

**APPLICABILITY OF REGULATIONS FOR THE TIME
BEING IN FORCE**

Notwithstanding the integrated nature of a course spread over more than one academic year, the regulations in force at the time a student joins a course shall hold good only for the examinations held during or at the end of the academic year. Nothing in these regulations shall be deemed to debar the University from amending the regulations subsequently and the amended regulations, if any, shall apply to all students whether old or new.

PANJAB UNIVERSITY, CHANDIGARH

OUTLINES OF TESTS, SYLLABI AND COURSES OF READING IN THE SUBJECT OF
GEOGRAPHY FOR M.A. (SEMESTER SYSTEM) EXAMINATION 2011-2012.

SEMESTER-I (*for the examination of November/December, 2011*)

	<i>Title</i>	<i>Marks</i>	<i>Credits</i>
Paper-I	: Geographic Thought	100	4
Paper-II	: Geomorphology	100	4
Paper-III	: Cartography (Theory and Practical)	100	4
Paper-IV	: <i>Any one of the following optional courses:</i>		
	Fundamentals of Population Geography	100	4
	Fundamentals of Agricultural Geography	100	4
	Political Geography	100	4
	Geographical Perspectives on Sustainable Development	100	4

(ii)

SEMESTER-III (for the examination of November/December, 2011)

	<i>Title</i>	<i>Marks</i>	<i>Credits</i>
Paper-I	: Town and Country Planning	100	4
Paper-II	: Research Methodology in Geography	100	4
Paper-III	: Fundamentals of GIS and GPS (Theory and Practical)	100	4
Paper-IV	: <i>Any one of the following optional courses:</i>		
Option (i)	: Regional Development and Planning in India	100	4
Option (ii)	: Special Themes in Agricultural Geography	100	4
Option (iii)	: Bio Geography	100	4
Option (iv)	: Social Geography	100	4
Option (v)	: Political Geography of India	100	4
Option (vi)	: Applied Climatology	100	4
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		Total :	400
			16

**OUTLINES OF TESTS, SYLLABI AND COURSES OF READING FOR M.A. GEOGRAPHY
(SEMESTER SYSTEM) W.E.F. ADMISSION, 2011**

SEMESTER-I

There will be four papers, three compulsory and one optional (out of the offered optional papers), of 100 marks each including practical examination as under :

	<i>Title</i>	<i>Marks</i>	<i>Credits</i>
Paper-I	Geographic Thought	100	4
Paper-II	Geomorphology	100	4
Paper-III	Cartography (Theory and Practical)	100	4
Paper-IV	<i>Any one of the following optional courses:</i>		
Option (i)	: Fundamentals of Population Geography	100	4
Option (ii)	: Fundamentals of Agricultural Geography	100	4
Option (iii)	: Political Geography	100	4
Option (iv)	: Geographical Perspectives on Sustainable Development	100	4

Course Content :**UNIT-I : Historical Developments upto 19th Century**

- (i) Contributions of the Greeks and Romans with special reference to Herodotus, Eratosthenes, Strabo and Ptolemy.
- (ii) Geography in the Muslim world.
- (iii) Geography in the Modern Period : Contributions of Varenus, Kant, Humboldt and Ritter.

UNIT-II : Developments in 20th Century

- (iv) Geography in the Twentieth Century : The changing paradigms, Determinism and possibilism.
- (v) Quantitative Revolution, Positivism, behaviouralism, radicalism and humanism.

UNIT-III : Philosophical Foundations

- (vi) Geography as a science of : (i) distributions; (ii) relationships; (iii) areal differentiation; and (iv) spatial organisation.
- (vii) Dualism between (i) systematic and regional geography; (ii) physical and human geography.

UNIT-IV : Methodological Issues

- (viii) Modes of explanation (a) major concerns of scientific thinking; (b) the routes to scientific explanations.
- (ix) Conceptual methodological developments.
- (x) Impact of technological advances on geographic methodology.

- Note :*
1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The student shall attempt any 10 parts in about 25-30 words each. Each part shall carry 2 marks (total 20 marks).
 2. A total of eight questions will be set out of the whole syllabus, at least *two* from each unit. The candidates will attempt *four* questions selecting one from each unit. These will be in addition to the compulsory question at serial number 1 and each question will carry 15 marks.

note (4) in the question paper.

- (iii) Relationship between process and landform.

UNIT-II

- (iv) Earth Movements: Epeirogenic, orogenic, cymatogenic.
(v) Morphogenetic regions.
(vi) Mass movement of debris.

UNIT-III

- (vii) Volcanic topography.
(viii) Karst topography.
(ix) Fluvial, Aeolian, Glacial and Marine Landforms and their processes.

UNIT-IV

- (x) Models of landscape evolution and slope development: Ideas of Davis, Penck, and King.
(xi) Multicyclic and polygenetic evolution of landscapes.

- Note :*
1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The student shall attempt any 10 parts in about 25-30 words each. Each part shall carry 2 marks (total 20 marks).
 2. A total of eight questions will be set out of the whole syllabus at least *two* from each unit. The candidates will attempt *four* questions selecting one from each unit. These will be in addition to the compulsory question at serial number 1 and each question will carry 15 marks.
 3. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc

4. Holmes, A., Principles of Physical Geology, Nelson, London, 1968.
5. King, L.C., The Morphology of the Earth, Hafner, New York, 1962.
6. Penck, W., Morphologic Analysis of Landforms, St. Marisip Press, London, 1953.
7. Pitty, A. F., Introduction to Geomorphology, Methuen, London, 1971.
8. Singh, Savinder, Geomorphology, Prayag, Prakashan, Allahabad, 1998.
9. Small, R. J., The Study of Landforms, Cambridge University Press, Cambridge, 1970.
10. Thornbury, W. D., Principles of Geomorphology, John Wiley, New York, 1969.
11. Twidale, C. R., Analysis of Landforms, John Wiley, London, 1976.
12. Twidale, C.R., Structural Landforms, A.N.U. Press, Canberra, 1971.

Further Readings :

1. Cooke, R. U. and A., Warren, Geomorphology in Deserts, Batsford, London, 1973.
2. Embleton, C. and C. A. M., King, Glacial and Periglacial Geomorphology, Arnold, London, 1968.
3. Melhorn, W. N. and R. C., Flemal, Theories of Landform Development, State University of New York, Binghamton, 1976.
4. Skinner, B. J. and S.C., Porter, The Dynamic Earth, John Wiley, New York, 1995.
5. Strahler, Alan and Arthur Strahlur, Physical Geography : Science and Systems of the Human Environment, John Wiley & Sons, New York, 3rd Edition, 2005.

Pedagogy :

The study of this paper needs adequate understanding of geomorphic forms and processes. It can be achieved through suitable use of audio-visual aids, photographs, maps, other forms of illustrations and, depending upon feasibility, field visits.

Paper-III : Cartography (Theory and Practical)

Max. Marks : 100

Objectives :

The objective of this course is to promote awareness of the M.A. students of the various cartographic techniques available for graphic representation of relief, population, agriculture, industrial and transport data, the steps of construction of the techniques—their merits and demerits. An effort is made to help them develop manual skills of drawing maps based on some of the above-mentioned data. They are also told about benefits of GIS and computer-assisted cartography.

UNIT-I

- (i) Cartography - Nature, history and recent trends.
- (ii) GIS and Computer Assisted Cartography (four practical exercises as per the availability of equipment/hardware & software).
- (iii) Types of data and symbols.

UNIT-II

Landform Mapping and Analysis :

- (iv) Problems of Landform Mapping : Elementary conventional methods and profiles (serial, longitudinal, superimposed, composite and projected).

UNIT-III

- (v) Calculation of Gradient, scales of slopes. Methods of slope analysis; Wentworth, Henry and Raisz, Robinson.
- (vi) Mapping of climatic data: Temperature and Rainfall.

UNIT-IV

- (vii) Representation of Population data.
- (viii) Representation of Agriculture data.

Note :

File at least 10 days before the commencement of the theory examination to the concerned department duly approved and signed by the faculty member teaching the course.

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4. Assessment of practical record and viva voce on it will be done by a Board of Examiners, consisting of one external examiner and one internal examiner, as practical examinations.
5. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc.

BOOKS RECOMMENDED :

Essential Readings :

1. Keates, J.S., Cartographic Design and Production, Longman, London, 1998.
2. Misra, R.P. and Ramesh, A., Fundamental of Cartography, Concept Publishing Company, New Delhi, 1989.
3. Monkhouse, F.J., Maps and Diagrams, Methuen and Co., London, 1994.
4. Raisz, Erwin, Principles of Cartography, McGraw Hill, New York, 1962.
5. Robinson, A.H. and Others, Elements of Cartography, John Willy & Sons, New York, 6th edition, 1992.

Further Readings :

1. Birch, T., Maps—Topographical and Statistical, Clarendon Press, Oxford, 1949.
2. Brown, L.A., The Story of Maps, Cressit Press, London, 1951.
3. Garnett, Alice, Geographical Interpretation of Topographical Maps, George Harrap and Co., London, 1945.
4. Gregory, S., Statistical Methods and Geographer, Longmans, London, 1963.
5. Ramamurthy, K., Maps Interpretation : India Landscapes through Survey of India, Topographic Maps, R.K. Mutt Road, Madras, 1982.

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atlases while teaching the use of different cartographic techniques. This course is concerned with visual techniques, therefore maximum use of the visual illustrations should be made while teaching this course.

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Paper- IV : *Any one of the following optional courses:*

Option (i) : Fundamentals of Population Geography

Max. Marks : 100

Terminal Exam. : 80 Marks

Internal Assessment : 20 Marks

Time : 3 Hours

Objectives :

The aim of this course is to explain the geographical approach to the study of population. It focuses on analysis of broad spatial patterns of world population examining population resources

- (v) Population - Resource regions, theories of population (Malthus, Ricardo and Marx).

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UNIT-IV

- (vi) A comparative study of the population problems and policies of developed and less developed countries with special focus on the following countries :
- (a) Developed: Canada, Japan.
 - (b) Less developed: China, India.

- Note :*
1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The student shall attempt any 10 parts in about 25-30 words each. Each part shall carry 2 marks (total 20 marks).
 2. A total of eight questions will be set out of the whole syllabus, at least *two* from each unit. The candidates will attempt *four* questions selecting one from each unit. These will be in addition to the compulsory question at serial number 1 and each question will carry 15 marks.
 3. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc.
 4. For reappear/improvement candidates(s), who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will be increased proportionally to maximum marks of the paper in lieu of internal assessment. **The paper setter must put note (4) in the question paper.**

BOOKS RECOMMENDED :

Essential Readings :

1. Chandna, R.C., Regional Planning and Development, Kalyani Publishers, New Delhi, 2008.
2. Chandna, R.C., A Geography of Population (9th Edition), Kalyani Publishers, New Delhi, 2010.
3. Chandna, R.C., Jansankhya Bhoogol (Hindi – 7th Edition), Kalyani Publishers, New Delhi, 2010.
4. Clarke, J.L., Population Geography, Pergamon Press Oxford (2nd edition), 1972.
5. Demko, G.J. et. al., Population Geography: A Reader, McGraw Hill Books Co., New York, 1971.
6. Hauser, P.M. & Duncan, O.D., The Study of Population, University Press Chicago, 1959.

7. Hornby, F. William and Jones, M., An Introduction to Population Geography, Cambridge University Press, Cambridge, 1987.
8. Hussain Majid, Human Geography, Jaipur, Rawat Publication (3rd edition), 2006-10.
9. Jones, U.K., A Population Geography, Harper & Row Publishers, London, 1981.
10. Kayastha, S.L., Geography of Population : Selected Essays, Rawat Publications, 1998.
11. Weeks, John, Population : An Introduction to Concepts and Issues, Wadsworth/Thomson Learning Belmont, LA, USA, 2002.
12. Zelinsky, W. and et. al, Geography and a Crowding World, University Press, Oxford, 1970.

Further Readings :

1. Barclay, G.W., Techniques of Population Analysis, John Wiley & Sons, New York, 1958.
2. Berelson, B. (ed.), Population Policy in Developed Countries, McGraw Hill Book Co., 1974.
3. Bose, Ashish, Population Profile and Religion in India, B.R. Publications, Delhi, 1997.
4. Crook, Nigel (ed.), Principles of Population and Development, Oxford University Press, 1997.
5. Ford, T.R. and Delong, F.F., Social Demography, Prentice Hall Inc., London, 1970.
6. Knowled, R. & Wareing, J., Economic and Social Geography : Made Simple Books, Rupa & Co., New Delhi, 2007.
7. www.prb.org
8. Premi, Mahendra K., India's Changing Population Profile, National Book Trust India , New Delhi, 2009.
9. Robinson, W.C., Population and Development Planning, The Population Council, New York, 1976.
10. Sundaram, K.V. and Nangia, Sudesh (eds.), Population Geography, Heritage Publishers, New Delhi, 1985.
11. Woods, Robert, Theoretical Population Geography, Longman Inc., New York, 1982.
12. World Population Policies, Social & Economic Affairs, United Nations, 2001-10 (annual).

Pedagogy :

The students may be encouraged to interact with census officials so as to understand the census operations

whole syllabus. The student shall attempt any 10 parts in about 25-30 words each. Each part shall carry 2 marks (total 20 marks).

2. A total of eight questions will be set out of the whole syllabus, at least *two* from each unit. The candidates will attempt *four* questions selecting one from each unit. These will be in addition to the compulsory question at serial number 1 and each question will carry 15 marks.
3. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc.
4. For reappear/improvement candidates(s), who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will be increased proportionally to maximum marks of the paper in lieu of internal assessment. **The paper setter must put note (4) in the question paper.**

BOOKS RECOMMENDED :

Essential Readings :

1. Hussain, M., Systematic Agricultural Geography, Rawat Publications, Jaipur, 1996.
2. Ilbery, B. W., Agricultural Geography, Oxford University Press, Oxford, 1985.
3. Singh, J. and Dhillon, S.S., Agricultural Geography, Tata McGraw Hill, New Delhi, 1984.
4. Singh, Jasbir, Agricultural Geography, 3rd edition, Oxford, New Delhi, 2003.
5. Symons, L., Agricultural Geography, G. Bells, London, 1967.

Further Readings :

1. Alexander, J.W., Economic Geography, Prentice Hall, N.J., 1968.
2. Gosal, G.S. and Krishan, Gopal, Regional Disparities in Levels of Socio-Economic Development in Punjab, Vishal Publications, Kurukshetra, 1984.
3. Grigg, D.B., The Agricultural Systems of the World: An Evolutionary Approach, Cambridge University Press, Cambridge, 1978.
4. Hussain, M., Agricultural Geography, Inter India Publications, Delhi, 1979.
5. Morgan, B.W. and Munton, J.C., Agricultural Geography, Methuen, London, 1971.
6. Shafi, M., Agricultural Productivity and Regional Imbalances, Concept, New Delhi, 1984.

- (a) State and Nation.
- (b) Frontiers and Boundaries.
- (c) Geo-strategic views: The contributions of H. Mackin

Further Readings :

1. Carlson, Lucie, Geography and World Politics, Prentice Hall, New Jersey, 1971.
2. Cohen, S.B., Geography and Politics in a Divided World, Methuen & Co., London, 1968.
3. Edward K. Bergman, Modern Political Geography, WMC Brown Company, Dubuque, Iowa, 1975.
4. Goblet, Y. M., Political Geography and the World Map, Philip & Sons, London, 1955.
5. Muir, Richard, Modern Political Geography, Macmillan, London, 1995.
6. Percy, G. E. et.al., World Political Geography, Second Edition, Thomas Y. Growell Company, New York, 1957.
7. Pounds, N.J.G., Political Geography, 2nd Ed., McGraw-Hill, N.Y., 1972.
8. Short, John R., An Introduction to Political Geography, Routledge & Kegan Paul, London, 1982.

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Pedagogy :

The students should be encouraged to engage in classroom discussions on the geographical aspects of political problems at the national and international levels.

OR**Option (iv) : Geographical Perspectives on Sustainable Development**

Max. Marks	:	100
Terminal Exam.	:	80 Marks
Internal Assessment	:	20 Marks
Time	:	3 Hours

Objectives : The course aims at creating better understanding of sustainable development and of the geographical perspectives of it. Being concerned with the planet as a whole, geographers are ideally suited to studying sustainable development, a field of truly global dimension.

The course attempts to grapple with the diversity both of political views on the subject and theoretical approaches, and to show how thinking geographically can enhance our understanding of them. A variety of geographical perspectives presented will demonstrate to a student of geography that there is more to subject than they realize, and encourage them to pay greater attention to sustainable development in the future.

UNIT-I

Sustainable Development : Definition, concept and historical developments; difference between economic growth, economic development and sustainable development; economic theories of sustainable development, reconciliation between political and theoretical discourses.

UNIT-II

Geography and Sustainable Development : Sustainable development in disciplinary perspective, sustainable development and geographical agenda, geography and the pursuit of sustainable development.

Sustainable Development and the Spatial Scale and Spatial Interaction : Structuring global scale, achieving sustainable development at local, regional, national and global scales, sustainable development and open economies, interaction between different spatial scales.

UNIT-III

Sustainable Development of Urban Regions : Impacts of urban development, urban modelling and sustainability assessment, models of sustainable urban development, problems and prospects.

Making Cities Sustainable : Continuity and change in urban problems, defining sustainable urban development, urban challenges in developing world.

Sustainable Economic Development : Business and the environment, sustainable economic development as Eco-efficiency, sustainable farming, resource efficiency and resource redistribution, and sustainable futures.

UNIT-IV

Climate change, Energy, and Sustainable Development : Climate change as a threat to sustainable development, current and future climate regimes, mitigating climate change.

Sustainable Development and International Relations : International relations theories, climate change and

- Note :*
1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The student shall attempt any 10 parts in about 25-30 words each. Each part shall carry 2 marks (total 20 marks).
 2. A total of eight questions will be set out of the whole syllabus, at least *two* from each unit. The candidates will attempt *four* questions selecting one from each unit. These will be in addition to the compulsory question at serial number 1 and each question will carry 15 marks.

SEMESTER II**Outlines of Tests**

There will be four papers, three compulsory and one optional (out of the offered optional papers), of 100 marks each including practical examination as under:

SEMESTER-II (for the examination of April/May, 2012)

	<i>Title</i>	<i>Marks</i>	<i>Credits</i>
Paper-I	Climatology	100	4
Paper-II	Geography of India (Systematic and Regional)	100	4
Paper-III	Fundamentals of Remote Sensing (Theory and Practical)	100	4
Paper-IV	<i>Any one of the following optional courses:</i>		
	Option (i) : Urban Geography	100	4
	Option (ii) : Population and Development Planning	100	4
	Option (iii) : Fundamentals of Natural Hazards and Disaster Management	100	4
	Option (iv) : Marketing Geography	100	4
	Option (v) : Contemporary Issues in Human Geography	100	4
Total :		400	16

1. There will be continuous assessment of 20% of the Maximum Marks of each paper. The final award in each paper will be determined by the marks obtained by the candidate in the terminal examination and the continuous assessment.
2. Options to be offered for teaching in a particular academic session in each class will be decided by the respective Board of Control.

Paper- I : Climatology

Max. Marks : 100
Terminal Exam. : 80 Marks
Internal Assessment : 20 Marks
Time : 3 Hours

Objectives :

The overall objective of the course is to foster co

The candidates will attempt *four* questions selecting one from each unit. These will be in addition to the compulsory question at serial number 1 and each question will carry 15 marks.

3. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc.
4. For reappear/improvement candidate(s), who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will be increased proportionally to maximum marks of the paper in lieu of internal assessment. **The paper setter must put note (4) in the question paper.**

BOOKS RECOMMENDED :

Essential Readings :

1. Barry, R.G. & Chorley, R.J., Atmosphere, Weather and Climate, Methuen Co. Ltd., London, 5th Edition, 1987.
2. Bhutani, Smita, Our Atmosphere, Kalyani Publishers, Ludhiana, 2000.
3. Critchfield, H.J., General Climatology, Prentice Hall, N.J., 1975.
4. Frederick K. and Edward J. Tarbuck, The Atmosphere: An Introduction to Meteorology, Prentice Hall of India Pvt. Ltd., New Delhi, 1995.
5. Strahler, A.N., Modern Physical Geography, John Wiley and Sons, New York, Singapore, 1987.
6. Trewartha, G.T., An Introduction to Climate, McGraw Hill, New York, 1980, Fifth Edition (International Student Edition).

Further Readings :

1. Lydolph, P.E., The Climate of the Earth, Rowman Nad Allanheld, Totowa, New Jersey, 1985.
2. Rumney, G.R., Climatology and the World Climates, Macmillan, London, 1968.
3. Thompson Russell D., Applied Climatology - Principles & Practice, John Willey, New York, 1997.

Pedagogy :

If possible, audio-visual aids will be arranged to explain weather phenomena to the students. Visits for the students to the nearest Weather Observatory and Meteorological Department will be arranged to know the functioning of various weather instruments and to understand weather conditions with the help of Weather and Climate Charts.

Paper-II : Geography of India (Systematic and Regional)

Max. Marks : 100
Terminal Exam. : 80 Marks

Internal Assessment : 20 Marks
Time : 3 Hours

Objectives :

To provide an understanding of :

- The geographic dimensions of India in terms of its political and administrative characteristics.
- The physical and climatic attributes and their interface with developmental strategies.
- The human and economic dimensions of India in a spatial perspective.

The candidates will attempt *four* questions selecting one from each unit. These will be in addition to the compulsory question at serial number 1 and each question will carry 15 marks.

3. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc.
4. For reappear/improvement candidate(s), who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will be increased proportionally to maximum marks of the paper in lieu of internal assessment. **The paper setter must put note (4) in the question paper.**

BOOKS RECOMMENDED :

Essential Readings :

1. Chandna, R.C. : Geography of Population, Kalyani Publishers, Delhi, 1998.
2. Deshpande, C.D. : India : A Regional Interpretation, ICSSR and Northern Book Center, New Delhi, 1992.
3. Gautam, A. : Advanced Geography of India, Sharda Pustak Bhawan, Allahabad, 2009.
4. Hussain, M. : Geography of India, Tata Mc. Graw Hill Publishing Company, Limited, New Delhi, 2008.
- 5.

Further Readings :

1.

2. American Society of Photogrammetry, Manual of Remote Sensing, Virginia, 1975.
3. Avery, T. E. and G. L. Berlin, Fundamentals of Remote Sensing and Airphoto Interpretation, 5th ed., New York, MacMillan Publishing Co., 1983, 1992.
4. Curran, P. J., Principles of Remote Sensing, Longman, ELBS edition, Hong Kong, 1988.
5. Kellaway, George P., Map Projection, Methuen & Co., London, 1956.
6. Lillesand, T. M., and Kieffer, R. W., Remote Sensing and Image Interpretation, John Wiley and Sons, New York, 1979.
7. Sabins, F. F. (Jr.), Remote Sensing Principles and Interpretation, 2nd ed., W.H. Freeman and Co., New York, 1987.
8. Steers, J. A., Map Projections, University of London Press, London, 1957.

Further Readings :

1. Barret, E. C. and Curtis, L. F., Introduction to Environmental Remote Sensing, Chapman and Hall, London, 1976.
2. Barret, E.C. and Curtis, L. F., rA.73134(A)20.5078(.)-3.731337.56 0 Td ()Tj 50TJ -285.3012(a)-1.78252(n)6.01821(d)-6

11. Verstappan, H. Th., Remote Sensing in Geomorphology, Elsevier Scientific Publishing Co., Amsterdam, 1977.
12. Verbyla, David, L., Satellite Remote Sensing of Natural Resources, Lewis Publishers, New York, 2005.

Pedagogy :

Basic fundamentals of map projection are introduced by demonstrating construction exercises in the class. Students are provided aerial photographs and trained to identify and map physical and cultural features. Instruments such as pocket and mirror stereoscope are used to prepare stereo models. Students are given simple exercises on photogrammetry.

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Paper- IV : *Any one of the following optional courses:*

Option (i): Urban Geography

Max. Marks	:	100
Terminal Exam.	:	80 Marks
Internal Assessment	:	20 Marks
Time	:	3 Hours

Objectives :

- To familiarise the students with the theoretical foundations and recent trends in this branch of Geography.
- To provide an understanding of evolutionary, morphological, and functional attributes of urban places at different scales.
- To sensitize the students about contemporary urban problems.

Course Content :

UNIT-I

- (i) Definition, nature, scope and approaches.
- (ii) Development and recent trends.
- (iii) Contribution of Indian scholars.
- (iv) Attributes of Modern city.

UNIT -II

- (v) A study of the following aspects of urban places :

- (a) Setting : Location, situation and site; definition, nature and significance.
- (b) Ecological processes and their spatial expression.
- (c) Internal structure : Theories of internal structure, internal structure of Indian cities and its comparison with western cities.
- (d) Urban fringe : Attributes, and demarcation.

UNIT-III

- (vi) City-region relations : Basis and nature, definition, demarcation, and functional structure of umland.
- (vii) Cities and Central Places : Models of Christaller, Losch, Perroux and Boudeville.

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UNIT -IV

- (viii) Urban systems : Definition, models of city size distribution; urban system in India.
- (ix) Classification of urban places :
 - (a) Non-functional classification.
 - (b) Functional Classification : Comparison of methods of functional classification.
- (x) Contemporary Urban Issues : Slums, pollution.

- Note :*
1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The student shall attempt any 10 parts in about 25-30 words each. Each part shall carry 2 marks (total 20 marks).
 2. A total of eight questions will be set out of the whole syllabus, at least *two* from each unit. The candidates will attempt *four* questions selecting one from each unit. These will be in addition to the compulsory question at serial number 1 and each question will carry 15 marks.
 3. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc.
 4. For reappear/improvement candidate(s), who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will be increased proportionally to maximum marks of the paper in lieu of internal assessment. **The paper setter must put note (4) in the question paper.**

BOOKS RECOMMENDED :

Essential Readings :

1. Carter, Harold : The Study of Urban Geography, Edward Arnold, London, 4th Edition, 1995.

Objectives :

The objective of this course is to promote awareness on the interactive relationship between population and development. That is how population change affect development in general and how development affects population. The course tries to cover all the important population attributes. This relationship between population and development planning is applicable only on the national scale and not at intra-national level. It is more relevant for less developed countries as a large gap exists between the rate of population growth and rate of economic development among them. In less developed countries high population growth is seen as the chief obstacle to the development process. The course also tries to recommend strategies for integrated population and development wherever relevant.

Course Contents :**UNIT-I**

- (i) Population and development planning.
- (ii) Population, Globalisation and Development.

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UNIT-II

- (iii) Population growth in the context of :
 - (a) Manpower and employment.
 - (b) Educational planning.
 - (c) Housing needs.
 - (d) Health and family planning.
- (iv) Population distribution, migration and development.

UNIT-III

- (v) Population and environment.
- (vi) Population and world's Forests.
- (vii) Population and poverty.

UNIT-IV

- (viii) Development problems of advanced societies.
- (ix) Population and development (case studies of Japan, Brazil and India).

Note : 1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The student shall attempt any 10 parts in about 25-30 words each. Each part shall carry 2 marks (total 20 marks).

3. De Souza, A.R., A Geography of World Economy, Merrill Publishing Co., London, 1990.
4. East-West Centre, Asia-Pacific Population and Policy, January 2003, No. 64, Honolulu, USA, 2003.
5. Lester, R.B. : State of the World, World Watch Institute Report on Progress Toward a Sustainable Society, W.W. Norton and Company, New York, 1988.
6. World Development Report (1990) : Poverty, World Bank, Oxford University Press, New York, 1990.

Pedagogy :

The students should be explained the interactive relationship between the change in different attributes of population and development. The platform from which we see this relationship remains population. In this course, we are not concerned with the mechanics of development planning. Illustrations should be used from the latest articles on the subject appearing in geographic journals and newspapers.

Option (iii) : Fundamentals of Natural Hazards and Disaster Management

Max. Marks	:	100
Terminal Exam.	:	80 Marks
Internal Assessment	:	20 Marks
Time	:	3 Hours

Objectives :

To make students conceptually clear about the concept of disaster and interrelated concepts. Also, to familiarize with methodological tools and techniques used to study disasters.

Course Contents :

UNIT-I

- (i) Concept of Hazards, Risk, Vulnerability and Disaster.
- (ii) Types of Hazards : Natural, man-made.

UNIT-II

- (iii) Natural Disasters : Floods, drought and desertification, earthquakes, landslides, avalanches, cyclones, forest fires.

UNIT-III

- (iv) Regional Dimension of Hazard : Occurrence and trends with special reference to northwest India.
- (v) Case Studies : Floods in Delhi, Major Fires in Kolkata, Earthquakes in Bhuj, Rail Accidents in India.

UNIT-IV

- (vi) Disaster Management : Concepts relating to the Pre-disaster phase, emergency phase, post-disaster phase.
- (vii) Disaster Management Mechanism in India : Agencies, Plans and Policies.

- Note :*
- 1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The student shall attempt any 10 parts in about 25-30 words each. Each part shall carry 2 marks (total 20 marks).
 - 2. A total of eight questions will be set out of the whole syllabus, at least *two* from each unit. The candidates will attempt *four* questions selecting one from each unit. These will be in addition to the compulsory question at serial number 1 and each question will carry 15 marks.

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- 3. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc.
- 4. For reappear/improvement candidate(s), who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will be increased proportionally to maximum marks of the paper in lieu of internal assessment. **The paper setter must put note (4) in the question paper.**

BOOKS RECOMMENDED :

Essential Readings :

- 1. Allan, S., Adam, B. and Carter, C. (eds.) (2000), Environmental Risks and the Media, Routledge, London.
- 2. Ambala-Bertrand, J.M. (1993), Political Economy of Large Natural Disasters : With Special Reference to Developing Countries, Clarendon Press, Oxford.
- 3. Blaikie, P. and Others (1994), At Risk : Natural Hazards, People's Vulnerability and Disasters, Routledge, London.
- 4. Burton, I., Kates, R.W. and White, G.F. (1993), Environment as Hazard, 2nd edition, Guilford Press, New York.
- 5. Hewitt, K. (1997), Regions of Risk : A Geographical Introduction to Disasters, Longman, London.

Further Readings :

1. Kasperson, J.X., Kasperson, R.E. and Turner, B. L. (1995), *Regions at Risk : Comparisons of Threatened Environments*, United Nation University Press, Tokyo.
- 2.

- (ii) Approaches : Functional, morphological, cultural-historical and spatial.

UNIT-II

- (iii) Development of marketing systems.
(iv) Classification of Markets : Rural, urban and intra-urban.
(v) Periodic Markets : Periodicity, locational and distributional patterns, fair as a market place.

UNIT-III

- (vi) Analysis of hinterlands, market size and hinterland relationships; modes and patterns of consumer and trader travels, consumer behaviour, functional hierarchy of markets; functional interaction between markets.

UNIT-IV

- (vii) Geographic study of markets in India, Ghana, Kenya and Germany.
(viii) Role of market centres in regional development.

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- Note :*
1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The student shall attempt any 10 parts in about 25-30 words each. Each part shall carry 2 marks (total 20 marks).
 2. A total of eight questions will be set out of the whole syllabus, at least *two* from each unit. The candidates will attempt *four* questions selecting one from each unit. These will be in addition to the compulsory question at serial number 1 and each question will carry 15 marks.
 3. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc.
 4. For reappear/improvement candidate(s), who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will be increased proportionally to maximum marks of the paper in lieu of internal assessment. **The paper setter must put note (4) in the question paper.**

BOOKS RECOMMENDED :

Essential Readings :

1. Barnum, G., Market Centres and Hinterlands in Baden
- Wurrtemberg, Chicago, Chicago University Press, 1968.

2. Berry, B.J.L., Geography of Market Centres and Retail Distribution, Englewood Cliffs, Prentice Hall, 1967.
3. Good, C.M., Rural Markets and Trade in East Africa, Chicago University Press, 1970.
4. N.C.A.E.R., Markets, Towns and Spatial Development in India, New Delhi, 1965.
5. Saxena, H.M., Geography of Transport and Market Centres, S. Chand & Co., New Delhi, 1975.
6. Saxena, H.M., Marketing Geography, Rawat Publications, 1990.
7. Thompson, Grahame; Frances Jennifer; Levacic Rosalind & Jeremy Mitchell, Markets, Hierarchies and Networks, Sage Publications, 1994.

Further Readings :

1. Christaller, W., Central Places in Southern Germany, Englewood Cliffs, Prentice Hall, 1966.
2. Hodder, B.W., Markets in West Africa, Ibadan, Ibadan University Press, 1969.
3. Saxena, H.M., Rural Markets and Development, Rawat Publications, 1988.

Course Content :

UNIT-I

- (i) Human Geography : Changing nature or perspectives, issues and debates, critical understanding of social theory and human geography.
- (ii) Conceptualizing Space and Place : Structure and dynamics of space; relational framework of space and place; social construction of space and time; ethics of space and place.

UNIT-II

- (iii) Geography of Difference and Exclusion : Geographies of identity and difference related to class, religion, caste, gender and location; social justice and political geography of difference.
Geographical Organisation of Power : Spatial meaning and definitions of power; dynamics of spatio-social interactions and power; geopolitics of power-territoriality and globalization.

UNIT-III

- (iv) Geography of Development : Meaning, definitions and approaches; construction of development indicators; linking globalisation and new forms of development; local initiatives towards development.

UNIT-IV

- (v) Geography of social action and movements : Reasons and approaches to social movements; aspects of social security; social-environmental movements in India.

Note : 1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The student shall attempt

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)-6.0241(r)-16.3971(y)18.0723(w)0.89126(o)-.89126()-15.0602()-1.78252(a(u)6.0241(rk)-6.0241(u)6.0241(y)18.0723(1.28 Td 41(r)-243.976(t)0.89126

Pedagogy :

Field visits should be organised to familiarize the students with changing space organization of economic, political and social activities and students should be encouraged to take up empirical exercises to understand patterns of distribution of poverty, consumerism and prosperity.

SEMESTER III**Outlines of Tests**

There will be four papers, three compulsory and one optional (out of the offered optional papers) of 100 marks each including practical examination as under :

SEMESTER III

Option (i)	:	Regional Development and Planning in India	100	4
Option (ii)	:	Special Themes in Agricultural Geography	100	4
Option (iii)	:	Bio Geography	100	4
Option (iv)	:	Social Geography	100	4
Option (v)	:	Political Geography of India	100	4
Option (vi)	:	Applied Climatology	100	4

Total : 400 16

1. There will be continuous assessment of 20% of the Maximum Marks of each paper. The final award in each paper will be determined by the marks obtained by the candidate in the terminal examination and the continuous assessment.
2. Options to be offered fohe tedeteh

- (vi) Planning of transport and public utilities.
- (vii) Problems of town planning in India.
- (viii) Urban planning policies in Indian Five Year Plans.
- (ix) Indian town planning experiences - Master Plan of Delhi and Chandigarh.

Country Planning :

UNIT-III

- (x) Country Planning : Definition, nature, importance and scope.
- (xi) Rural landuse and its determinants.
- (xii) Rural landuse, land suitability, and soil surveys.

UNIT-IV

BOOKS RECOMMENDED :

Essential Readings :

1. Bhardwaj, R.K., Urban Development in India, National Book Trust, New Delhi, 1974.
2. Chapin, F.S. & Kaiser Edward J., Urban Landuse Planning, Harper Bros., New York, 3rd Ed., 1985.
3. Jackson, J., Surveys for Town and Country Planning, Hutchinson University Library, London, 1966.
4. Modak, V.N. and V.N. Ambedkar, Town and Country Planning and Housing, Oriental Longman, New Delhi, 1971.
5. TCPO, Regional Planning Efforts in India, Government of India, New Delhi, 1985.

Further Readings :

Government of India, Report of the National Commission on Urbanisation, Vols. I & II, Ministry of Urban Development, New Delhi, 1988.

Government of India, Plan Drafts of Different Five-Year Plans, Planning Commission, New Delhi.

Pedagogy :

Distribution of a brief synopsis among students, prior to discussions in the class, on each topic, involving students in teaching and question-answer session at the end of each lecture will form the core of approach to class teaching. Listing on the black board the main headings of the theme to be discussed and the use of audio-visual aids, such as maps, transparencies and slides will be the guiding principle of teaching methodology. Organizing occasional field visits and inviting professionals as a guest faculty will be used to create bridges between the theory and practice of urban and regional planning.

Paper-II : Research Methodology in Geography

Max. Marks	:	100
Terminal Exam.	:	80 Marks
Internal Assessment	:	20 Marks
Time	:	3 Hours

Objectives :

This paper is to familiarise the students with basics of research and its significance. It aims to make them understand the ways data are collected, classified, tabulated and analysed. It also trains them to differentiate between casual and research based statements that helps them in their life.

UNIT-I

Meaning and objectives of research; research types; significance of research; research process.

Research problem: Selection and techniques.

UNIT-II

Research Design, meaning, need and features of a good design.

4. Misra, H.N. and Vijay P. Singh, *Research Methodology in Geography*, Rawat Publication, Jaipur, 1998.

- (iii) Map Projection – Coordinate system, datum, and projection systems.

UNIT-II

- (iv) Data Input, Storage and Editing: Nature of geographic data : Spatial and Attribute Data, Concept of vector and raster based models; data input devices : Digitization; external data bases; storage and manipulation of GIS data bases.

UNIT-III

- (v) GPS : Introduction and usages.
- (vi) Data Acquisition, Data from Remote Sensing Imagery, Global Positioning System (GPS) based data acquisition.

UNIT-IV

- (vii) Cartography and Map Production : Nature of maps and cartography, Key map design principles, map symbology.
- (viii) Presentation of GIS Output : Layout of Maps, Charting and Tabular representation of the results using GIS.

- Note :*
1. A compulsory question containing 10 short answer type questions shall be set covering the whole syllabus. The student shall attempt any 7 parts in about 25-30 words each. Each part shall carry 2 marks (total 14 marks).
 2. A total of eight questions will be set out of the whole syllabus, at least *two* from each unit. The candidates will attempt *four* questions selecting one from each unit carrying nine marks each. These will be in addition to the compulsory question at serial number 1.
 3. Assessment of practical record and viva voce on it will be done by a Board of Examiners, consisting of one external examiner and one internal examiner, as practical examinations.

Paper-IV : Any one of the Following Optional Courses :

Option (i) : Regional Development and Planning in India

2. A total of eight questions will be set out of the whole syllabus, at least *two* from each unit. The candidates will attempt **four** questions selecting one from each unit. These will be in addition to the compulsory question at serial number 1 and each question will carry 15 marks.
3. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc.
4. For reappear/improvement candidate(s), who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will be increased proportionally to maximum marks of the paper in lieu of internal assessment. **The paper setter must put note (4) in the question paper.**

BOOKS RECOMMENDED :

Essential Readings :

1. Brahumananda, P.R. and Others, The Development Process of the Indian Economy, Himalaya Publishing House, New Delhi, 1987.
2. Dannis, A. Randinelli et al, Decentralisation in Developing Countries : A Review of Recent Experience, World Bank Staff Working paper 581, Washington, 1981.
3. Dutt, A.K. (ed.), India : Resources, Potentialities and Planning, Kendall/Hutchinson, Iowa, 1972.
4. Fu Chen Lo (ed.), Third World Regional Developme

13. World Development Report : Sustainable Development in a Dynamic World, Transforming Institutions, Growth and Quality of Life, OUP, 2003.
14. World Development Report : Reshaping Economic Geography, The World Bank, 2009.

Further Readings :

1. Blij, H.J. and Peter O. Muller, Geography, Realm

Option (ii) : Special Themes in Agricultural Geography

Max. Marks	:	100
Terminal Exam.	:	80 Marks
Internal Assessment	:	20 Marks
Time	:	3 Hours

Objectives :

- To discuss how agriculture originated, diffused and developed in different parts of the world, what are the recent approaches used to study the subject matter and how various economic laws affect agriculture.
- To familiarize the students with locational models, diffusion models and various forms of modern agriculture.
- In its second part, the course aims to apprise the students with Indian agriculture as to how it developed after Independence in the country, what are its main features, problems and policy.
- In addition, it also familiarizes the students with the process of transformation of agriculture, through their actual field visits to selected villages of the Green Revolution region.

Course Content :

UNIT-I

Origin, dispersal and development of agriculture in the world.

Economic principles and agriculture.

UNIT-II

Locational theory and landuse : Von Thunen`s model of agricultural landuse.

Diffusion of innovations : Types of spatial diffusion, T. Haggerstrand`s neighbourhood effect model of agricultural innovation diffusion.

UNIT-III

Green Revolution in India, the Punjab model of agricultural development.

Regionalisation of agriculture in India and a brief discussion of each region.

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UNIT-IV

Indian agriculture - Its characteristics and problems.

Agricultural policy in India.

Note : 1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The student shall attempt any 10 parts in about 25-30 words each. Each part

shall carry 2 marks (total 20 marks).

2. A total of eight questions will be set out of the whole syllabus, at least *two* from each unit. The candidates will attempt **four** questions selecting one from each unit. These will be in addition to the compulsory question at serial number 1 and each question will carry 15 marks.
3. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc.
4. For reappear/improvement candidate(s), who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will be increased proportionally to maximum marks of the paper in lieu of internal assessment. **The paper setter must put note (4) in the question paper.**

Option (iii) : Biogeography

Max. Marks	:	100
Terminal Exam.	:	80 Marks
Internal Assessment	:	20 Marks
Time	:	3 Hours

Objectives :

To introduce the student to the concept of biogeography, its interpretation and application; interaction between living organisms with climate and physical environment with special reference to India.

Course Content :

UNIT-I

Biogeography, nature, scope, significance, approaches, history, recent developments.

Spatial dimension in biogeography, pattern and causes of plant and animal distributions, factors influencing the distribution of life, biogeographical regions and realms.

UNIT-II

Historical biogeography, Patterns of life in the past and today.

Biodiversity and the source of novelty in life.

UNIT-III

Biogeography of the seas; island biogeography.

Habitat fragmentation; biogeography of linear landscape features.

UNIT-IV

Biogeographical information, collection, retrieval and application.

Projecting into the future : Climate change; biogeographical consequences of global change; changing communities and biomes; effect of climate change on biological diversity.

- Note :*
1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The student shall attempt any 10 parts in about 25-30 words each. Each part shall carry 2 marks (total 20 marks).
 2. A total of eight questions will be set out of the whole syllabus, at least *two* from each unit. The candidates will attempt *four* questions selecting one from each unit. These will be in

addition to the compulsory question at serial number 1 and each question will carry 15 marks.

3. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc.
4. For reappear/improvement candidate(s), who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will be increased proportionally to maximum marks of the paper in lieu of internal assessment. **The paper setter must put note (4) in the question paper.**

BOOKS RECOMMENDED :

Essential Readings :

1. Brown, J. H., & A. C. Gibson, Biogeography, St. Louis, Mosby, 1983.
2. Brown, J.H. and Lomolino, M.V., Biogeography, Second Edition, Sinauer Associates, Inc. Sunderland, Massachusetts, 1998.
3. Cox, C.B., Moore, P.D., Biogeography, An Ecological and Evolutionary Approach, 5th ed., Blackwell Science, Cambridge, 1993.
4. MacDonald, Glen, Biogeography : Introduction to Space, Time and Life, John Wiley, New York, 2002.
5. Robinson, H., Biogeography, The English Language Book Society and Macdonald and Evans, London, 1982.
6. Spellerberg, Ian F. and John, W.D. Sawyer, An Introduction to Applied Biogeography, Cambridge University Press, Cambridge, 1999.
7. Tivy, Joy, Biogeography, A Study of Plants in the Ecosphere, Longman Scientific & Technical, UK, 1993.
8. Tivy, Joy and Greg O'Hare, Human Impact on the Ecosystem, Oliver & Boyd, Edinburgh, 1981.

Further Readings :

1. Dansereau, P., Biogeography, An Ecological Perspective, Ronald Press, New York, USA, 1957.

2. Kormondy, Edward J., Concepts of Ecology, Third Edition, Prentice Hall of India, New Delhi, 1989.
3. Mani, M.S. (ed.),

The students should be taken on field visits to the local floral-fauna zones; they should be acquainted with the local biogeography of the areas. Seminars/lectures should be organized where speakers from the allied disciplines—environmental sciences, ecology, biosciences, should be invited to discuss with the students various issues of biogeography with a multidisciplinary approach.

Option (iv) : Social Geography

Max. Marks	:	100
Terminal Exam.	:	80 Marks
Internal Assessment	:	20 Marks
Time	:	3 Hours

Objectives :

- To familiarise the student with the theoretical foundations and conceptual grounding of this branch.
- To understand the formation of socio-cultural regions in the context of historical and social factors in India.
- To sensitize the student about the process of social transformation and change and its interface with developmental and political aspects in India.

Course Content :

UNIT-I

- (i) (a) Definition, nature and scope of social geography.
(b) Social geography in the realm of social sciences.
- (ii) Concepts and themes in social geography :
 - (a) Social space.
 - (b) Social segregation.
 - (c) Social justice.
 - (d) Social well-being.
 - (e) Ethnicity.

UNIT-II

(iii) Evolution of socio-cultural regions in India :

- (a) Evidence from classical literature.
- (b) Core and peripheral regions.

(iv) Attributes of spatial distribution of :

- (a) Tribes.
- (b) Religion.
- (c) Language.
- (d) Caste.

UNIT-III

(vi) Social transformation and change in India :

- (a) Modernization and sanskritization.
- (b) Role of rural-urban interaction.
- (c) Problems of social transformation.

UNIT-IV

(vii) (a) Social and ethnic diversity of India and national integration.

- (b) Cultural pluralism and development.

Note : 1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The student shall attempt any 10 parts in about 25-30 words each. Each part shall carry 2 marks (total 20 marks).

2. A total of eight questions will be set out of th

BOOKS RECOMMENDED :

Essential Readings :

1. Adhikari, S. (1997), Political Geography, Rawat

Option (vi) : Applied Climatology

Max. Marks	:	100
Terminal Exam.	:	80 Marks
Internal Assessment	:	20 Marks
Time	:	3 Hours

Objectives :

The objective of the course is to introduce and discuss the basic topics of applied climatology and how these concepts can be useful in everyday planning and operations.

Course Content :**UNIT-I**

Applied Climatology : History, development, importance.

Basic Climatic Elements : Radiation, Temperature, Moisture and Precipitation, Winds and Pressure.

Climate Classification : World Climates : An Overview.

Controls of Climate : Latitude, Geographic Position, Land and Water, Prevailing Winds, Ocean Currents, Altitude etc.

UNIT-II

Weather Analysis : Data Acquisition and Dissemination.

Weather Forecasting : Methods, Types, Accuracy.

Medium Range Forecasts, Long Range Forecasts.

Satellites in Weather Forecasting.

UNIT-III

Air Pollution : Sources and Types of Air Pollution.

Meteorological Factors affecting Air Pollution.

Acid Precipitation.

Urban Heat Island.

UNIT-IV

Climatic Change : Definition and Detection : Seafloor Sedi41(t)0.89126(r)-it, lacia ce, ree ings, Oygensoe – Analysis.

atural ases of Climate Change : Plate Tectonics

- Note :*
1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The student shall attempt any 10 parts in about 25-30 words each. Each part shall carry 2 marks (total 20 marks).
 2. A total of eight questions will be set out of the whole syllabus, at least *two* from each unit. The candidates will attempt **four** questions selecting one from each unit. These will be in addition to the compulsory question at serial number 1 and each question will carry 15 marks.
 3. Internal assessment may include written assignme

3. Trewartha, G.T., An Introduction to Climate, McGraw Hill, New York, 1980, Fifth Edition (International Student Edition).

Paper -I : Regional Planning

Max. Marks	:	100
Terminal Exam.	:	80 Marks
Internal Assessment	:	20 Marks
Time	:	3 Hours

Objectives :

- To understand and evaluate the concept of region in geography and its role and relevance in regional planning.
- To identify the issues relating to the development of the region through the process of spatial organization of various attributes and their interrelationship.
- To identify the causes of regional disparities in development, perspectives and policy imperatives.

Course Content :**UNIT-I**

- (i) The planning process : Concept and types; regional planning; concept, difficulties, rationale, principles and objectives.
- (ii) Role of geography in regional planning.

UNIT-II

- (iii) Preparation of a regional plan.
- (iv) Regions for planning : Regional awareness, region and its evolution; planning regions; characteristics, hierarchy, need, demarcation; planning regions of India.

UNIT-III

- Note :*
1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The student shall attempt any 10 parts in about 25-30 words each. Each part shall carry 2 marks (total 20 marks).
 2. A total of eight questions will be set out of the whole syllabus, at least *two* from each unit. The candidates will attempt **four** questions selecting one from each unit. These will be in addition to the compulsory question at serial number 1 and each question will carry 15 marks.
 3. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc.
 4. For reappear/improvement candidate(s), who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will be increased proportionally to maximum marks of the paper in lieu of internal assessment. **The paper setter must put note (4) in the question paper.**

BOOKS RECOMMENDED :

Essential Readings :

1. Alden, J. & Morgan, R. : Regional Planning–A Comprehensive View, Leonard Hill Books, Beds, 1974.
2. Alexander, E.R. : Approaches to Planning : Introducing Current Planning Theories, Concepts, and Issues, Gordon & Breach, Philadelphia, 1992.
3. Bhat, L.S. & Others (ed.) : Regional Inequalities in India,

13. Prakasa Rao V.L.S. : Regional Planning, Asia Publishing House, Bombay, 1968.

14. Sundaram, K.V. (ed.) : Geography and Planning, Concept, New Delhi, 1985.

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Further Readings :

1. Bludon, John & Others (eds.) : Regional Analysis and Development, Harper & Row, London, 1973.
2. Burrough, A. : Principles of Geographic Information Systems for Land Resource Assessment, Clarendon Press, Oxford, 1986.
3. Chadwick, G. : Systems View of Planning, Pergamon Press, Oxford, 1971.
4. Faludi, Andreas : Reader in Planning Theory, Pergamon Press, Oxford, 1976.
5. Freeman, T.W. : Geography and Planning, Hutchinson, London, 1958.
6. Friedman, John and Clyde Weaver : Territory and Function : The Evolution of Regional Planning, Edward Arnold, London, 1979.
7. Isard, Walter : Introduction to Regional Science, Prentice Hall, New York, 1975.
8. Lavrov, S. and Sdasyuk, G. : Concepts of Regional Development, Progress Publishers, Moscow, 1988.
9. Misra, R.P. & Others (eds.) : Regional Planning and National Development, Vikas, New Delhi, 1978.
10. Misra, R.P. & Others (eds.) : Regional Planning : Concepts, Techniques, Policies and Case Studies, University of Mysore, Mysore, 1969.

Pedagogy :

The students should be made to do sessional assignments based on diverse data to formulate regions at the local and regional levels and to identify the regional differentiations. They should be made conversant with the trends in the development of the regional aspects using 'space' in the multi disciplinary approach to regional development.

Paper -II : Field Based Project Report (Practical only)

Max. Marks	:	100
Report & Viva	:	80 Marks
Internal Assessment	:	20 Marks
Time	:	3 Hours

<i>Distribution of marks :</i>		Marks
Field Report	:	50
Viva on Field Report	:	30
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Objectives :

1. The paper is designed to acquaint the student with the importance of field work as one of the methodologies in Geography.
2. The students are to be sensitized about pre-field work preparations, conduct of the field work, post-field work based and the writing of a field work report.

Course Contents :

(Since this paper is of practical nature only, therefore contents of syllabus need not to be organized into units).

Field Based Project Report in Geography :

The project report will involve statement of objectives and scope of field investigation; methods of field work for studies of different scales (macro, meso, and micro); preparation of a questionnaire; sampling techniques, collection, processing, representation, analysis and interpretation of data/information. The candidates are required to write a project report on small assigned problem involving field investigations.

- Note :*
1. The candidates are required to submit their project reports one week before the commencement of examination to the concerned Head of the Postgraduate Department.
 2. Assessment of practical record and viva voce on it will be done by a Board of Examiners, consisting of external examiner, internal examiner and the chairperson of the department.
 3. Improvement/repeat cases must prepare either an improved form of their earlier practical record or prepare a new one. They must get it approved and signed by the faculty member teaching the course at their parent department.
 4. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc.

BOOKS RECOMMENDED :

1. Archer, J.E. and Dalton, T.H., Field Work in Geography, E.T. Bastaford Ltd., London, 1968.
2. Jones, P.A., Field Work in Geography, Longman, London, 1968.
3. Elhance, D.N., Fundamentals of Statis2(s)-8.59052(s)3.45768(e)-1.78289121205(c)-1.709126(.)-3.rk6(58904(i)0.8501205

The field-work exercises should aim at identification of locational attributes of selected elements and their areal associations. The students are to be trained through taking up exercises requiring field visits and generation of primary data, its processing and statistical and cartographic representation.

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Paper-III : Quantitative Methods in Geography (Theory and Practical)

Max. Marks : 100
Terminal Exam. : 80 Marks
Internal Assessment : 20 Marks
Time : 3 Hours

Objectives :

- To provide knowledge of statistical techniques and their application in geography;
- To train the students to apply these techniques and methods to the analysis of the geographic problems.

Distribution of marks :

Marks

Written paper of three hours duration (along with the theory examination)	:	50
Practical Record and Viva Voce Examination (20+10)	:	30

Course Content :

UNIT-I

Quantification in Geography : Types of spatial data (point, line and sen

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UNIT-IV

Correlation and Regression : Scatter diagram, correlation by Spearman's Rank Difference and Karl Pearson's Product Moment Methods, regression analysis, construction of regression line; Coefficient of areal correspondence.

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Note : 1. A compulsory question containing 10 short answer type questions shall be set covering the

Pedagogy :

The students should be made to understand the importance of quantification in Geography. They should be taught the basic techniques and their application in geographic research by giving simple and small examples from the field of Geography.

Paper-IV : Any one of the Following Optional Courses :**Option (i) : Administrative Geography**

in the class, term papers, attendance etc.

4. For reappear/improvement candidate(s), who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will be increased proportionally to maximum marks of the paper in lieu of internal assessment. **The paper setter must put note (4) in the question paper.**

BOOKS RECOMMENDED :

Essential Readings :

Objectives :

- To bring awareness among the students about the finite nature of water resources; declining per capita availability of quality water; escalating demands and the looming water crisis.
- To understand the need for better management of water resources through appropriate methods and conservation of water resources.

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Course Content :

UNIT-I

- (i) Water as a focus of geographical interest, inventory and distribution of world's water resources (surface and sub-surface).
- (ii) The basic hydrologic cycle; Precipitation, potential evapotranspiration and interception losses; run off.

UNIT-II

- (iii) Water demand and use in (a) Agriculture (b) Industry (c) Navigation (d) Power generation (e) Recreation and (f) Household.
- (iv) Conservation Practices and planning for the development of water resources.

UNIT-III

- (v) Problems of water resource management in India (i) water logging (ii) ground water (iii) water pollution (iv) flood (v) drought.
- (vi) International and Interstate River water disputes and treaties with reference to India.

UNIT-IV

- (vii) Integrated basin planning.
- (viii) Watershed management.

Note : 1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The student shall attempt any 10 parts in about 25-30 words each. Each part shall carry 2 marks (total 20 marks).

2. A total of eight questions will be set out of the whole syllabus, at least *two*

3. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc.
4. For reappear/improvement candidate(s), who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will be increased proportionally to maximum marks of the paper in lieu of internal assessment. **The paper setter must put note (4) in the question paper.**

BOOKS RECOMMENDED :

Essential Readings :

1. Agarwal, Anil and Sunita Narain, Dying Wisdom : Rise, Fall and Potential of India's Traditional Water Harvesting System, Centre for Science and Environment, New Delhi, 1997.
2. Barlow, M. and Clarke, T. Blue Gold : The Fight to Stop the Corporate Theft of the World's Water, Leftword Books India, 2003.
3. Economic and Social Commission for Asia Pacific, United Nations : Guidelines for the preparation of National Master Water Plans, 1989.
4. Gulhati, N.D., Development of Inter State Rivers : Law and Practice in India, Allied Publishers, Bombay, 1972.
5. Jones, J.A., Global Hydrology : Processes, Resources and Environmental Management, Longman, 1997.
6. Pandey, M. and Anand, C. : Geography and You, New Delhi, 2003.
7. Ram Kumar Gurjar and B.C. Jat : Geography of Water Resources, Rawat Publications, Jaipur, 2008.
8. Matter, J.R. : Water Resource Distribution, Use, Management, John Willey, Marylane, 1984.

Further Readings :

1. International Water Resource Association and Central Board of Irrigation and Power : Water for

5. Rao, K.L., India's Water Wealth, Orient Longman, New Delhi, 1979.
6. Kates, R.W. and Burton, I. (ed.), Geography, Resources and Environment, Ottawa, 1980.
7. Sidharth, K., Oceanography : A Brief Introduction, Kisalaya Publications, New Delhi, 2000.
8. Smith, K., Water in Britain : A Study in Applied Hydrology and Resource Geography, McMillan, London, 1972.

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9. Tebbutt, T.H.Y. (ed.), Advance in Water Engineering, Elsevier Applied Science Pub., London, 1985.
10. Tideman, E.M., Watershed Management : Guidelines for Indian Conditions, Omega, New Delhi, 1996.
11. Verghese, B.G., Water of Hope : Integrated Water Resource Development and Regional Co-operation within the Himalayan-Ganga-Brahamaputra-Barak Basin, Oxford.

Pedagogy :

The students should be made to understand the importance of efficient use of water and the practices to conserve it. Also, they must be encouraged to visit countryside to understand traditional water harvesting practices and their relevance to current scenario.

Option (iii) : Geography of Food Security

Max. Marks	:	100
Terminal Exam.	:	80 Marks
Internal Assessment	:	20 Marks
Time	:	3 Hours

Objectives :

- To make students understand various conceptual and methodological issues involved in food security system.
- To understand demand, su3.01205()-376.506(B)-7.69925(-6.0241(,))-135.542(d)-6.0241(e)-13.8307(m2(c2610 15.9.024

- (iii) World pattern of Dietary Energy Supply and Minimum Dietary Energy requirement of food resources in calorific terms, Concepts of poverty, hunger and undernourishment.
- (iv) World pattern of food security.

UNIT-III

- (v) Food security through sustainable agricultural development.
- (vi) Climate change and food security.

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UNIT-IV

- (vii) Spatial pattern of food security in India : Distribution of consumers - total population and agricultural population, food surplus and deficit regions.
- (viii) Government policies towards food security : Public distribution system (PDS) and its role in providing food security in different parts of India.

Note : 1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The student shall attempt any 10 pa

Oxford
and IBH Pub. Co., New Delhi.

4. Chung, K., et. al. (1997), Identifying the Food Insecure : The Application of Mixed Method. Approaches in India; International Food Policy Research Institute, Washington.
5. George, P.S. (1994), Food Security in South Asia : Performance and Prospects, Economic and Political Weekly, Vol. 29, No.15, April 30.
6. Minhas, B.S. (1976), Towards National Food Security, Indian Journal of Agricultural Economics, Vol. 31, No. 4.
7. Asian Development Bank (2010), Agricultural, Food Security and Rural Development, Oxford University Press, New Delhi.

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Further Readings :

1. Mohammad, N. (2002), Regional Patterns of Food Security in India, Annals, NAGI, Vol. 21, Delhi.
2. Radhakrishna, R. (1991), Food and Nutrition : Challenge for Policy, Journal of the Indian Society of Agricultural Statistics, Vol. 53, No.3, December.
3. Reutlinger, S. (1977), Food Insecurity : Magnitudes and Remedies, Washington, U.S.A.
4. Sen, A.K. (1981), Poverty and Famines : An Essay in Entitlement and Deprivation, Oxford University Press, Delhi.
5. Shafi, M. and Aziz, A. (ed.) (1989), Food Systems of the World, Rawat Pub., Jaipur.

Pedagogy :

The students are required to understand the deep rooted dimensions of the whole concept of food security/insecurity in the world. This can be done by encouraging wide use of literature available in journals, books, research reports, atlases, maps and through interaction with students/researchers from other disciplines such as Economics, Sociology and Public Administration.

Option (iv) : Economic Geography (with special reference to India)

Max. Marks	:	100
Terminal Exam.	:	80 Marks
Internal Assessment	:	20 Marks
Time	:	3 Hours

Objectives :

- The overall objective is to foster the comprehensive understanding of conceptual and methodological issues involved in organization of economic activities and understand the theories of industrial location and their application in context of developing economies like Indian.
- To understand the spatial structure of Indian economy and recent changes therein and its social, political and environmental implications from geographical angle.

- Note :*
1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The student shall attempt any 10 parts in about 25-30 words each. Each part shall carry 2 marks (total 20 marks).
 2. A total of eight questions will be set out of the whole syllabus, at least *two*

Distribution of a brief synopsis among students, prior to discussions in the class, on each topic, involving students in teaching and question-answer session at the end of each lecture will form the core of approach to class teaching. Listing on the black board the main headings of the theme to be discussed and the use of audio-visual aids. Such as maps, transparencies and

- (vii) Rural settlement types and their distribution in selected regions of India : Kerala, Western Himalaya, Punjab Plains, Tribal Areas of Central India, Ganga Delta.
- (viii) Transformation of rural landscape in India.

- Note :*
1. A compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The student shall attempt any 10 parts in about 25-30 words each. Each part shall carry 2 marks (total 20 marks).
 2. A total of eight questions will be set out of the whole syllabus, at least *two* from each unit. The candidates will attempt **four** questions selecting one from each unit. These will be in addition to the compulsory question at serial number 1 and each question will carry 15 marks.
 3. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc.
 4. For reappear/improvement candidate(s), who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will be increased proportionally to maximum marks of the paper in lieu of internal assessment. **The paper setter must put note (4) in the question paper.**

BOOKS RECOMMENDED :

Essential Readings :

1. Ambrose, P., Settlement Patterns, Longmans, London, 1970.
2. Ghosh, Sumita, Introduction to Settlement Geography, Orient Longman, Calcutta, 1998.
3. Hudson, R.S., A Geography of Settlements, Macdonald & Sons, London, 1970.
4. Money, D.C., Patterns of Settlements, Evans Brothers, London, 1972.
5. Mukerji, R.K., Man and His Habitation, Popular Prakashan, Bombay, 1968.
6. Sauer, C.O., Land and Life, University of California Press, Berkely, 1963.
7. Singh, R. L. et. al (ed.), Readings in Rural Settlement Geography, National Geographical Society of India, Varanasi, 1975.
8. Singh, R. Y., Geography of Settlements, Rawat Publications, 1998 (Reprint).
9. Singh, R. L. et. al. (ed.), Geographic Dimensions of Rural Settlements, National Geographical Society of India, Varanasi, 1976.

Further Readings :

1. Chisholm, M., Rural Settlement and Land Use, Hutchinson University Library, London, 1962.
2. Mitra, A., Report on House Types and Village Settlement Patterns in India, Manager of Publications, Delhi, 1960.
3. Rapoport, A., House Form and Culture, Prentice Hall, New Jersey, 1969.

Pedagogy :

The course should be conducted with the help of adequate illustrations using audio-visual aids and, depending upon feasibility, field visits.
