distribution and impacts of development.
5. Castes: Origin, caste and morphology of settlements, caste and clan territories and distribution of scheduled castes.

UNIT-III

6. Languages: Classification, historical processes of diffusion and geographical distribution, Linguistic regions
7. Religions: Origin, historical background and spatial distribution of religious groups, minority and segregation in space, communalism.

UNIT-IV

8. Social change and transformation in India, Modernization and Sanskritization
9. Rural-urban interaction and social change.
10. Social wellbeing: Overview of the concept.

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Suggested Readings:

1. Ahmad, Aijazuddin, Social Geography, Rawat Publication, New Delhi, 1999.
2. Dreze Jean, Amartya Sen, Economic Development and Social opportunity, Oxford University Press, New Delhi, 1996.
3. Dubey, S.C.: Indian Society, National Book Trust, New Delhi, 1991.
4. Schwartzberg Joseph; An Historical Atlas of South Asia, University of Chicago Press, Chicago, 1978.
5. Sen, Amartya & Drze Jean, Indian Development: Selected Regional Perspectives, Oxford University Press, 1996.
6. Smith, David: Geography: A Welfare Approach, Edward Arnold, London, 1977.
7. Sopher, David.: An Exploration of India, Cornell University Press, 1980.
8. Subba Roa. Personality of India; Pre and Proto Historic foundation of India and Pakistan. M.S. University Baroda, Vadodara, 1958.

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Note:

There will be nine questions in all. Question No. 1 is compulsory and consisting 8 subparts (short notes not exceeding 50 words each) covering entire syllabus. There will be 8 long questions, two from each unit. The candidate shall attempt FOUR long questions, selecting one from each unit. All questions carry 16 marks each.

Objectives: The economy of the world has been changing fast in recent times. This has also led to drastic change in the spatial structure of economies world over. Therefore the objective of this course is to integrate the various factors of economic development to acquaint the students about dynamic aspects of economic geography.

Outcome: After completion of the course the students will be able to understand the spatial organization of economies in the world in relation to human activities, location theories of various activities, transport functions, trends of trade and processes of globalization.

UNIT-I

1. Definition, nature, scope, importance, recent trends and approaches in economic geography.
2. Relationship of economic geography with other social sciences.
3. Economic activities and their classification.

UNIT-II

4. Network structure and economic activities, impact of transport on economic activities, spatial variation in production and transport cost, Edward Ullman's spatial interaction model.
5. Location theories of Weber, Losch, Christaller and Krugman.

UNIT-III

6. World Economies: bases of classification, patterns and characteristics of developed and developing economies of the world.
7. Economic development: meaning, evolution, goals, measures, patterns, problems and theories.

UNIT-IV

8. Globalization and recent trends in pattern of international trade.
9. Emergence of a new global economy-transnational integration and its spatial outcomes.
10. Major regional trade blocks of the world, free trade initiatives (GATT, UNCTAD, WTO).

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Suggested Readings:

1. Gautam, A. 2010. Advanced Economic Geography. Sharda Pustak Bhawan, Allhabad.
2. Hartshorne, T. A. and Alexander, J. W. 2001. Economic Geography. Prentice Hall of India. New Delhi.
3. Hudson, R. 2005. Economic Geography. Sage Publication, New Delhi.
4. Jones, C. F. and Darkenwarld, G. G. Economic Geography. The Macmillan and Company. New York.
5. Knowled, R. and Wareing, J. 1992. Economic and Social Geography. Rupa and Company, Calcutta.
6. Knox, P. 2003. The Geography of World Economy. Arnold, London.
7. Saxena, H.M. 2013. Economic Geography. Rawat Publications, Jaipur.
8. Wheeler, J.O. and Muller, P.O. 1985. Economic Geography. John Wiley and Sons. New York.

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16GEOG303DCEC
Geography of Haryana
Exam course Code - 3067

End Sem. Max. Marks: 80

Time: 3 Hrs.

Note:

There will be nine questions in all. Question No. 1 is compulsory and consisting 8 subparts (short notes not exceeding 50 words each) covering entire syllabus. There will be 8 long questions, two from each unit. The candidate shall attempt FOUR long questions, selecting one from each unit. All questions carry 16 marks each.

Objective:

Haryana is a state with diversity in landscape, vegetation, soils, drainage network, economy, population characteristics and culture. It is agriculturally developed state and has got many resources, which are the main assets of the country and are also exported. Therefore it becomes immense important to make the students know about their state.

Outcome:

After studying Geography of Haryana, students will become aware about the state's beautiful and diverse landscapes. They will acquire knowledge about the economy and valuable resources. This would also sharpen their understanding about state.

UNIT-I

1. Haryana through the ages; Administration division of Haryana – A changing scenario.
2. Physiography; Climate; and Drainage system.
3. Flora and Fauna; Soils; Soil degradation and conservation.

UNIT-II

4. Mineral resource and energy sources.
5. Agriculture and its problems; Irrigation and its modes; Green revolution; Distribution of major crops- Wheat, Rice, Sugarcane, Cotton.
6. Horticulture Crops- Fruits, Vegetation and Flower cultivation; Mushroom farming Houses (Poly Houses); Animal husbandry, Dairying and Fisheries.

UNIT-III

7. Density, Distribution and Growth of population.
8. Sex Ratio; Literacy; and workforce.
9. Trend, Pattern and Characteristics of Urbanization in Haryana.

UNIT-IV

10. Emerging pattern of industrial development; Industrial policy of Haryana.
11. Distribution and concentration of major industries: Agro Industries and Automobile Industry; Agricultural Marketing.
12. Infrastructure Development – Transport, Information technology, health and education; Rural development and poverty alleviation; Tourism.

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Suggested Readings:

1. Budda, P. Haryana through the Ages, Kurukshetra University, Kurukshetra.
2. Duggal, S.L. Soil- Geographical Zones of Haryana, Haryana Cooperative Press, Chandigarh.
3. Government of Haryana, Economic Survey of Haryana, 2016-17, Department of Economic and Statistical Analysis, Haryana.
4. Haryana State Gazetteers, Haryana State Gazetteer, Vol. 1 & II, Haryana Gazetteer Organization, Revenue Department, Chandigarh, 2005.
5. Roy, S. Urbanization in Haryana, Hindi ed., Radha Publications, New Delhi, 2000.
6. Singh, J. An Agricultural Geography of Haryana, Vishal Publication, Kurukshetra.
7. Singh, M. and Kaur, H. Economic Development of Haryana: An Era of Prosperity, Deep and Deep Publication Pvt. Ltd., New Delhi.

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16GEOG304DCEC
Environment Geography ✓
Exam course Code - 3068

End Sem. Max. Marks: 80
Time: 3 Hrs.

Time: 3 hours

Note: There will be nine questions in all. Question No. 1 is compulsory and consisting 8 subparts (short notes not exceeding 50 words each) covering entire syllabus. There will be 8 long questions, two from each unit. The candidate shall attempt FOUR long questions, selecting one from each unit. All questions carry 16 marks each.

Objectives: The purpose of the course is to explain the students various dimensions of the ecosystems, their spatial connotation, anthropogenic interventions and resultant impacts, international environmental summits and legal provisions for environment protection.

Outcome: The students will get exposed to the concept of ecosystem, its various processes, s, anthropogenic interventions and consequential impacts and world community's efforts to address such problems

UNIT-I

1. Environment Geography: meaning, nature and scope; fundamental concepts of Environment; Approaches and Methods in Environment Geography; Relationship with other branches of knowledge,
2. Environment: Definition and Meaning; Components of environment- abiotic & biotic types of environment.

UNIT-II

3. Concept of Ecosystem; Types, components and function of ecosystem.
4. Energy flow in ecosystem: food chain, food web, trophic levels, ecological production and ecological pyramids.
5. Biogeochemical cycles: Hydrological, carbon, oxygen and nitrogen cycles

UNIT-III

6. Environment Degradation – Nature, process, types and causes of Environment degradation, Types of environmental pollution, Sources and effects of environment pollution: air water and land,
7. Environment Hazard: Causes and Measures; Global warming and Climate change- Ozone depletion; Green house effect; Acid Rain; Urban smog
8. Biodiversity and conservation: preservation and conservation of ecosystem through resource management.

UNIT-IV

9. Environment legislation: The Stockholm Conference, the Earth Summit, Kyoto Protocol and Paris declaration, Environment policy of India (post 2000 AD).
10. Environmental laws in India: Wild Life Act, Water Act, Forest Act, Environment Protection Act and National Environment Tribunal Act.

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11. Emerging environment issues in India, Environment conservation and management in India, Environment awareness and movement in India.

Suggested Readings:

1. Ackerman, E.A., Geography as a Fundamental Research Discipline, University of Chicago Research Papers, 1958.
2. Agarwal, A. and Sen, S.: The Citizens Fifth Report. Centre for Science and Environment New Delhi 1999.
3. Bertalanffy, L. General Systems Theory, George Bragiller New York, 1958.
4. Bodkin, E.: Environmental Studies, Charles E. Merrill Pub Co., Columbus, Ohio, 1982.
5. Chandna, R.C.: Environmental awareness, Kalyani Publishers, New Delhi, 1998.
6. Chorley, R.J., Geomorphology and General Systems Theory, U.S.G.S. Professional Paper, 500B, 1962.
7. Eyre, S.R. and Jones, G.R.J. (eds.), Geography as Human Ecology, Edward Arnold, London, 1966.
8. Kormondy, E.J.: Concepts of Ecology, Prentice Hall, 1989.
9. Manners, I.R. and Mikesell, M.W. (eds.), Perspectives on Environment, Commission on College Geography, Publ. No.13, Washington, D.C., 1974.
10. Nobel and Wright: Environmental Science, Prentice Hall, New York 1996.
11. Odum, E.P.: Fundamentals of Ecology, W.B. Saunders, Philadelphia, 1971.
12. Russwurm, L.H. and Sommerville, E. (eds.): Man's Natural Environment- A systems Approach, Duxbury, Massachusetts, 1985.
13. Sharma, H.S.: Ranthambhore Sanctuary-Dilemma of Eco-development, Concept, New Delhi, 2000.
14. Simmons, I.G.: Ecology of Natural Resources, Edward Arnold, London, 1981.
15. Singh, S.: Environmental Geography, Payag Publications, Allahabad, 1991.
16. Smith, R.L: Man and his Environment: An Ecosystem Approach, Harper & Row, London, 1992.
17. I.N.E.P.: Global Environmental Outlook, U.N. Pub, New York, 1998.
18. World Resources Institute: World Resources, (Latest Report) Washington D.C.
19. World Watch Institute: State of the World, Latest Report) Washington, D.C.

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16GEOG301OEC
Fundamentals of Geography
Exam course Code - 3069

End Sem. Max. Marks: 80

Time: 3 Hrs.

Time: 3 hours

Note:

There will be nine questions in all. Question No. 1 is compulsory and consisting 8 subparts (short notes not exceeding 50 words each) covering entire syllabus. There will be 8 long questions, two from each unit. The candidate shall attempt FOUR long questions, selecting one from each unit. All questions carry 16 marks each.

UNIT-I

1. Solar system, solar and lunar eclipse; Earth- shape, movement, formation of days/nights and seasons; location- latitude-longitude and the time zones, International Date line.

UNIT-II

2. Interior of earth; volcanism and earthquakes; plate tectonics; weathering and erosion; brief introduction to major landforms.

UNIT-III

3. Weather and climate: factors affecting and distribution; composition and structure of atmosphere;
4. Atmosphere pressure and global winds; introduction to Monsoon.

UNIT-IV

5. Relief of oceans; oceanic salinity; circulation of oceanic water; currents of Atlantic, Pacific and Indian Oceans.

Suggested Readings:

1. Leong, G.C. Certificate Physical and Human Geography, Oxford University Press, New Delhi, 2015.
2. Getis, A., Bjelland, M. and Getis V. Introduction to Geography, McGraw Hill Education, 2014.
3. Singh, S. Physical Geography, Pravalika Publication, Allahabad.
4. Strahler, A. Introducing Physical Geography, John Wiley & Sons, Inc.

Sethi
6/3/2020

Rajeshwari
6/3/2020

Aravind
6/3/2020

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DEPARTMENT OF GEOGRAPHY**B.P.S.M.V. Khanpur Kalan****Course Structure for M.Sc. Geography (CBCS) w.e.f. July 2020****Semester IV**

Sr. No

Course Code

Exam Course Code

Nomenclature of the Course

Contact Hours

Credits

Max. Marks

1

16GEOG401CC

4061

Urban Geography

4

1

0

5

80

20

100

2

16GEOG402CC

4062

Geography of Water Resource

4

1

0

5

80

20

100

3

16GEOG403CC

4063

Fundamentals of Remote Sensing and GIS

4

1

0

5

80

20

100

4

16GEOG404CC

4064

Practical Geography: Interpretation of Aerial Photographs, Satellite Images and Mapping

2

0

6

5

Distribution of Marks:

Lab Work Test: 60

Record on Lab Work: 20

Viva-Voce: 20

100

Open Elective (to be chosen from the list of electives provided by the University) CBCS Paper

4

0

0

4

80

20

100

5

16GEOG401DCEC

4065

Geography of Tourism

4

1

0

5

80

20

100

6

16GEOG402DCEC

4066

Tropical Climatology

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

Natural Hazards and Disasters

4

1

0

5

80

20

100

Total Credits:

25

500

| | | | | | | | | | | |
|-----------------------|--------------|------|--------------------|---|---|---|-----------|----|----|------------|
| 9 | 16GEOG401OEC | 4069 | Geography of India | 4 | 0 | 0 | 4 | 80 | 20 | 100 |
| Total Credits: | | | | | | | 29 | | | 100 |

Note: Open Elective Courses as Offered by the Department of Geography for the Students of other Department is –

Geography of India.

L – Lecture;

Th – Theory;

Total Credits: 25+25+29+29=108

S – Seminar;

IA – Internal Assessment

P – Practical;

T – Total

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16GEOG401CC
Urban Geography ✓
Exam course Code - 4061

End Sem. Max. Marks: 80

Time: 3 Hrs.

Note:

There will be nine questions in all. Question No. 1 is compulsory and consisting 8 subparts (short notes not exceeding 50 words each) covering entire syllabus. There will be 8 long questions, two from each unit. The candidate shall attempt FOUR long questions, selecting one from each unit. All questions carry 16 marks each.

Objectives:

The objective is to enlighten the students about the basics of urban geography, world urbanization pattern, morphology and land use of cities, social- economic, functional and spatial dimensions of urban centers and their various theoretical conjectures.

Outcome:

The students shall be acquainted with various urban concepts, urban economic base, urban functions, urban core- periphery interaction and various theories and models.

UNIT-I

1. Urban Geography: nature, scope, approaches and concepts.
2. Origin and evolution of towns and factors of urban growth.
3. The global context of urbanization and cycle of urbanization.

UNIT-II

4. Economic base of cities: concept and employment ratio.
5. Functional classification of cities: concepts and scheme of classification.
6. Rural Urban Fringe: structural characteristics and its development.
7. City and region: concepts of influence and dominance, methods of delimitation of area of influence and area of dominance.

UNIT-III

8. Urban morphology and land use structure: city core, commercial, industrial and residential areas.
9. Models of city structure: concentric zone model by E.W. Burgess, sector model by Homer Hoyt, multiple nuclei model by Harris and Ullman and models of south Asian cities.

UNIT-IV

10. Central place theory of Christaller and Losch.
11. Rank size rule and Law of primate city.
12. Social area analysis.

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Suggested Readings:

1. Mayer H.M. and Kohn, C.F. (1968), Readings in Urt. The University of Chicago Press, Chicago.
2. Berry, J.E. & et al. (Eds.), 1970, Geography Perspective on Urban System, Prentice Hall, New Jersey.
3. Cater, Herald (1972), The study of Urban Geography, Edward Arnold, London.
4. Johnson, J (1974), Suburban Growth, John Wiley and sons, London.
5. Kaplan, Wheeler and Holloway(2007) Urban geography, John Wiley, USA
6. Clark, D (1982), Urban Geography, Croom Halm, London and Cambridge.
7. Northern, R.M.(1979) Urban Geography, john Wiley, Toronto.
8. Michanel Pacione (2004) Urban Geography: a global Perspective, Routledge, USA.
9. Ramachandra,R(1992) Urbanization and Urban System in India, Oxford, London.
10. Raymond and Murphy(1960) The American cities: An urban geography, McGraw hills, NewYork.
11. Sinha, S.P. (1984), Processes and Fattern of Urban Development in India: A.C. study of Haryana, The associated Publishers, Ambala Caltt.

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16GEOG402CC
Geography of Water Resources ✓
Exam course Code - 4062

End Sem. Max. Marks: 80

Time: 3 Hrs.

Note:

There will be nine questions in all. Question No. 1 is compulsory and consisting 8 subparts (short notes not exceeding 50 words each) covering entire syllabus. There will be 8 long questions, two from each unit. The candidate shall attempt FOUR long questions, selecting one from each unit. All questions carry 16 marks each.

Objectives:

The objective of the course is to introduce the students to the concepts of development of earth's finite water resources, its dynamic nature, availability, and management and conservation practices.

Outcome:

The course shall make the students understand the issues related to spatial and temporal dimensions of availability, utilization, conservation, management and challenges of water resources.

UNIT-I

1. Definition, nature, scope and importance of Water Resources Geography.
2. Distribution and changing trends in use of water in the world.
3. Status of water resources in India.

UNIT-II

4. Factors affecting demand of water, water demand and supply (Domestic).
5. Estimation of water demand and use in agricultural sector.
6. Groundwater assessment, development and management.
7. Water pricing and its marketing, virtual and footprints of water.

UNIT-III

8. Irrigation induced water logging and salinity with reference to Indira Gandhi Canal project.
9. Sources, monitoring and management of water pollution.
10. Interstate water disputes - treaties with reference to India.
11. Water Policy of India.

UNIT-IV

12. Water harvesting techniques.
13. Watershed management.
14. Issues and challenges of inter basin transfer of water.

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Suggested Readings:

1. Aggarwal, A. and Narain, S. 1997. Dying Wisdom: Rise, Fall and Potential of India's Traditional Water Harvesting System. Centre of Science and Environment, New Delhi, 1997.
2. Gurjar R.K. and Jat B.C. 2008. Geography of Water Resources, Rawat Publications, Jaipur.
3. Jones, J.A. 1997. Global Hydrology-Processes, Resources and Environmental Management. Longman.
4. Michael. A.M. 1978. Irrigation: Theory and Practices. Vikas Publishing House Pvt. Ltd., New Delhi.
5. Mather, J.R. 1984. Water Resources Distribution, Use and Management. John Wiley, Marylane.
6. Newson, M. 1992. Land, Water and Development River Basin Systems and their Sustainable Management. Routledge, London.
7. Rao, K.L. 1979. India's Water Wealth. Orient Longman, New Delhi.
8. Tideman, E.M. 1996. Watershed Management; Guidelines for Indian Conditions, Omega, New Delhi.

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16GEOG403CC
Fundamentals of Remote Sensing and GIS ✓
Exam course Code - 4063

End Sem. Max. Marks: 80
Time: 3 Hrs.

Note:

There will be nine questions in all. Question No. 1 is compulsory and consisting 8 subparts (short notes not exceeding 50 words each) covering entire syllabus. There will be 8 long questions, two from each unit. The candidate shall attempt FOUR long questions, selecting one from each unit. All questions carry 16 marks each.

Objective:

The objective is to provide exposure to students regarding use of new techniques in obtaining geographical data. It shall introduce the students to the processes of satellite remote sensing data acquisition and the application of digital information in real time mapping.

Outcome:

The course will equip the students with state of art concepts and methodologies of remote sensing technology.

UNIT-I

1. Remote Sensing, definition and scope, EMR and spectrum.
2. Interaction of EMR with atmosphere and earth surface features. Atmospheric window. Remote Sensing Platforms and Sensors.

UNIT-II

3. Aerial Photographs: History, definition and advantages and limitations. Types of aerial photographs and resolution.
4. Mirror Stereoscope, stereoscopic parallax, relief displacement. Elements of aerial photo interpretation; Acquisition of aerial photographs in India.

UNIT-III

5. Concept of Multispectral, Thermal and Hyper spectral remote sensing. Characteristics of Indian remote sensing satellite and data.
6. Digital Image processing and application: image restoration and correction. Image classification: supervised and unsupervised. Applications in resource mapping and monitoring.

UNIT-IV

7. GIS: Definition and scope; Components and Elements of GIS, Geographic Data; its sources and Spatial Data Structure (Raster and Vector)
8. Fundamentals of Global Positioning System (GPS) and applications.

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Suggested Readings:

1. Avery T.E., and G.L. Berlin (1992): Fundamentals of Remote Sensing and Air Photo Interpretation, 514 Ed. Macmillan, New York, USA.
2. Aggarwal C.S. and P.K. Garg (2000). Remote Sensing, A.H. Wheeler & Co. Ltd, New Delhi.
3. Bhattacharya, B (
4. Campbell, J.B. (2002) Introduction to Remote Sensing, 3rd ed., Taylor & Francis, New York, USA.
5. Jensen, J.R. (2000), Remote Sensing of the Environment: An earth Resource Perspectives, Pearson Education Inc. India.
6. Lillesand, Thomas M. and R. Kiffer (1994), Remote Sensing and Image Interpretation, 3rd edition, John Willy & sons, Inc New York, USA.
7. Nag and Kudrat (2002), Remote Sensing and Image Interpretation, Concept Publishers, Delhi.
8. Meenakhi Kumar(2000), Text book on Remote Sensing; NCERT, New Delhi.
9. Reddy, Anji (2000) Remote Sensing and Geographical Information System (An Introduction), Hyderabad.
10. Sabins, F (1982): Remote Sensing Principles and Application, Freeman and Compere, New York, USA.
11. Burrough, P.A. and McDonnell, R. (1998): Principles of Geographic Information Systems. Oxford University Press, Oxford.
12. Chang, K.T. (2003): Introduction to Geographic Information Systems. Tata McGraw Hill Publications Company, New Delhi.
13. Ahmed El-Rabbany: Introduction to GPS, 2nd ed., Artech House, Boston
14. Chauniyal, D. D. (2004): Remote Sensing and Geographic Information Systems. (in Hindi). Sharda Pustak Bhawan, Allahabad.
15. Demers, M. N. (2000): Fundamentals of Geographic Information Systems. John Wiley and Sons, Singapore.
16. Prithvish Nag and Samita Sengupta

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16GEOG404CC
Practical Geography:
Interpretation of Aerial Photographs, Satellite Images and Mapping ✓
Exam course Code - 4064

Max. Marks: 100
Distributions of Marks:
Lab Work Test: 60
Record on Lab Work: 20
Viva-Voce: 20

UNIT-I

1. Stereo Vision Test, Orientation of Stereo model under Mirror Stereoscope;
2. Determination of Scale on an aerial photograph;
3. Interpretation of Aerial photographs: Identification, mapping and interrelation of natural and cultural features (at least two exercise).

UNIT-II

4. Georeferencing of Toposheet/Satellite Imagery.
5. Digital Image Processing.
6. Mapping Land Use/ land cover with any software (at least one exercise each on Point, line and polygon features);

Suggested Readings:

1. Avery T.E., and G.L. Berlin (1992): Fundamentals of Remote Sensing and Air Photo Interpretation, 514 Ed. Macmillan, New York, USA.
2. Aggarwal C.S. and P.K. Garg (2000). Remote Sensing, A.H. Wheeler & Co. Ltd, New Delhi.
3. Bhattacharya, B (
4. Campbell, J.B. (2002) Introduction to Remote Sensing, 3rd ed., Taylor & Francis, New York, USA.
5. Jensen, J.R. (2000), Remote Sensing of the Environment: An earth Resource Perspectives, Pearson Education Inc. India.
6. Lillesand, Thomas M. and R. Kiffer (1994), Remote Sensing and Image Interpretation, 3rd edition, John Willy & sons, Inc New York, USA.
7. Nag and Kudrat (2002), Remote Sensing and Image Interpretation, Concept Publishers, Delhi.
8. Meenakhi Kumar(2000), Text book on Remote Sensing; NCERT, New Delhi.
9. Reddy, Anji (2000) Remote Sensing and Geographical Information System (An Introduction), Hyderabad.
10. Sabins, F (1982): Remote Sensing Principles and Application, Freeman and Company, New York, USA.
11. Burrough, P.A. and McDonnell, R. (1998): Principles of Geographic Information Systems. Oxford University Press, Oxford.

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12. Chang, K.T. (2003): Introduction to Geographic Information Systems. Tata McGraw Hill Publications Company, New Delhi.
13. Ahmed El-Rabbany: Introduction to GPS, 2nd ed., Artech House, Boston
14. Chauniyal, D. D. (2004): Remote Sensing and Geographic Information Systems. (in Hindi). Sharda Pustak Bhawan, Allahabad.
15. Demers, M. N. (2000): Fundamentals of Geographic Information Systems. John Wiley and Sons, Singapore.

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16GEOG401DCEC
Geography of Tourism
Exam course Code - 4065

End Sem. Max. Marks: 80
Time: 3 Hrs.

Note:

There will be nine questions in all. Question No. 1 is compulsory and consisting 8 subparts (short notes not exceeding 50 words each) covering entire syllabus. There will be 8 long questions, two from each unit. The candidate shall attempt FOUR long questions, selecting one from each unit. All questions carry 16 marks each.

Objective:

The objective of this course is to appraise the students about the tourist resources in different parts of India. It brings out the eco-tourist potentials in different physiographic regions namely Northern Mountains, Plains, Peninsula, Coastal regions and beautiful Islands.

Outcome:

Through this paper the students will internalize the importance of and the role played by the tourism industry in India. They will also get to know about the various important destinations and their ecological settings.

UNIT-I

1. Definition, nature, scope and significance of tourism geography.
2. Factors influencing tourism: historical, physical, socio-cultural and economic.

UNIT-II

3. Motivating factors of tourism: leisure, recreation, spiritual, attraction of site and situation.
4. Infrastructure and support system of tourism accommodation and supplementary accommodation.

UNIT-III

5. Eco-Tourism potentials in India with reference to northern mountains and plains, peninsula, coastal regions and islands.
6. Impact of tourism: physical, economic and social.

UNIT-IV

7. Environmental laws and tourism.
8. Impact of globalization and foreign capital on tourism development.
9. Government policies for tourism development.

Suggested Readings:

1. Bhatia A.K. Tourism Development; Principles and Practices. Sterling Publishers, New Delhi 1996.
2. Bhatia, A.K. International Tourism – Fundamentals and Practices, Sterling, New Delhi (1991).

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3. Chandra R.H.: Hill Tourism: Planning and Development, Kanishka Publishers, New Delhi 1998.
4. Hunter C and Green H: Tourism and the Environment: A Sustainable Relationship, Routledge, London, 1995.
5. Inskeep.E: Tourism Planning: An Integrated and Sustainable Development Approach, Van Nostrand and Reinhold, New York, 1991.
6. Kaul R.K. Dynamics of Tourism & Recreation. Inter-India, New Delhi (1985).
7. Kaur J.: Himalayan Pilgrimages & New Tourism Himalayan Books, New Delhi, 1985.
8. Lea J.: Tourism and Development in the Third World, Routledge, London, 1988.
9. Molton D.: Geography of World Tourism Prentice. Hall, New York, 1993.
10. Pearce D.G. Tourism To-day: A Geographical Analysis, Harlow, Longman, 1987.
11. Robinson, H. A Geography of Tourism. Macdonald and Evans, London, 1996.
12. Sharma J.K. (ed): Tourism Planning and Development – A New Perspective Kanishka Publishers, New Delhi 2000.
13. Shaw G. And Williams A.M. Critical issues in Tourism-A Geographical perspective, Oxford: Blackwell, 1994.
14. Sinha P.C. (ed): Global Tourism: The Next decade, Oxford, Butterworth, Heinemann, Oxford, 1994.
15. Voase R Tourism: The Human Perspective Hodder & Stoughton, London, 1995.
16. Williams A.M. and Shaw G. (eds): Tourism and Economic Development- Western European Experiences, London.

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End Sem. Max. Marks: 80

Time: 3 Hrs.

Note:

There will be nine questions in all. Question No. 1 is compulsory and consisting 8 subparts (short notes not exceeding 50 words each) covering entire syllabus. There will be 8 long questions, two from each unit. The candidate shall attempt FOUR long questions, selecting one from each unit. All questions carry 16 marks each.

Objective:

The objective of this course is to appraise the students about the processes, dynamics and pattern of climate in the tropical area. It would also underline the significance of tropical climates and their impact on earth systems beyond tropics.

Outcome:

This course would make the students understand the processes and resultant climatic pattern in tropical areas. It will also help them in establishing the linkages between tropical climates and weather systems in mid and high latitudes.

UNIT-I

1. Nature and scope and significance of Tropical Climatology.
2. Energy balance in tropical areas
3. Temperature distribution in tropical areas.

UNIT-II

4. Atmospheric Pressure and circulation in tropical areas-Hadley Cell
5. Walker Circulation, ENSO.
6. Monsoons-Theories of origin and characteristics and areas of influence

UNIT-III

7. Tropical Cyclones-Origin and characteristics.
8. Tropical Rainfall-Dynamics and distribution.
9. Heavy Precipitation events in tropical areas

UNIT-IV

10. Tropical Climates-Classification and characteristics.
11. Tropical Climates and agriculture: Human Adaptation to Tropical Climates.
12. Impact of Global Warming on Tropical Climates and Biomass.

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Suggested Readings:

1. Barry, RF and RJ Chorley (1998) Atmosphere, Weather and Climate, Routledge, London.
2. Chritchfield, HJ, General Climatology.
3. Das PK (1987) The Monsoons, NBT Publications, New Delhi.
4. Fein JS and PM Stephens (1987) Monsoons, Wiley Intersciences.
5. Koenigsberger O H and others, Manual of Tropical Housing and Buildings, Universities Press
6. McGregor, GR and Simon Nierswold (1998) Tropical Climatology: An introduction to the Climates of the Low Latitudes, Wiley Interscience.
7. Parenti, C (2011) Tropic of Chaos: Climate Change and New Geography of Violence, Nation Books, New York
8. Robinson PJ and S Henderson (1999) Contemporary Climatology, Henow.
9. Thompson, RD and A Perry (Ed.) (1997): Applied Climatology, Principles and Practices, Routledge, London.
10. Trewartha, GT. An Introduction to Climate. McGraw Hill Company, New York, 1980.

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16GEOG403DCEC
Geography of Health and Well-being
Exam course Code - 4067

End Sem. Max. Marks: 80

Time: 3 Hrs.

Note:

There will be nine questions in all. Question No. 1 is compulsory and consisting 8 subparts (short notes not exceeding 50 words each) covering entire syllabus. There will be 8 long questions, two from each unit. The candidate shall attempt FOUR long questions, selecting one from each unit. All questions carry 16 marks each.

Objectives:

The objective of the course to make students develop an understanding of the concept of social wellbeing in the context of space. The students shall study the human development index and parameters of wellbeing.

Outcome:

The course shall equip the students with the understanding of socio-economic inequalities prevailing in the society and their spatial dimensions. The students will learn about the significance of wellbeing in the society.

UNIT-I

1. Geography of Health Nature, Scope, Approaches to the study of Health Geography. Concept of Disease Ecology, Epidemiology. Welfare Geography: Concept of social well-being, development and approaches to study human welfare.
2. Human beings: needs and wants, quality of life, level of living and state of well-being in India, identification of social indicators, their data sources and problem.

UNIT-II

3. Human Development Index, poverty and its measures, poverty and inequality in India
4. Gender issues in the process of development and gender development index.

UNIT-III

5. Structure of education in Independent India, Regional patterns of educational development; enrolment and dropouts with reference to school education.
6. Financing education and education policy in India.

UNIT-IV

7. Health programmes and National Health Policy in independent India.
8. Nutritional Security in India.

Suggested Readings:

1. Ahmad, Aijazuddin, Social Geography, Rawat Publication, New Delhi, 1999.
2. Dreze Jean, Amartya Sen, Economic Development and Social opportunity, Oxford University Press, New Delhi, 1996.
3. Sen, Amartya & Drze Jean, Indian Development: Selected Regional Perspectives, Oxford University Press, 1966.
4. David M. Smith (1977), Human Geography: A Welfare Approach, Arnold Heinemann.
5. D.M. Smith (1973), The Geography of Social Well-being in the United States. M.cGraw- Hill, New York.

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6. D.M. Smith (1977); Where the Grass is Greener: Geographical perspectives on inequality, Penguin, Haemonds worth.
7. Coates, B.E., R.J. Johnston and P.L. Knox(1977), "Geography and Inequality", Oxford University Press, London.
8. National Nutrition Monitoring Bureau (2000), "Dynamic Database on Diet and Nutrition", National Institute & Nutrition, Hyderabad
9. Draz, Jean and Amartya Sen (2002), India: Development and Participation, OUP, New Delhi,
10. Uma Kapila (2007) (ed). India's Economic Development Since 1947. Academic Foundation.

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16GEOG404DCEC
Natural Hazards and Disasters Management ✓
Exam course Code - 4068

End Sem. Max. Marks: 80

Time: 3 Hrs.

Note:

There will be nine questions in all. Question No. 1 is compulsory and consisting 8 subparts (short notes not exceeding 50 words each) covering entire syllabus. There will be 8 long questions, two from each unit. The candidate shall attempt FOUR long questions, selecting one from each unit. All questions carry 16 marks each.

Objective:

The objective of this course to develop among the students an understanding about the geographical dimensions of different types of disasters. It also introduces the students to concepts and practices of disaster mitigation and recovery, impacts of disasters and role of RS and GIS in disaster prevention.

Outcome:

The course shall make the students aware about the risk of occurrence of different types of disasters in various parts of world. It will also appraise them about the mitigation and recovery mechanisms of disasters.

UNIT-I

1. Disasters and Hazards: Definition, nature and classification.
2. Geography and disasters: major disasters of world, disaster profile of India
3. Tectonic Disasters: Volcanoes, Earthquakes, Tsunamis, Landslides.

UNIT-II


4. Hydrological Disasters: Floods and Droughts
5. Climatic Disasters: Cyclones and Heavy Precipitation events
6. Human Induced Disasters: Epidemics, Industrial and Transport Disasters; Wars and Terrorism induced Disasters

UNIT-III

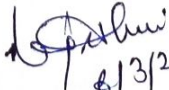
7. Disaster Management in India: Policy and Organizational Structure setup.
8. Disaster Vulnerability and Affecting Factors.
9. Planning for Disaster Mitigation Measures and Preparedness.


UNIT-IV

10. Post Disaster Recovery and Rehabilitation
11. Impacts of Disaster on Society and Economy
12. Remote Sensing and GIS Applications in Disaster Prevention and Monitoring.


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Suggested Readings:

1. laikie, P and other (1994) At Risk: Natural Hazards, People;s Vulnerability and Disasters, Routledge, London.
2. Carter, NW (1991), Disaster Management: A Disaster Manager's Handbook, ADB, Manila.
3. Cuny, FC (1983) Disasters and Development, Oxford University Press.
4. Hewitt, K (1977) Regions of Risk: A Geographical Introduction to Disasters, Longman, Harlow.
5. Kates RW and I Burton (1986) Geography, Resources and Environment, Vol. I & II, Themes from the work of Gilbert F White, The University of Chicago Press, Chicago
6. Smith K (1996) Environmental Hazards: Assessing Risks and Reducing Disasters, Routledge, London.
7. Varley, A, Disaster, Development and Environment, John Wiley and Sons, Chichester.
8. National Policy on Disaster Management, 2009, Ministry of Home Affairs, Govt. of India, New Delhi.

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End Sem. Max. Marks: 80
Time: 3 Hrs.

Note:

There will be nine questions in all. Question No. 1 is compulsory and consisting 8 subparts (short notes not exceeding 50 words each) covering entire syllabus. There will be 8 long questions, two from each unit. The candidate shall attempt FOUR long questions, selecting one from each unit. All questions carry 16 marks each.

Objective:

India is a country with diversity in landscape, vegetation, soils, drainage network, economy, population characteristics and culture. It is rich in resources and has got many minerals and power resources, which are the main assets of the country and are also exported. Therefore it becomes immense important to make the students know about their country.

Outcome:

After studying Geography of India, students will become aware about the country's beautiful and diverse landscapes. They will acquire knowledge about the economy and valuable resources. This would also sharpen their understanding about the unity in diversity in India.

UNIT-I

1. Physiography: Relief characteristics and physiographical divisions
2. Drainage systems and their functional significance.
3. Climate: characteristics, seasons and climatic regions of India as given by Trewartha and R.L.Singh.
4. Soil and vegetation types - their distribution, characteristics and conservation.

UNIT-II

5. Agriculture: Characteristics of Indian agriculture, agricultural development in India and Problems of Indian agriculture
6. Irrigation: Types of irrigation, Major irrigation projects: Bhakra Nangal and Damodar Valley Projects

UNIT-III

7. Production, distribution, status of use and conservation of following minerals: Iron ore, Mica, Manganese and Bauxite
8. Production, distribution, status of use and conservation of following power resources: Coal, Petroleum, Hydropower

UNIT-IV

7. Production and distribution of (a) iron and steel (b) Cotton textile and (c) Automobile industry
8. Major industrial regions and their characteristics.
9. International trade: Major exports and imports.

Suggested Readings:

1. Tiwari, R. C.: Geography of India, Prayag Pustak Bhawan, Allahabad.
2. Bharucha, J.P., 1982 : Vegetation of India, Oxford India, Bombay.
3. Dubey, R. N., 1974: Economic Geography of India, Kitab Mahal, Allahabad
4. Hussain Majid (2015): Geography of India, Mc Graw Hill Education.
5. Joshi, H. L., 1990: Industrial Geography of India, Rawat Publications, Jaipur
6. Nag, P. and Sengupta, S., 1992: Geography of India, Concept publications. Co., New Delhi.
7. Rautray, J.K.: Geography of regional disparity, Asian Institute of Technology, Bangkok, 1993
8. Singh, R. L.: India: A Regional Geography, N.G.S.I., Varanasi, 1971
9. Sharma, T. C. and Coutinho, O. 1988: Economic and Commercial Geography of India, Vikas Publishing House Pvt. Ltd, New Delhi.
10. Tirtna, R. and Krishan G., 1996: Geography of India, Rawat Publications, Jaipur & New Delhi.

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