

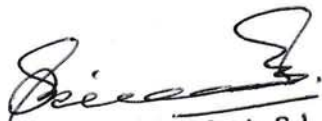
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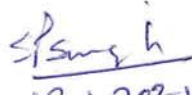
2 Year (Four Semester)
Post Graduate Programme

Syllabus for M.A. Geography
(Faculty of Social Science)


Under
Choice Based credit System (CBCS)

(To be effective from 2018-19)


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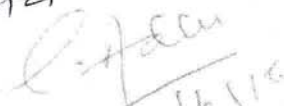

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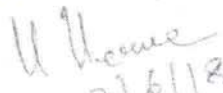
~~Dated: 12 June 2018~~

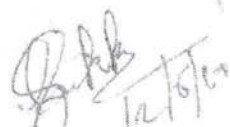

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SEMESTER - I : MA GEOGRAPHY

COURSE OPTED	COURSE CODE	COURSE NAME	CREDITS
CC - 1 (Core Course)	GEO- M- 101	Geomorphology	05
CC - 2 (Core Course)	GEO- M- 102	Climatology and Oceanography	05
CC - 3 (Core Course)	GEO- M- 103	History of Geographical Thought	05
CC - 4 (Core Course)	GEO- M- 104	Representation and Analysis of Statistical Data (Practical)	05
AECC - 1 (Ability Enhancement Compulsory Course)		Environmental Sustainability Swachha Bharat Abhiyan Activities	03 02

SEMESTER - II : MA GEOGRAPHY

COURSE OPTED	COURSE CODE	COURSE NAME	CREDITS
CC - 5 (Core Course)	GEO- M- 201	Regional Planning and Rural Development	05
CC - 6 (Core Course)	GEO- M- 202	Environment and Disaster Management	05
CC - 7 (Core Course)	GEO- M- 203	Resource and Economic Geography	05
CC - 8 (Core Course)	GEO- M- 204	Geography of India	05
CC - 9 (Core Course)	GEO- M- 205	Cartographic Techniques (Practical)	05
AEC - 1 (Ability Enhancement Course)		Ability Enhancement Course	05

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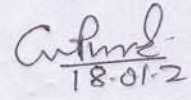
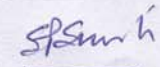
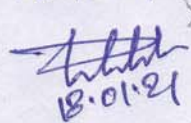
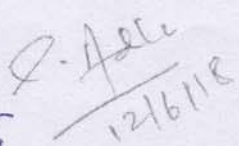
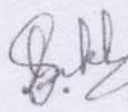
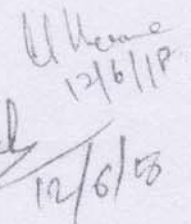
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SEMESTER - III : MA GEOGRAPHY

COURSE OPTED	COURSE CODE	COURSE NAME	CREDITS
CC - 10 (Core Course)	GEO- M- 301	Quantitative Techniques and Research Methodology	05
CC - 11 (Core Course)	GEO- M- 302	Remote Sensing and Geographical Information System	05
CC - 12 (Core Course)	GEO- M- 303	Human and Social Geography	05
CC - 13 (Core Course)	GEO- M- 304	Land Use and Agriculture Geography	05
CC - 14 (Core Course)	GEO- M- 305	Instrumental Surveying, GIS and GPS	05
AECC - 2 (Ability Enhancement Compulsory Course)		Human Values and Professional Ethics Gender Sensitization	03 02

SEMESTER - IV : MA GEOGRAPHY

COURSE OPTED	COURSE CODE	COURSE NAME	CREDITS
EC - 1 (Elective Course)	GEO- M- 401	A. Urban Geography/ B. Political Geography/ C. Population Geography/ D. Geology of India/ E. Settlement Geography/ F. Advance Cartography	05
EC - 2 (Elective Course)	GEO- M- 402	Dissertation/ Project Work Based on Socio Economic Survey	05
DSE - 1 (Discipline Specific Elective) OR GE - 1 (Generic Elective)		Regional Planning and Rural Development (201 -CC) Or Geography of Bihar	05

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M. A. GEOGRAPHY (SEMESTER – I)

Code -GEO – M 101 (Core Course- 01)
Geomorphology (5 Credits)

Time: 3 Hours (ESE)

Full Marks: 100

ESE : 70 Marks

CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

Part – A

Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit) 10 x 2 = 20 marks

Part-B

Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) 4 x5 = 20 marks

Part – C

Five long answer Questions -Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit) 3 x10 = 30 marks

Unit I	Theories regarding evolution of Earth's Crust Isostasy- Concept, Theories and its Application Continental Drift Theory and Plate Tectonics Theory of Sea Floor Spreading
Unit II	Morphogenic Evolution Models of Davis, Penck and King Models of Slope Formation Channel Morphology Rejuvenation and Multiple Cycle of Erosion
Unit III	Classification and Evolution of Arid Landforms Glacial Landforms Periglacial landforms Karst landforms
Unit IV	Geomorphic Evolution of: Chotanagpur Highlands Peninsular India Shillong plateau Kashmir Himalayas
Unit V	Meaning and Scope of Applied Geomorphology Application of Geomorphology in engineering projects and oil exploration Morphometric Analysis of Drainage basin – Stream Order, Sinuosity Index and Drainage Density
CIA 30 Marks

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Selected Readings:

1. William, D. Thornbury - Principles of Geomorphology
2. Savindra Singh - Geomorphology
3. Enayat Ahmed - Geomorphology
4. P. Dayal- Geomorphology
5. V. K. Sharma - Geomorphology Earth Surfaces
6. Wooldrige and Morgan - An Outline of Geomorphology
7. R. N. Tikka - Physical Geography
8. P. K. Sen and N. Prasad - An Introduction to the Geomorphology of India
9. D. S. Lal - Physical Geography
10. Cotton - Geomorphology.
11. Sparks, B.W., Geomorphology.
12. Steers, J.A., Unstable Earth.
13. Strahler, A.H. & Strahler, A.H., Elements of Physical Geography.
14. Von Engel., Geomorphology.
15. Daly: Our Mobile Earth

**Code - GEO – M 102 (Core Course-02)
Climatology and Oceanography (5 Credits)**

Time: 3 Hours (ESE)

Full Marks: 100
ESE : 70 Marks
CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

Part – A

Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit) 10 x 2 = 20 marks

Part-B

Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) 4 x 5 = 20 marks

Part – C

Five long answer Questions -Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit) 3 x 10 = 30 marks

Unit I

Climatology and its Relation with other Sciences
Composition and Thermal Structure of Atmosphere
Heat Budget and Heat Balance

Unit II

Airmasses: Characteristics, Classification and Distribution
Fronts, Types of Fronts and associated Weather Conditions
Techniques of Weather Forecasting
Cyclones and Anticyclones

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Savindra Singh 18.1.21
Enayat Ahmed 18.01.21
V.K. Sharma 18.1.2021
P. Dayal 12/6/18
R.N. Tikka 12/6/18
P.K. Sen and N. Prasad 12/6/18
D.S. Lal 12/6/18
Cotton 12/6/18
Sparks, B.W. 12/6/18
Steers, J.A. 12/6/18
Strahler, A.H. & Strahler, A.H. 12/6/18
Von Engel. 12/6/18
Daly 12/6/18

Unit III Theories of climatic change
Global Warming: Causes and Consequences
El-Nino and La-Nina phenomena in Indian context

Unit IV Oceanography: Relief Features of Ocean Floor
Bottom Relief of Indian and Atlantic Ocean
Submarine Canyons

Unit V Theories of Origin of Tides
Types of Coral Reef and theories of Coral Reef formation
Ocean Deposits

CIA 30 Marks

Selected Readings:

1. Savindra Singh – Climatology
2. D. S. Lal – Climatology
3. A. Miller – Climatology
4. E. Aguado E. and J. E. Bent: Understanding Weather and Climate
5. Alka Gautam – Jalvayu Abum Samudra Vigyan
6. Sharma & Vatal – Oceanography for Geographers
7. Blair, J.A., Climatology-General and Regional.
8. Chorley, R.J. & Barry, R.G., Atmospheric Weather and climate.
9. Donn, W.L., Meteorology.
10. Kendrew, W.G., Climates of the Continents.
11. Mather, J.R., Climatology: Fundamental and Applications, 1974.
12. Rama Sastry, A.A., Weather & Weather forecasting.
13. Rummey, G., Climatology and the world's climate.
14. Stringer., Foundation of Climatology.
15. Stringer., Techniques in Climatology
16. Trewartha, G.T., An Introduction to Climate.
17. Davis, R.J.A. 1986, Oceanography – An Introduction of the Marine Environment, Wjn C. Brown, Iowa.
18. Murray, S.J., 1913, Ocean, A General account of the Science of the sea, Thorton Butter Worth, London.
19. Siddhartha, K. 1999, Oceanography, A Brief Introduction, Kisalaya Pub. Pvt. Ltd., New Delhi.
20. Stahler, A. N. Stahler A.M., 1997, Geography and man's Environment, John Wiley and Sons, New York.
21. Thurnman, H.V., 1978, Introduction to oceanography, Charles E. Merrill Pub. Co., London.
22. Weyl, P.K. 1970, Oceanography an Introduction of the Marine Environment, John Wiley and Sons Ltd., London

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Code - GEO – M 103 (Core Course-03)
History of Geographical Thought (5 Credits)

Time: 3 Hours (ESE)

Full Marks: 100
ESE : 70 Marks
CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

Part – A

Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit) 10 x 2 = 20 marks

Part-B

Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) 4 x5 = 20 marks

Part – C

Five long answer Questions -Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit) 3 x10 = 30 marks


Unit – I Place of Geography in Sciences and Social Sciences
 Contribution by Greek and Roman Scholars with special reference to Eratosthenes,
 Herodotus, Aristotle, Plato, Strabo, Ptolemy
 Contribution by Arab scholars
 Development of Geographical ideas in Ancient India


Unit II Development of Geography during 19th century
 Concept of Space- Absolute, Relative and Abstract, and Post Modern Space
 Development of Modern Indian Geography: Prospects, Problems and Future

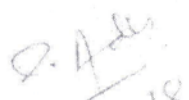
Unit III Positivism and Pragmatism in Human Geography
 Paradigms in Geography
 Quantitative Geography: Revolution, Merits and Demerits.
 Models – Definition and Types

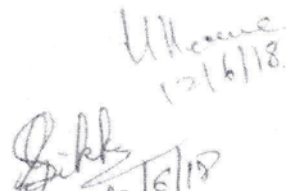
Unit IV Applied Geography
 Behavioural Geography
 Radical Geography
 Humanistic Geography

Unit V Structuralism
 Functionalism
 Feminism
 Post-Modernism


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CIA

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Selected Readings:

1. Johnston R. and Sidaway J. (1997) Geography and Geographers
2. Richard Pee (1998) Modern Geographical Thought
3. Milton E. Harvey & Brian P. Holly (ed.) (1989): Themes in Geographical Thought
4. D. Harvey (1969) Explanation in Geography
5. R. Doi (2009) Geographical Thought
6. M. Hussain (2004 rep) Evolution of Geographical Thought
7. S. Adhikari (2009 5th Ed.) Fundamentals of Geographical Thought
8. R. D. Dikshit (2002): Geographical Thought: A Conceptual History of Ideas
9. Jagdish Singh (2000) Bhaugolik Chintan Ka Mool Adhar (Hindi)
10. Kaushik (2009) Bhaugolik Chintan avam Bidhitantra (Hindi)
11. V. K. Srivastava (2002) Bhaugolik Chintan Ka Adhar (Hindi)
12. Bansal (2008) Bhaugolik Chintan (Hindi)
13. Lalit Raina (2008) Geographical Thought (English)
14. Ali, S.M., Arab Geography. AMU., Press, Aligarh.
15. Anuchin, V., Directions in Geography.
16. Claval, P., Epistemology and History of Geographical Thought, in progress in Human Geography, Vol.4.
17. Dickinson, R.E., The Making of Modern Geography.
18. Davis, V.K., Conceptual Revolution in Geography.
19. Freeman, T.A., A Hundred Years of Geography: Introduction to Behavioral Geography.
20. Hartshorne, R., Perspectives on Nature of Geography, Rand MacNally, 1959.
21. Johnston, R.J., The Future of Geography. Methuen, London, 1988.

Code - GEO - M 104 (Practical) (Core Course-04)
Representation and Analysis of Statistical Data (5 Credits)

Time: 3 Hours (ESE)

Full Marks: 100

ESE : 70 Marks

CIA : 30 Marks

In the End Semester Examination questions will be set preferably from each unit out of which candidates are required to answer any three questions.

Each Question will carry 20 marks. (20×3=60 marks)

Practical record and viva voce will comprise 10 marks

Unit I Population Data - Dot Map, Proportionate Circle, Spherical Diagram

Unit II Climatic Data - Wind Rose, Foster's Climograph

Interpretation of Weather maps

Unit III Economic Data - Band Graph, Ergograph

Density of Population - Choropleth and Isopleth Method

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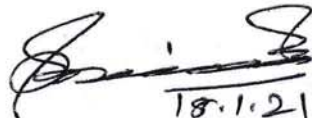
Unit IV Statistical data - Correlation, Regression and Nearest Neighbor Analysis


Unit V , Practical Record and Viva-Voce


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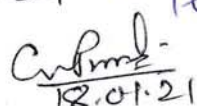
Selected Readings:


1. Monkhouse and Wilkinson - Maps and Diagrams
2. Mahmood, Aslam. "Statistical Methods for Geographical Studies"
3. Campbell, J., Introductory Cartography, Prentice Hall, Inc., Englewood Cliff, New Jersey, 1984.
4. Cuff, D.J., & Mattson, M.T., Thematic Maps, their Design and Production, Mathuen, New York., 1982.
5. Robinson, A.H. & others., Elements of Cartography, John Willey and Sons, New York (New edition).
6. Archer, J.E., & Dalton, T.H., Fieldwork in Geography, London.
7. National Atlas and Thematic Maps Organization (NATMO): National Atlas of India, Calcutta.
8. Monkhouse, F.J., Maps and Diagrams, Methuen & Co., London, 1967.
9. डा० जे० पी० शर्मा-प्रयोगात्मक भूगोल की रूपरेखा
10. डा० चतुर्भुज मामोरिया एवं ओ०दामलजैन-मानचित्रांकन एवं प्रायोगिक भूगोल
11. डा० एम० एम० पी० सिन्हा एवं डा० सीमाबाला-उच्चकार्टोग्राफी
12. Sarkar, A. 2015. Practical Geography: A Systematic Approach, 3rd ed. Orient Blackswan Private Ltd.
13. Singh, R.L., Singh, R.P.B. 2008. Elements of Practical Geography, Kalyani Publishers.



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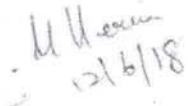

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M. A. GEOGRAPHY (SEMESTER – II)

**Code - GEO – M 201 (Core Course-05)
Regional Planning and Rural Development (5 Credits)**

Time: 3 Hours (ESE)

Full Marks: 100

ESE : 70 Marks

CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

Part – A

Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit) 10 x 2 = 20 marks

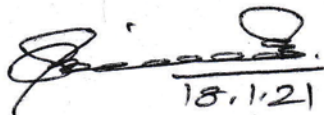
Part-B

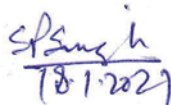
Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) 4 x5 = 20 marks

Part – C

Five long answer Questions -Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit) 3 x10 = 30 marks

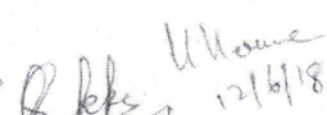
- Unit I** Regional Planning: Concept, Merits and Limitation
 Planning Process – Sectoral, Temporal and Spatial Dimensions
 Concept of Planning Region and Methods for Delineation of Regions
- Unit II** Special Purpose Planning Regions in India:
 River Valley Regions
 Metropolitan Region
 Problem Regions – Hilly Regions, Tribal Regions
- Unit III** Indicators of Development
 Regional disparities in India
 Need for Regional Planning in India
 Regional Development in India – Problems and Prospects.
- Unit IV** Concept of Multi Level Planning
 Role of Panchayati Raj Institutions in Rural Development
 Defining Development and Rural Development: Gandhian approach to rural development
- Unit V** Area Based Approach to Rural Development: Drought Prone Area Programme: PMGSY
 Target Group Approach: SJSY, MGNREGA, Jan Dhan Yojana and PURA
 Provision of Services- Physical and Socio-Economic Access to Elementary Education and Primary Health Care and Micro Credit


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Selected Readings

1. Bhatt, L.S., 1973, Regional Planning in India. Statistical Publishing Society, Calcutta.
2. Chandana, R.C., 2000, Regional Planning, Kalyani Publishers Ludhiana.
3. Chand, M., Puri, & V.K., 1983, Regional Planning in India, Allied Publishers, New Delhi.
4. Friedman, J., & Alonso, W., 1967 Regional Development and Planning-A Reader. MIT Press, Cambridge Mass.
5. Glasson, 1980, Regional Planning, Hutchinson, London.
6. Glikson, A., 1955, Regional and Development, Netherlands, Universities Foundation of International Corp. London.
7. Mishra, R.P., 1969, Regional Planning Concepts, Techniques and Policies, University of Mysore, Mysore.
8. Mishra R.P. et.al., 1974, Regional Development and Planning in India, Institute of Development Studies, Mysore.
9. Rao, V.L.B., 1960, Regional Planning, Asia Publishing House, New Delhi.
10. Kant Surya et.al (eds): Reinventing Regional Development, Rawat Publication, Jaipur and N.Delhi.
11. श्रीवास्तव शर्मा एवं चौहान-प्रादेशिक नियोजन एवं संतुलित विकास
12. Singh, K., Rural Development, SAGE

Code - GEO – M 202 (Core Course-06)

Environment and Disaster Management (5 Credits)

Time: 3 Hours (ESE)

Full Marks: 100

ESE : 70 Marks

CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

Part – A

Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit) 10 x 2 = 20 marks

Part-B

Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) 4 x 5 = 20 marks

Part – C

Five long answer Questions -Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit) 3 x 10 = 30 marks

Unit I

Meaning and Scope of Environmental Geography, Environmentalism

Ecology and Dynamics of Ecosystem

Types of Ecosystem – Marine and Terrestrial

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- Unit II** Environmental Degradation: Causes and Effects
 Pollution – Air Pollution
 Water Pollution
 Soil Pollution
- Unit III** Global Warming – Causes and effects
 Sea – level changes
 Ozone depletion
 Climatic changes
- Unit IV** Environmental Hazards and Disasters: Flood and Droughts in India;
 International Environmental Treaties: The Stockholm Conference, Earth Summit,
 Kyoto Conference
 National Action Plan on Climate Change in India
- Unit V** Disaster – Man-made disasters, their types – Technological and Industrial Disasters.
 Man-made disasters – Examples from India
 Mapping the Disasters

CIA 30 Marks

Selected Readings:

1. Gaur, S., and Chandrashekhar, T., 2006, Global Environmental Crisis, Book Enclave, Jaipur.
2. Chandna, R.C., 1998, Environmental Awareness, Kalyani Publishers, New Delhi.
3. Gupta, P.D., 2003, Environmental Issues for the 21st Century, Mittal Publications, New Delhi.
4. Morris, D., Freeland, J., Hinchliff, S., Smith, S. (ed.), 2003, Changing Environments, Pd. John Wiley and Sons Ltd., The Open University, U.K.
5. Park, C.C., 1980, Ecology and Environmental Management, Butterworths, London.
6. Radha, S., and Sankhyan, A.S., (ed.), 2004, Environmental Challenges of the 21st Century, Deep Publications, New Delhi.
7. Rasure, K.A., 2007, Environment and Sustainable Development, Serials Publications, New Delhi.
8. Saxena, H.M., 2006, Environmental Studies, Rawat Publications, Jaipur.
9. Singh, S., 1991, Environmental Geography, Prayag Publication, Allahabad.
10. Strahler, A.N., and Strahler, A.M., 1997, Geography and Man's Environment, John Wiley and Sons, New York.
11. Taj, B., Murphy, P. and Rana, P.S., 2007, Environmental Impact Assessment, An Indo – Australian Perspective, Bookwell New Delhi.
12. Verma, S. B. and Shiva, K.S.,(ed.), 2005, Environmental Protection and Development, Deep Publications, New Delhi.
13. Government of India. (1997) Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.
14. Kapur, A. (2010) Vulnerable India: A Geographical Study of Disasters, Sage Pub. , New Delhi.
15. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
16. Singh, R.B. (2005) Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi.

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17. Singh, R. B. (ed.), (2006) Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.
18. Sinha, A. (2001). Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.
19. Stoltman, J.P. et al, (2004) International Perspectives on Natural Disasters, Kluwer Academic Publications, Dordrecht.
20. Singh Jagbir (2007) "Disaster Management Future Challenges and Opportunities". 2007. Publisher- I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India.

Code - GEO – M 203 (Core Course-07)
Resource and Economic Geography (5 Credits)

Time: 3 Hours (ESE)

Full Marks: 100
 ESE : 70 Marks
 CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

Part – A

Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit) 10 x 2 = 20 marks

Part-B

Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) 4 x5 = 20 marks

Part – C

Five long answer Questions -Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit) 3 x10 = 30 marks

Unit I

Meaning and Scope of Economic Geography.
 Conservation and Management of Resources with special reference to:
 (a) Water Resources
 (b) Biotic Resources
 Conventional Energy Resources: Coal, Petroleum, their Distribution, Production and Conservation
 Non-Conventional Energy Resources and their Management.

Unit II

Weber's Model and Smith's Model of Industrial location
 Iron and Steel Industry of the World with special reference to China and India
 Petro-Chemical Complexes with Reference to India

Unit III

Distribution and production of some minerals in the World: Iron Ore, Copper ore and Atomic minerals
 Industrial regions of USA and Japan
 Inter-regional and intra-regional trade

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Unit IV Agricultural Regions of the World
Von Thunen's Model of Agricultural Location
Food Production, Problems and Food Security

Unit V World Trade Theories and Pattern
Impact of Globalization on World Economy
Role of WTO in World Trade
Concept of Export Processing Zone and SEZ (Special Economic Zone)

CIA 30 marks

Selected Readings:

1. Alexander, J. W. & Hartshorne, T. A. (1995): Economic Geography.
2. HussainMajid, Economic Geography
3. Guha, J. L. &Chattoraj, P. R. (1998): A New Approach to Economic Geography: A Study of Resources
4. Singh, J &Dhillon, S. S. (1984) Agricultural Geography. New Delhi, Tata McGraw Hills.
5. Boesch, H., A Geography of world Economy.
6. Brian, J.L., Berry et al., The Geography of Economic Systems.
7. Barlow, M.H. & R.G. Newton., Patterns and Processes in Man's Economic Environment.
8. Chisholm, M., Geography and Economics.
9. Jones, C.F., Economic Geography.
10. Grigg, D.B., Agricultural Systems of the World: An Evolutionary.
11. Lloyd, P. & P. Dickens., Location in Space; A Theoretical Approach to Eco. Geo.
12. Strahler, A.N. & A. Strahler., Geography and Man's Environment.
13. Thoman, R.S. & E.C. Conkling., The Geography of Economic Activity.
14. Thoman, R., " Econ.Geog." in International Encyclopaedia of S.Science.
15. Miller, E. & E. Willard., A Geography of Manufacturing.
16. Mc. Carty, H. & J.B.Lindberg., A preface to Economic Geography.
17. Von Royen, W., Fundamentals of Economic Geography.
18. William Von Royen, et. al., Fundamentals of Economic Geography.
19. Zimmerman, E.W., World Resources and Industries.
20. Hartshon, T.A., Economic Geography.
21. Majid Husain, Economic Geography

**Code - GEO – M 204 (Core Course-08)
Geography of India (5 Credits)**

Time: 3 Hours (ESE)

Full Marks: 100

ESE : 70 Marks

CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

Part – A

Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit) 10 x 2 = 20 marks

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Part-B

Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) 4 x5 = 20 marks

Part – C

Five long answer Questions -Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit) 3 x10 = 30 marks

Unit I India – Relief and Structure: Peninsular and Himalayan Drainage
Origin and Mechanism of Indian Monsoon
Soils of India: Their types, Soil Erosion and Conservation

Unit II Forest Resources in India
Sources of Power: Coal, Petroleum and Hydro-electricity,
Non Conventional Sources of Energy

Unit III Industrial Regions of India
Industrial Policy of India: Concentration and Dispersal
Agricultural Revolutions in India – Green, Blue, Yellow and White

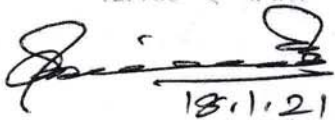
Unit IV Human Resources and Social well being: Social well- being and its indicators
Human Development Index (HDI)
Cultural Regions of India

Unit V Spatial distribution of Tribes, Major Linguistic Groups and Ethnicity, Social and Gender inequality in India

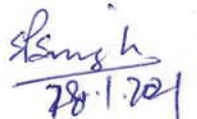
CIA 30 Marks

Selected Readings:

1. Spate O. H. K. & Learmont- Geography of India & Pakistan
2. Ramamoorthy & Gopal Krishnam - Geography of India
3. Singh, Gopal - Geography of India
4. Singh, Jagdish - INDIA: A Comprehensive Systematic Geography
5. Puri, G.S., Indian forest Ecology, New Delhi.
6. Ray Chaudhary, S.P. Land and soil, New Delhi
7. Krishnan, M.S., Geology of India and Burma
8. Das, P.K., The Monsoon, New Delhi
9. Wadia, D.N., Geology of India, London.
10. चतुर्भुज ममोरिया - भारतका भूगोल
11. चौहान बी० एम० एवं गौतम अलका - भारत: A Geography of India
12. सिंह ए गोपाल - भारतका भूगोल


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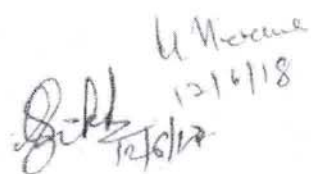
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Code - GEO – M 205 (Practical) (Core Course-09)
Cartographic Techniques (5 Credits)

Time: 3 Hours (ESE)

Full Marks: 100
 ESE : 70 Marks
 CIA : 30 Marks

In the End Semester Examination questions will be set preferably from each unit out of which candidates are required to answer any three questions.

Each Question will carry 20 marks. (20 × 3 = 60 marks)

Practical record and viva voce will comprise 10 marks

- Unit I** Cartograms: Hypsographic, Climographic and Altimetric Frequency Curve
- Unit II** Relief Profiles: Serial, Superimposed, Composite and Projected
Slope Analysis by: Smith, Henry and Wentworth Methods
- Unit III** Map Projections: Mercator's, Sinusoidal, Gall's and International Projection
- Unit IV** Interpretations of Aerial Photographs, Satellite Imagery
Geological section and Interpretation of Geological Maps
- Unit V** Practical Record and Viva-Voce
- CIA**30 Marks

Selected Readings:

1. Monkhouse and Wilkinson - Maps and Diagrams
2. Mahmood, Aslam, "Statistical Methods for Geographical Studies"
3. Campbell, J., Introductory Cartography, Prentice Hall, Inc., Englewood Cliff, New Jersey, 1984.
4. Cuff, D.J., & Mattson, M.T., Thematic Maps, their Design and Production, Methuen, New York., 1982.
5. Robinson, A.H. & others., Elements of Cartography, John Willey and Sons, New York (New edition).
6. Archer, J.E., & Dalton, T.H., Fieldwork in Geography, London.
7. National Atlas and Thematic Maps Organization (NATMO): National Atlas of India, Calcutta.
8. Monkhouse, F.J., Maps and Diagrams, Methuen & Co., London, 1967.
9. Singh and Singh - Practical Geography
10. Spurr S.H., Photogrammetry & Photo Interpretation, New Delhi., 1960.
11. Stersheu, A.I., Aerial Photography.
12. Tomar, M.A. & Maslakar, A.R., Aerial Photographs in Landuse & Forest Survey, Dehra- Dun,
13. Thomas, E.A., Interpretation of Aerial Photographs, Minnesota.
14. Usill, G.W. (Revised by Hearn, G.S.G) Pract. Surveying, London, 1960.
15. White, L.P., Aerial Photography & Remote Sensing for Soil Survey.

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16. Campbell, James, B., Introduction to Remote Sensing- 2nd Edi. Taylor & Francis, London
17. Platt and Charliner – Simple Geological Structures
18. डा० जे० पी० शर्मा-प्रयोगात्मकभूगोल की रूपरेखा
19. डा० पी० आर० चौहान-प्रयोगात्मकभूगोल
20. डा० चतुर्भुजमामोरिया एवं अंदांमलजैन-मानचित्रांकन एवं प्रायोगिकभूगोल
21. डा० हीरालाल-प्रयोगात्मकभूगोल
22. डा० एम० एम० पी० सिन्हा एवं डा० सीमाबाला-उच्चकार्टोग्राफी
23. सिंह जगदीस और बी. पी. राव – भौमिकीय मानचित्रों की रूपरेखा

M. A. GEOGRAPHY (SEMESTER – III)

Code - GEO – M 301 (Core Course-10)

Quantitative Techniques and Research Methodology (5 Credits)

Time: 3 Hours (ESE)

Full Marks: 100

ESE : 70 Marks

CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

Part – A

Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit) 10 x 2 = 20 marks

Part-B

Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) 4 x5 = 20 marks

Part – C

Five long answer Questions -Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit) 3 x10 = 30 marks

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|----------|--|
| Unit I | Quantitative Methods in Geography: Merits and limitations, Research types and Methodology, Research Problems and Research Design, Review of Literature |
| Unit II | Data collection and classification, Questionnaire and Schedules, Sampling Types – Random, Stratified and Purposive. |
| Unit III | Hypothesis: Concept and Types, Procedure for Hypothesis Testing, Chi-Square Test, Student's 't' Test |
| Unit IV | Correlation Coefficient Techniques-Pearson and Spearman, Simple Linear Regression Analysis, Analysis of Variance (ANOVA), Multivariate Analysis-Importance and its Application |

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Unit V Models and Analogue, Types of Model, Gravity Potential Model, Population Potential Model

CIA 30 Marks

Note: Use of MS-EXCEL shall be promoted during the classroom teaching

Selected Readings:

1. Mahmood, Aslam, "Statistical Methods for Geographical Studies"
2. Koshari, K. C., "Research Methodology in Social Sciences"
3. Suleman, M., Research Techniques and Methods in Social Sciences
4. Adhikari, S. (2005): Fundamentals of Geographical Thought, Allahabad
5. Chorley, R. J. & Haggett, P. (ed.) (1967): Models in Geography, London
6. Hartshorne, R. (1994 Indian Print): The Nature of Geography, Jaipur, Rawat Publication
7. Harvey: Explanation in Geography
8. Kaushik D., S. D. (2001) Bhougolik chintan aur Vidhitantra (Hindi)
9. Hammond / Mc Cullah., Quantitative Techniques in Geography, Oxford, 1974.
10. Gregory, S., Statistical Method for Geography, Longman, 1975.
11. Berry, B.J.L., & Marble, D.F., Spatial Analysis: A Reader in Statistical Geography, New Jersey, 1968.
12. Cole, J.P., & King, C.A.M., Quantitative Methods in Geography, New York, 1968.
13. King, L.J., Statistical Analysis in Geography, New Jersey.
14. Johnson, R.J., Multivariate Statistical Analysis in Geography, 1978.
15. Elhance, D.N., Elementary Statistics.
16. Pal, S.K., Statistical Methods in Geography.
17. Alvi, Zamiruddin., Statistical Geography.

Code - GEO – M 302 (Core Course-11)

Remote Sensing and Geographical Information System (5 Credits)

Time: 3 Hours (ESE)

Full Marks: 100

ESE : 70 Marks

CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

Part – A

Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit) $10 \times 2 = 20$ marks

Part-B

Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) $4 \times 5 = 20$ marks

Part – C


Five long answer Questions - Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit) $3 \times 10 = 30$ marks


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Unit I	Meaning and Definition of Remote Sensing, Historical Development, Significance and Utility of Remote Sensing in Geography.
Unit II	Remote Sensing Platforms, Geo-Stationary and Sun-Synchronous Satellites: LANDSAT, IRS, and QUICK- BIRD Series.
Unit III	Sensors and Resolution, Interpretation of Aerial Photographs and Satellite Imagery, Digital Elevation Model (DEM)
Unit IV	Concept and Principles of GIS, Elements of GIS, Nature and Source of Data, Projection and Georeferencing, Digital cartography.
Unit V	Raster Vs. Vector Data structure, G.P.S.:- Concept and Applications, Application of Remote Sensing and GIS : Land Information System, Urban Management and Disaster Management.
CIA 30 marks

Selected Readings:

1. Avery, T. E. (1962): Interpretation of aerial photograph. Minneapolis.
2. Dury, G. M. (1952): Map Interpretation
3. Cunan, R. J. (1985): Principles of Remote Sensing.
4. Lillesand, T. M. & Kiefer, R. W. (1979): Remote Sensing and Image Interpretation. New York.
5. Sabins, F. F. (1997): Remote Sensing and Interpretation. New York.
6. Campbell, J. B. Introduction to Remote Sensing, London.
7. Fraser Taylor, D. R. (1991): Geographical Information System, London.
8. DevidattChauniyal, SudoorSamvedanevambBhaugolikSoochnaPranali.
9. Siddiqui. An Introduction to Geographical Information System.
10. American Society of Photogrammetry: Manual of Photographic Interpretation , Banta Pub. Co., Wisconsin, 1960.
11. Barrett, E.C. & Curtis, L.F., Introduction of Environ. Remote Sensing, 1976.
12. Hord, R.M., Remote Sensing: Methods and Applications, N.Y., 1986.
13. Lender, D.R., Aerial Photographic, Mc Graw Hill, N.Y., 1960.
14. Luder, D., Aerial Photography Interpretation: Princ. and Appl., McGraw Hill, New York., 1959.
15. Lilles & Kiefer, Remote Sensing & Image Interpretation.
16. Reeves, R.G.(Ed.) Manual of Remote Sensing (Vol.2), Virginia, 1975.
17. Smith, H.T.V., Aerial Photographs & their Applications, New York, 1943.
18. Spurs S.H., Photogrammetry & Photo Interpretation, New Delhi., 1960.
19. Stersheew, A.L., Aerial Photography.
20. Tomar, M.A. & Maslakar, A.R., Aerial Photographs in Landuse & Forest Survey, Dehra-Dun.
21. Thomas, E.A., Interpretation of Aerial Photographs, Minnesota.
22. Usill, G.W. (Revised by Hearn, G.S.G) Pract. Surveying, London, 1960.
23. White, L.P., Aerial Photography & Remote Sensing for Soil Survey.

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Code - GEO – M 303 (Core Course-12)
Human and Social Geography (5 Credits)

Time: 3 Hours (ESE)

Full Marks: 100

ESE : 70 Marks

CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

Part – A

Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit) 10 x 2 = 20 marks

Part-B

Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) 4 x5 = 20 marks

Part – C

Five long answer Questions -Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit) 3 x10 = 30 marks

Unit I

Meaning, Definition and Scope of Human Geography
Approaches to Human Geography, Critical Human Geography
Growth, Distribution and Density of World's Population
Migration: Causes and Consequences

Unit II

Human Settlement: Types and Patterns of Rural Settlements,
Processes and Pattern of Urbanization in the World. (Urbanization and Related problems)
Age and Sex Composition of the World Population
Occupational Structure of the World Population

Unit III

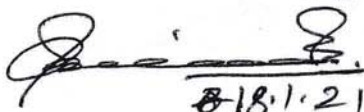
Meaning and Scope of Social Geography
Cultural Evolution of Man
Major Human Races in the World- Negroid, Mongoloid, Caucasoid
Major World Religions: Their Origin, Diffusion and Spatial Distribution.
Major World Languages: Their Origin, Diffusion and Spatial Distribution.


Unit IV

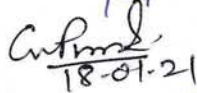
Concept of Social Justice and Social Well-being.
Social Structure, Process and Social Pattern.
Components of Quality of Life and its Spatial Pattern
Globalization and Social Transformation.

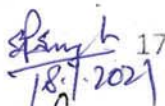
Unit V

Recent Changes in Urban and Rural Social Life in India.
Panchayati Raj Institution and Social Transformation in India.
Social Ecology and Social Media in India

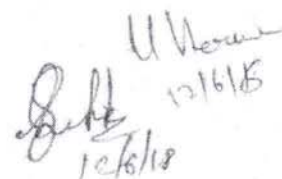

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30 Marks

Selected Readings:

1. An Introduction to Social Geography, Emery Jones and John Eyles
2. Cultural Geography – Mike Crang
3. Sociology and Social Anthropology – M. S. Goal
4. Social Geography – A. Ahmad
5. Social Geography – Majid Husain
6. Social Geography – Ruth Panelli
7. Rural Sociology in India – A. R. Desai
8. Readings in Social Geography – Emery Jones
9. Human Geography – Paul. L. Knox, S. A. Marston
10. International Encyclopedia of Geography, Vol. VIII (Social Geography) – Subhash Mehtani, Amarjit Sinha, Common Wealth Publication Pvt. Ltd., New Delhi
11. Cultural Geography: Form & Process – Neelam Grover and Kashi Nath Singh, Concept Publishing Company, Delhi
12. Social Geography of India – Ashok Kumar, Anmol Publications, New Delhi
13. सांस्कृतिक भूगोल – श्रीकान्तदीक्षित एवं रामदेव त्रिपाठी, वसुधराप्रकाशन, गोरखपुर
14. सामाजिक भूगोल – डॉ० एस० डी० मोर्य
15. सांस्कृतिक भूगोल – इन्दिरा सिंह, युनिवर्सिटीपब्लिकेशन, नयीदिल्ली
16. सांस्कृतिक भूगोल – गायत्री प्रसाद

Code - GEO – M 304 (Core Course-13)
Land use and Agriculture Geography (5 Credits)

Time: 3 Hours (ESE)

Full Marks: 100

ESE : 70 Marks

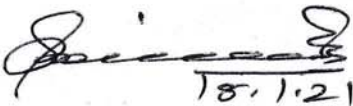
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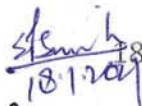
The questions for End Semester Examination Comprises of three parts as mentioned below

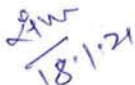
Part – A

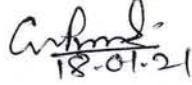
Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit)

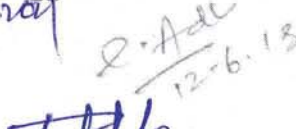
10 x 2 = 20 marks

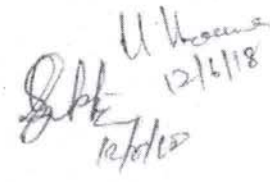

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Part-B

Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) 4 x5 = 20 marks

Part – C

Five long answer Questions -Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit) 3 x10 = 30 marks

Unit I Meaning and Scope of Landuse and Agricultural Geography
History of Landuse survey
Model of Landuse : Von Thunen, Jonassan
Major Land Reforms in India

Unit II Landuse classification: U. K. and India
Landuse pattern in India
Land capability classification
Planning of Landuse in India

Unit III Fundamental concept of Agriculture Geography
History of Agriculture Geography
Factors influencing Agricultural Pattern
Agricultural Systems of the world

Unit IV Concept and Techniques of delimitation of agricultural regions
Measurement of Agricultural productivity and efficiency
Crop-combination and diversification
Cropping pattern in India

Unit V New Agricultural Technology
Green Revolution and White Revolution in India
Agro-climatic regions of India
Agricultural problems and policies

CIA 30 Marks

Selected Readings:

1. Hussain, Majid – Agriculture Geography
2. Singh J. & Dhillon, S. S. – Agriculture Geography
3. B. S. Negi – Krishi Bhugol
4. Sharma, B. L. – Krishi Bhugol
5. Wrigley – Tropical Agriculture
6. Ali Mohammad – Studies in Agriculture Geography
7. Krishna, D. – The New Agricultural Strategy

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8. Dutta and Sundaram–Indian Economy
9. Kumar, Pramila and Sharma, S.K. : Krishi Bhoogol
10. Smith, T.P. Bayliss: The Ecology of Agricultural Systems
11. Morgan, W.B. and Norton J.C.: Agricultural Geography
12. Singh, B.B.: Krishi Bhoogol
13. Symons, L: Agricultural Geography
14. Shafi. M: Agricultural Geography
15. Tiwari, R.C. and Singh, B.N.: Krishi Bhoogol

Code - GEO – M 305 (Practical) (Core Course-14)
Instrumental Surveying, GIS and GPS (5 Credits)

Time: 3 Hours (ESE)

Full Marks: 100
 ESE : 70 Marks
 CIA : 30 Marks

In the End Semester Examination questions will be set preferably from each unit out of which candidates are required to answer any three questions.

Each Question will carry 20 marks. (20×3=60 marks)

Practical record and viva voce will comprise 10 marks

Unit I	Survey by Levelling instrument Finding out Rise and Fall Plotting of Longitudinal Profile
Unit II	Theodolite Survey: Formation and Calculation of Triangles Preparation of Ground plan and Ground Profiles Measurement of Base line and its extension Formation of Polygon
Unit III	Georeferencing using GIS Map Registration using GIS
Unit IV	Digitisation and Map Preparation using GIS Surveying through hand held GPS
Unit V	Practical Record and Viva-Voce
CIA30 Marks

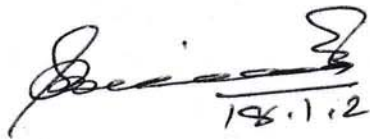
Note: Departments are requested to introduce open source software like Q GIS

Selected Readings:

1. M. M. P. Sinha & Seema Bala– Advanced Cartography (mPpdkVksZxzkQh)
2. Kanetkar – Surveying and leveling Vol. I & II

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3. Punamia- Surveying Vol. I, II & III
4. J. P. Sharma – प्रयोगात्मक भूगोल की रूपरेखा
5. Punmia, B.C., Surveying and Leveling, Vol I.
6. Alvi, Zamiruddin, A Text Book of Surveying
7. Basak, N.N. 2017. Surveying and Levelling, 2nd ed, McGraw Hill Education.
8. Bolton. T. 2009 (reprint). Geological Maps: Their Solution and Interpretation, Cambridge Univ. Press.
9. Kanetkar, T.P., Kulkatni, S.V. 1988. Surveying and Levelling, Part I, Pune Vidyarthi Griha Prakashan.
10. Monkhouse, F.J., Wilkinson, H.R. 1971. Maps and Diagrams
11. Robinson, A.H., Morrison, J.L., Phillip, C.M., Kimerling, A.J., Guptill, S.C. 1995. Elements of Cartography, 6th ed, Wiley.
12. Sarkar, A. 2015. Practical Geography: A Systematic Approach, 3rd ed, Orient Blackswan Private Ltd.
13. Singh, R.L., Singh, R.P.B. 2008. Elements of Practical Geography, Kalyani Publishers.
14. Siddiqui, An Introduction to Geographical Information System
15. Tomlin, C.D. , GIS and Cartographic Modelling , Prentice Hall


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 S. Kumar
 18.1.2021
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 Anand
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 12.6.18


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U. K. S.
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M. A. GEOGRAPHY (SEMESTER – IV)
Code - GEO – M 401 A (Elective Course-01)
Urban Geography (5 Credits)

Time: 3 Hours (ESE)

Full Marks: 100
ESE : 70 Marks
CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

Part – A

Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit) 10 x 2 = 20 marks

Part-B

Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) 4 x5 = 20 marks

Part – C

Five long answer Questions -Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit) 3 x10 = 30 marks

Unit – I Definition and Scope of urban geography, Development of urban geography in India
Urban ecology and Urban System
Basis of urban functions and functional classification of towns

Unit II Rank-Size Rule and Primate City
Urban hierarchy
Million Cities and Mega Cities
Concept of Megalopolis and Metropolitan regions

Unit III Concept of urban morphology
Theories of urban landuse – Burgess, Hoyt, Harris and Ullman
Concept and characteristic of CBD
Conurbation, Urban Agglomeration in context of India

Unit IV Trend of Urbanization in India and the World
Concept of City region
Concept of Umland
Rural urban fringe

Unit V Urban problems with reference to slums
Urban poverty
Urban planning policies in India
Smart city concept

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Selected Readings:

1. Carter, H. (1972) The Study of Urban Geography, Arnold Heinemann
2. Geddes, P. (1968) Cities in Evolution, Benn Publisher.
3. Hall, P. (1992) Urban & Regional Planning, Routledge, London
4. Johnson, J. (1972) Urban Geography: An introductory Analysis, Germ Area
5. Mayer & Kohn (1959) Readings in Urban Geography, Chicago Area
6. Scott, J A. (2001) Global city Region, Oxford University area, U.K.
7. Sinha M. M. P. & Seema Bala: Nagariya Bhoogol (Hindi)
8. Bansal: Nagariya Bhoogol (Hindi)
9. Alam, S.M., Hyderabad-secundarabad Twin Cities, Asia Publishing House, Bombay.
10. Berry; B.J.L and Horton, F.F., 'Geographic perspectives on Urban Systems, Prentice Hall, Englewood Cliff, New Jersey, 1970.
11. Beaujeu Garnier, J., Chabot, G., Urban Geography, London, 1969.
12. Dickinson, R.E., 1964., City and Region, Routledge, London.
13. Gibbs, J.P., Urban Research Methods, New Jersey, 1961

**Code - GEO – M 401 B (Elective Course-01)
Political Geography (5 Credits)**

Time: 3 Hours (ESE)

Full Marks: 100

ESE : 70 Marks

CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

Part – A

Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit) 10 x 2 = 20 marks

Part-B

Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) 4 x 5 = 20 marks

Part – C

Five long answer Questions -Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit) 3 x 10 = 30 marks

Unit – I

Meaning and scope of Political Geography;

Approaches to Political Geography: Functional and Unified Field Theory Approaches
Geopolitics; Classical Geopolitics and Critical Geopolitics

Unit- II

Geopolitical World Order: Origin and Cessation of cold war;

Global Strategic Views: H. J. Mackinder, N G Spykman,

Geopolitics of Asia-Pacific

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Part – A

Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit) 10 x 2 = 20 marks

Part-B

Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) 4 x 5 = 20 marks

Part – C

Five long answer Questions -Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit) 3 x 10 = 30 marks

- Unit I** Historical Account of Bihar as a State, Geological Formation and Landforms, Physiographic Divisions, Drainage, Soils, River Valley Projects: Gandak, Kosi and Sone
- Unit II** Climate: Regional Variation in Rainfall and Temperature, Seasonal Variation of Rainfall and Temperature
Flood and Drought Prone Areas, Wet Land Areas
- Unit III** Landuse and Agriculture: Landuse Pattern, Agricultural Infrastructure, Agricultural Seasons, Food Crop, Cash Crop, Development and Prospect of Horticulture, Aquaculture, Floriculture, Herbal Plants, Pisciculture, Agricultural Regions
- Unit IV** Industries: Agro Based Industries, Small and Cottage Industries, Prospects of Food and Fruit Processing Industries, Industrial Regions
- Unit V** Population and Settlement: Population Attributes- Growth, Distribution, Occupation, Age and Sex Ratio, Evolution of Settlement: Types and Pattern, Morphological Features, Rural Dwellers

CIA – 30

Selected Readings:

1. M.S. Pandey- Historical Geography and Topography of Bihar
2. Ahmed, E. – Bihar- Physical, Economic and Regional Geography
3. Sinha, VNP and Nazim Md.- Bihar:Land and People
4. Sharma, N. – Bihar Ka Bhugol (Hindi)

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- Unit III** Indicators of Development
Regional disparities in India
Need for Regional Planning in India
Regional Development in India – Problems and Prospects.
- Unit IV** Concept of Multi Level Planning
Role of Panchayati Raj Institutions in Rural Development
Defining Development and Rural Development; Gandhian approach to rural development
- Unit V** Area Based Approach to Rural Development: Drought Prone Area Programme, PMGSY
Target Group Approach: SJSY, MGNREGA, Jan Dhan Yojana and PURA
Provision of Services- Physical and Socio-Economic Access to Elementary Education and Primary Health Care and Micro Credit

CIA 30 marks

Selected Readings

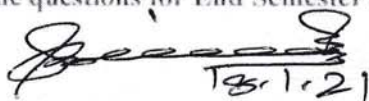
13. Bhatt, L.S., 1973, Regional Planning in India, Statistical Publishing Society, Calcutta.
14. Chandana, R.C., 2000, Regional Planning, Kalyani Publishers Ludhiana.
15. Chand, M., Puri, & V.K., 1983, Regional Planning in India, Allied Publishers, New Delhi.
16. Friedman, J., & Alonso, W., 1967 Regional Development and Planning-A Reader, MIT Press, Cambridge Mass.
17. Glasson, 1980, Regional Planning, Hutchinson, London.
18. Glikson, A., 1955, Regional and Development, Netherlands, Universities Foundation of International Corp, London.
19. Mishra, R.P., 1969, Regional Planning Concepts, Techniques and Policies, University of Mysore, Mysore.
20. Mishra R.P, et.al., 1974, Regional Development and Planning in India, Institute of Development Studies, Mysore.
21. Rao, V.L.B., 1960, Regional Planning, Asia Publishing House, New Delhi.
22. Kant Surya et.al (eds): Reinventing Regional Development, Rawat Publication, Jaipur and N.Delhi.
23. श्रीवास्तव शर्मा एवं चौहान-प्रादेशिक नियोजन एवं संतुलित विकास
24. Singh, K., Rural Development, SAGE

Code- Generic Course-GE-01 Geography of Bihar (5 Credits)

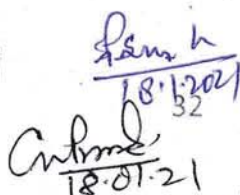
Time: 3 Hours (ESE)

Full Marks: 100
ESE : 70 Marks
CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

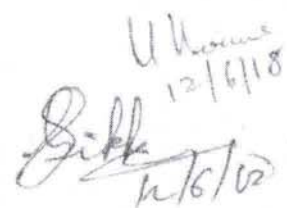

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Unit III Selection of sampling site, defining sampling size, and conducting socio-economic survey at households level with a self- structured questionnaire and supplementing the information by personal observations and perceptions.

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

CIA 30 Marks

Selected Readings

1. Gregory, S. 1980. Statistical methods and the Geographer. Longman, London
2. Mahmood, A. 2008. Statistical Methods in Geographical Studies. Rajesh Pub., New Delhi.
3. Ibrahim, R. 1992. Socio-Economic Profile of Mewat, Radha Publishers. New Delhi.
4. Robinson, A.H., et.al. 1995(6th edition). Elements of Cartography. John Wiley, New York.
5. Raisz, E. 1962. Principles of Cartography. Mc Graw Hill, New York.

**Code- Discipline Specific Elective -DSE-01 (201-CC)
Regional Planning and Rural Development (5 Credits)**

Time: 3 Hours (ESE)

Full Marks: 100

ESE : 70 Marks

CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

Part – A

Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit) 10 x 2 = 20 marks

Part-B

Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) 4 x 5 = 20 marks

Part – C

Five long answer Questions -Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit) 3 x 10 = 30 marks

Unit I Regional Planning: Concept, Merits and Limitation
Planning Process – Sectoral, Temporal and Spatial Dimensions
Concept of Planning Region and Methods for Delineation of Regions

Unit II Special Purpose Planning Regions in India:
River Valley Regions
Metropolitan Region
Problem Regions - Hilly Regions, Tribal Regions

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Selected Readings:

1. F. J. Monkhouse – Maps & Diagrams & H. R. Wilkinson
2. Sinha, M. M. P. & Bala, Seema – Advanced Cartography, Sharda Publication, Allahabad
3. Kanetkar – Surveying and leveling Vol- II
4. Punmia, B. C. – Surveying Part II & III
5. Sarkar, A. - Practical Geography: A Systematic Approach, Orient Blackswan Private Ltd.
6. Singh, R.L. and Singh, R.P.B. - Elements of Practical Geography, Kalyani Publishers, New Delhi
7. Maltiar, K.K. and Maltiar, S.R. – Concept of Cartography, Remote Sensing and G.I.S. – Rajesh Publication, New Delhi
8. Devis, R.E., Foote, F.S. and Kelly, J.W. – Surveying : Theory and Practice
9. Misra, R. P., Singh, R. B., Misra, Brijesh and Pandey, Anupam – Fundamentals of Cartography, Concept Publishing Company Pvt. Ltd., New Delhi
10. Narayan, L.R.A. - Remote Sensing and its Application, Universities Press, Hyderabad
11. Venkatramaiah, C. -Textbook of Surveying, Universities Press, Hyderabad
12. Joseph, George – Fundamentals of Remote Sensing, Universities Press, Hyderabad
13. Fazal, S. - Remote Sensing Basics, Kalyani Publishers, Ludhiana
14. Lillesand, T.M., Kiefer, R.W. and Chipman, J.W. – Remote Sensing and Image Interpretation, Wiley India Pvt. Ltd., New Delhi

GEO –M- 402, Elective Course – 02

TOUR REPORT / Dissertation / Project Work (5 Credits)

~~Full marks-100~~
Full marks-100
ESE- 70
CIA- 30

Students have to prepare a Dissertation / Project work based on Socio-Economic survey.

The topic will be approved by departmental council.

ESE will consist of total of 70 marks, out of which, 45 marks will be on a written test and 25 marks for Viva Voce on dissertation. CIA will comprise of written test, Presentation and brief summary of report.

Students have to submit one copy of dissertation/ Project work report prior to the commencement of the semester examination

Unit I Procurement of a topographic map of 1:50,000 to 1:25,000 scale to study the settlements selected in its regional setting

Unit II Collection of demographic, social & economic data of the village/town from Census Reports to study the temporal changes in the profile of such characteristics.

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5. Misra, R. P. & K. Misra (Ed.) Million Cities of India, Nice Publisher
6. Singh, R. Y. : An Introduction of settlement Geography
7. Ghosh, S. : Settlement Geography
8. Sinha, V.N.P., Verma U., & Sahay A.- Introduction to Settlement Geography

Code- GEO – M 401 F (Elective Course-01)
Advance Cartography (5 Credits)

Time: 3 Hours (ESE)

Full Marks: 100

ESE : 70 Marks

CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

Part – A

Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit) 10 x 2 = 20 marks

Part-B

Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) 4 x5 = 20 marks

Part – C

Five long answer Questions -Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit) 3 x10 = 30 marks

- Unit –I** Brief history of cartography and its present status;
 Fundamentals of computer based cartography and its application;
 Thematic maps –types and their use.
- Unit-II** Mathematical construction and characteristics of the following map projections –
 Conical Equal- Area with one standard parallel (Lambert's V); Gnomonic projection
 (Equatorial Case); Stereographic projection (Equatorial Case); Cassini's Projection
- Unit III** Principles of triangulation Survey; Measurement of base-line in triangulation survey.
 Definition and characteristics of the following astronomical terms – Azimuth, Right
 Ascension, Hour Angle, Star at elongation, Altitude, Declination.
- Unit IV** Brief history and basic principle of Photogrammetry;
 Types and scales of aerial photographs.
 Interpretation of aerial photographs.
- Unit V** Brief history of satellite remote sensing;
 Concept of remote sensing;
 Development of remote sensing in India;
 Elements of the interpretation of satellite imageries.

CIA

30 Marks

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Part – A

Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit) 10 x 2 = 20 marks

Part-B

Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) 4 x5 = 20 marks

Part – C

Five long answer Questions -Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit) 3 x10 = 30 marks

- Unit I** Meaning and Scope of Settlement Geography
 Development of Settlement Geography in India
 Evolution of Settlement in the Middle Ganga Valley
 Types of Rural settlement in India

- Unit II** Old Sites of Settlements and Nomenclature
 Development of Different forms of Rural settlements
 Morphological features of Rural Settlements
 Problems of rural settlements

- Unit III** Rural house types in different geographical environment in India
 Rural – Urban continuum
 Rural Service centres
 Hierarchy of settlements

- Unit IV** Locational and functional features of urban settlements
 Morphological features of Indian cities
 Problems of Indian urban centres
 Problems of slums in India

- Unit V** Planning of Rural settlements
 Planning of urban settlements
 Metropolitan region
 Planned urban centres of India

CIA 30 Marks

Selected Readings:

1. Hopkinson, D. (1989) Geography of Settlement, Oliver & Boyd
2. Hudson, F. S. (1970) Geography of Settlement, Mackold&Erau.
3. Singh, R. L. (Ed.) Rural Settlements in Monsoon Asia
4. Carter, H. (1972) The Study of Urban Geography, Arnold Heinemann

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Five long answer Questions -Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit)

3 x10 = 30 marks

- Unit I** Definition, scope and function of Geology, Principles of correlation, Standard Stratigraphic scale. Indian Stratigraphic scale.
- Unit II** Origin, geographical distribution and lithological characteristics of Dharwar system, Vindhyan system, Gondwana system and Deccan Lava system.
- Unit III** Classification, mode of occurrence and distribution of the following minerals with special reference to India – Iron ore, Mica, Bauxite and Copper
- Unit IV** Classification mode of occurrence and distribution of energy resources in India: Coal, Petroleum, Uranium and Thorium
- Unit V** Rocks and mineral association, form, structure and classification of igneous rocks, Origin and types of sedimentary rocks. Process of metamorphism, Types and characteristics of metamorphic rocks.

CIA

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Selected Readings:

1. Wadia, D. N. – Geology of India
2. Mukharjee, P. K. – Physical Geology
- 3rd D. P. Singh – भारतका भूवैज्ञानिक परिचय
4. Mehar D. N. Wadia – Minerals of India
5. Gokhale and Rao – Minerals of India
6. Platt and Charliner – Simple Geological Structures
- 7th Karna, N. N. – सरल भूवैज्ञानिक संरचनाएँ
- 8th Singh, Jagdish & B. P. Rao – भौमिकीय मानचित्रों की रूपरेखा

**Code- GEO – M 401 E (Elective Course-01)
Settlement Geography (5 Credits)**

Time: 3 Hours (ESE)

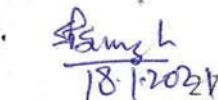
Full Marks: 100

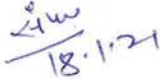
ESE : 70 Marks

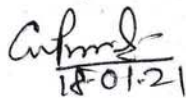
CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

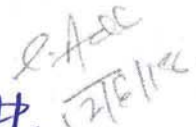

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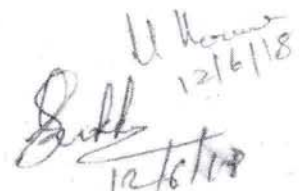

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7. Bhende, A.A. & Kanitkar, (2014), Principles of Population Studies, Himalayan Pub. H., Mumbai.
8. Bogue, D. J., Principles of Demography, New York, 1969.
9. Chandna, R.C., Geography of Population: Concepts Determinants and Pattern, Kalyan Pub. Ludhiana, 2014.
10. Clarke, J.I. Population Geography, Oxford, 1981.
11. Hassan M.I., Population Geography, Rawat Pub. Jaipur, 2008.
12. Jhingan M.L. Bhatt B.K. and Desai, J.N. Demography, Vrid Pub. Delhi, 2006
13. Khullar D.R., India: A comparative Geography, Kalyan Pub. Ludhiana, 2014.
14. Mandal, R.B. Uyanga J and Prasad H., Introductory Methods in Population geography, Concept Pub. Co. New Delhi-2007.
15. Maurya S.D., Population Geography, Pravalika Pub. Allahabad, 2014.
16. Newbold, K.B.- Population Geography: Tools and Issues, Rawat Pub. Jaipur. 2012.
17. Palmore, J.A. and Gardner R.W. Measuring, Mortality, Fertility and Migration: A Self Teaching Guide to Elementary Measures. The East-West Centre, Honolulu, 1987.
18. Poston, Jr D.L. and Bouvier L.F., Population and society: An Introduction to Demography. Cambridge Uni. Press, New York, 2010.
19. Premi M.K. and Das D.N., Population of India 2011, B.R. Pub. Delhi, 2012.
20. Srinivas, K. Basic Demographic Techniques and Applications, Sage Pub. New Delhi, 1998.
21. Trewartha, G.T., A Geography of Population: World Patterns, NY, 1969.

Code- GEO – M 401 D (Elective Course-01)
Geology of India (5 Credits)

Time: 3 Hours (ESE)

Full Marks: 100

ESE : 70 Marks

CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

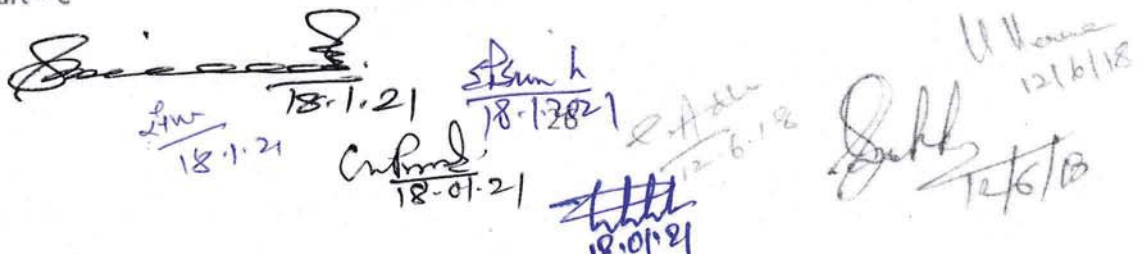
Part – A

Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit) 10 x 2 = 20 marks

Part-B

Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) 4 x5 = 20 marks

Part – C



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Ten objective type Questions - All questions to be answered (Questions shall be selected from the whole syllabus preferably two questions from each unit) 10 x 2 = 20 marks

Part-B

Five short Answer Questions – Four questions to be answered (Questions shall be selected from the whole syllabus preferably one question from each unit) 4 x 5 = 20 marks

Part – C

Five long answer Questions -Three questions to be answered. (Questions shall be selected from the whole syllabus preferably one question from each unit) 3 x 10 = 30 marks


- Unit I** Nature and Scope of Population Geography,
Historical development of Population Geography, Relationship with Demography,
Sources of Population Data: The Census, vital registration and other sources.
- Unit II** Population distribution, growth and determinants: Pre-historic, ancient, medieval and modern period;
Theories of Population Growth: – Malthus, Marx and Demographic Transition
- Unit III** Population Dynamics: Fertility-measurement; Mortality measurement, determinants and distribution; Migration: Brief history, trends and pattern of international migration, migration in India, Indian Diaspora.
- Unit IV** Population Regions: Typology of population regions, Ackerman scheme of population resource region.
Human security - economic, food and health.
- Unit V** Growth and distribution of population in India
Population composition of India
Internal migration in India
Trends of urbanization
Urban problems

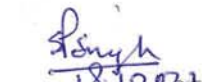
CIA

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Selected Readings:

1. Chandana, R. C. – A Study in Population Geography
2. Ghosh, B. N. – Population Geography
3. Hiralal – Jansankhya Bhoogol
4. Bhende and Kantkar – Population Studies
5. Singh, R. L. – Practical Geography
6. Sharma J. P. Prayogic Bhoogol Ki Rooprekha (Hindi)


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- Unit- III** Concept of Nation and State
 Land-Locked States
 Frontiers and Boundaries
 Maritime Boundaries
- Unit-IV** Changing Political map of India: State re-organization
 Geographical Bases of Indian Federalism
 River water Disputes – International and National
- Unit- V** Sino-Indian Border Dispute
 Kashmir Problem
 Geopolitics of Indian Ocean: Sino Indian Rivalry
 Regionalism in India
 Geopolitical codes of India

CIA - 30

Selected Readings:

1. John R. Stuart (1982) - An Introduction to Political Geography
2. Richard Muir (1995) - Modern Political Geography
3. Bergman K. Edward (1975) - Modern Political Geography
4. Lucie Carlson (1971) - Geography and World Politic
5. S. B. Cohen (1968) - Geography and Politics in a Divided world
6. N. J. G. Pounds (1972) - Political Geography
7. I. M- Alexander (1963) - World Political Systems
8. P. J. Taylor & C. Flint: (2004 India. Ed) - Political Geography
9. R. D. Dikshit (1982) - Political Geography
10. S. Adhikari (1997) - Political Geography
11. B. L. Sukhwal (1985) - Modern Political Geography of India
12. S. Adhikari (2008) - Political Geography of India: A contemporary Perspective.
13. G. Parkar (1998) - Geopolitics: Past, Present and Future.
14. S. K. Dikshit (2006) - Political Geography and Geo- politics
15. Hari Mohan Saxena (2009) - Political Geography
16. S. Adhikari and Ratan Kumar (2010) -Political Geography

**Code - GEO – M 401 C (Elective Course-01)
 Population Geography (5 Credits)**

Time: 3 Hours (ESE)

Full Marks: 100
 ESE : 70 Marks
 CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

Part – A

[Handwritten signatures and dates]
 18-1-21
 18-1-21
 18-01-21
 18-1-21
 18-1-21
 12-6-18
 12/6/18

- Unit- III** Concept of Nation and State
 Land-Locked States
 Frontiers and Boundaries
 Maritime Boundaries
- Unit -IV** Changing Political map of India: State re-organization
 Geographical Bases of Indian Federalism
 River water Disputes – International and National
- Unit- V** Sino-Indian Border Dispute
 Kashmir Problem
 Geopolitics of Indian Ocean: Sino Indian Rivalry
 Regionalism in India
 Geopolitical codes of India

CIA - 30

Selected Readings:

1. John R. Stuart (1982) - An Introduction to Political Geography
2. Richard Muir (1995) - Modern Political Geography
3. Bergman K. Edward (1975) - Modern Political Geography
4. Lucie Carlson (1971) - Geography and World Politic
5. S. B. Cohen (1968) - Geography and Politics in a Divided world
6. N. J. G. Pounds (1972) - Political Geography
7. I. M- Alexander (1963) - World Political Systems
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14. S. K. Dikshit (2006) - Political Geography and Geo- politics
15. Hari Mohan Saxsena (2009) - Political Geography
16. S. Adhikari and Ratan Kumar (2010) -Political Geography

**Code - GEO – M 401 C (Elective Course-01)
 Population Geography (5 Credits)**

Time: 3 Hours (ESE)

Full Marks: 100
 ESE : 70 Marks
 CIA : 30 Marks

The questions for End Semester Examination Comprises of three parts as mentioned below

Part – A

[Handwritten signatures and dates]
 4/18-1-21
 18-1-21
 18-1-21
 18-01-21
 18-01-21
 18-01-21
 12-6-18
 12/6/18

AECC-1

A- Environmental Sustainability (3 Credit)

B- Swachha Bharat Abhiyan Activities (2 Credits)

Each credit requires 10 hours of teaching- learning for theory and 20 hours for practical assignment field work.

A-Unit -1 Environmental ethics & ecosystem: Concept of sustainable development with reference to human values in western and Indian perspective, sustainable development & conservation of natural resources (Nature, factors, structure, development and people participation) development, environment- rural and urban, concept of Ecosystem.

A-Unit -2 Development and its effect on environment: Environment Pollution - water, air, noise etc. due to Urbanisation, Industrial civilization, Concept of Global Warming , Climatic Change, Green House Effect, Acid rain, Ozone layer depletion. Menace of encroachment of exotic plants particularly parthenium and trees with special reference to impact on habit & habitat on indigenous flora & fauna.

A-Unit -3 Concept of Bio-diversity and its conservation: Environmental Degradation and conservation. Govt. Policies, Social effects and role of social reforms in this direction. Role of science in conservation of environment concept of Three 'R' (reduce, reuse, recycle). Need of environmental education and awareness programme and ecological economics.

B-Unit -4 Swachha Bharat Abhiyan: The concept of Swachhata as personal, Gandhian approach towards social and environmental moral values & concept of swachhata and its relation to moral upgradation of society and freedom struggle. Awareness Programme related to Swachhata. Role of 'Swachchagrahis' in Swachha Bharat Abhiyan.

Sanitation and hygiene, why sanitation is needed, sanitation and human rights, plantation, value of nature, concept of community participation and role of state agencies. Case study of Sanitation, effects of cleanliness, diseases - infectious and vector – born Idea of spread of diseases through body and other biological fluids and excreta.

B-Unit-5 Assignment/Practical/field work based on unit-4

or

Alternative to unit-4 and unit-5 a student can also enrol for Swachha Bharat Internship programme of MHRD.

Human Values and Professional Ethics (3 Credits)**Gender Sensitization (2 Credits)**

(One credit requires ten hours of theory and twenty hours of practical/assignment/field work)

Unit – 1: Variety of Moral Issues, Principals of Ethics and Morality:-

Understanding the Harmony in the Society (society being an extension of family), Integrity, Work Ethic, Courage, Empathy, Self Confidence, Professional Ideas and Virtues. Ethics as a Subset of Morality, Ethics and Organizations, Duties and Rights of employees and employers.

Unit – 2: Holistic approach to corporate ethics:-

Vedantic Ethics – Tagore, Vivekanand, Gandhi and Aurobindo on Ethics, Ethics in Finance, Business and Environment. Professional Rights, Intellectual Property Rights, Corporate Responsibility. Social Audit and Ethical Investing, Computer and Ethics.

Unit – 3: Professional Ethics:-

Augmenting Universal Human Order, Characteristics of people-friendly and eco-friendly production, Strategy for Transition from the Present State to Universal Human Order, At the Level of Individual- as Socially and Ecologically Responsible Technologists and Managers, At the Level of Society- as Mutually Enriching Institutions and Organizations. Case studies of typical holistic technologies and management patterns.

Unit – 4: Gender – An Overview:-

Gender: Definition, nature and evolution. culture, tradition, historicity; Gender spectrum: biological, sociological, psychological conditioning; Gender based division of labour – domestic work and use value.

Unit – 5: Gender – Contemporary perspectives

Gender justice and human rights: international perspectives, Gender : constitutional and legal perspectives, media & gender, Gender: emerging issues and challenges.

(5)

GE-111

Generic Elective (GE) course	
Course title: Human Rights	
Course code: GE-1	Credit 5 (There shall be 5 units each consisting of one credit)
Course offered in: Semester- IV	
Course content:	
Unit	Topics
I	Conceptual Aspects of Human Rights a. Meaning and Concept of Human Rights b. Human Rights, Natural Rights, Civil Rights, Political Rights and Legal Rights.
II	Evolution of the Concept of Human Rights a. Magna Carta, The united state declaration of Independence: The French Declaration of the Rights of Man and the Citizen: United state Bill of Rights: Geneva Convention of 1864: Universal declaration of Human Rights, 1948. b. International Bill of Rights, Significance of Universal Declaration of Human Rights International Covenant on Civil and political Rights, International Covenant on Economic, Social and cultural Rights.
III	Diversity, Multiculturalism and Human Rights a. Value of Diversity: Collective Cultural Rights and the Idea of Universal Human Rights: Multiculturalism and Minority Rights: protection and promotion of Human Rights in Multicultural Societies. b. Beyond Universal Human Rights: Universalism of human Rights: Nation-State and the Right to national Self-Determination: state Sovereignty and the Politics of Universal Human rights.
IV	Theoretical aspects of Human rights. a. Theories of Human rights-Liberal Perspective-Locke, Rousseau, J.S. Mill, Marxian Perspective-Marx, Gramsci b. Feminist Perspective of Human Rights.
V	Assignment / Field Work based and Unit I, II, III and IV.

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Ability Enhancement Course (AEC) or Skill Enhancement Course (SEC)	
Course title: : Environmental Law and Policy	
Course code: AEC-1/SEC-1	Credit 5
(there shall be 5 units each consisting of one credit)	
Course offered in: Semester- II	
<p>Course description: Law and policy plays a major role in the conservation and management of natural resources as well as pollution control. This course intends to introduce the students to the vast field of Environmental Law and Policy. The course would be divided into three broad areas. The first part would cover the basic concepts and principles of Environmental Law. This would include judicial precedents, which now forms an essential part of environmental jurisprudence. The second part would be divided into specific introductory modules on forests and wild life including bio-diversity related laws; Air and Water related laws including mega projects and marine laws; and laws relating to hazardous substances. The third part would discuss the role of judiciary including the National Green Tribunal in protecting the environment.</p>	
<p>Course objectives:</p> <ol style="list-style-type: none"> To provide an overview of the law and policies relating to environment both at the national and international level. To critically analyse the implementation of these laws and the role of adjudicatory bodies in the field Of environment. 	
Course content:	
Unit	Topics
I	<p>Introduction: Environment: meaning and components Environment vs Development debates, trigger events, business and environmental law, a brief introduction to SDGs. Introduction to environmental laws in India; Constitutional provisions, an overview of the laws General principles in Environmental law: Precautionary principle; Polluter pays principle; Sustainable development; Public trust doctrine.</p>
II	<p>Forest, Wildlife and Biodiversity related laws: Evolution and Jurisprudence of Forest and Wildlife laws; Colonial forest policies; Forest policies after independence. Statutory framework on Forests, Wildlife and Biodiversity: IFA, 1927; WLPA, 1972; FCA, 1980; Biological Diversity Act, 2002; Forest Rights Act, 2006. Strategies for conservation–Dolphin, Tiger, Elephant, Rhino</p>
III	<p>Air and Water Laws National Water Policy Laws relating to prevention of pollution, access and management of water and institutional mechanism: Water Act, 1974; Water Cess Act, 1977, EPA, 1986. Pollution Control Boards Ground water and law Legal framework on Air pollution: Air Act,1981; EPA, 1986 as amended to date including rules and notifications issued under it.</p>
IV	<p>Environment protection laws and large Projects Legal framework on environment protection-Environment Protection Act as the framework legislation–strength and weaknesses; EIA. Marine laws of India; Coastal zone regulations, Wetland conservation.</p>
V	<p>Judicial remedies and the role of National Green Tribunal Role of judiciary in environmental protection; Infrastructure projects and the Indian judiciary.</p>

Prac
20/06/2018

[Signature]
20/06/2018

(16)

Learning outcomes:

On completion of this course, the students would:

1. Have a strong foundation to undertake specialized courses in the field of environmental laws and policy
2. Develop an inter-disciplinary approach to the issues relating to environment.

Assignments:

1. Environmental laws in India
2. Evolution and Jurisprudence of Forest and Wildlife laws
3. Legal framework on Air pollution
4. Biological Diversity law
5. Role of judiciary in environmental protection
6. Air Laws
7. Water Laws
8. Wetland conservation etc.