

**BA/BSc. 1st Year
First Semester**

GG:E101 : Introduction to Geography

100 Marks

Unit - I	Nature of Geography, emergence of geography as a subject, geography and other disciplines.	20 marks
Unit -II	Contribution of Greek and Arab geographers, contribution of German and French geographers.	20 marks
Unit -III	Geography as the study of environment, man-environment relationship, determinism, possibilism, neo-determinism; Dualism in geography - systematic-regional, physical-human, branches of geography.	20 marks
Unit - IV	Geography as human ecology; Areal differentiation and spatial organization; Concept of region - macro, meso and micro; Recent trends of study geography in India.	20 marks
Unit - V	Cartography and its history; importance of quantitative techniques; Remote sensing and GIS, field works - Physical and socio economic surveys in geography.	20 marks

Suggested Readings :

1. Abler, Ronald.F. et.al *Geography 's Inner Worlds : Pervasive themes in Contemporary American Geography*, Routledge New Jersey, 1992
2. Dikshit R.D.: *The Arts, Science of Geography Integrated Readings*, Prentice Hall of India, New Delhi, 1994.
3. Dikshit R.D. : *Geographical Thought -A Contextual History of Ideas*, Prentice Hall of India Pvt. Ltd. 2000.
4. Dohrs, F .E. and Sommers, L.W.(eds.) *Introduction to Geography*, Thomas Y. C rowell Co.,New York, 1967.
5. Hartshorne, -Richard : *Perspective on the Nature of Geography*, Rand McNally and Co.,Chicago, 1959.
6. Harvey, David: *Explanation in Geography*, Edward-Arnold, London, 1972.
7. Holt.-Jensen, A.: *Geography: Its History and Concepts*, Longmans, 1980.
8. Husain, Majid: *Evolution of Geographical Thought*, Rawat Publicantions, Jaipur, 1984.
9. James, P.E.-: *All Possible Worlds: A History of Geographical Ideas*, Sachin Publication, Jaipur, 1980.
10. Johnston, R.J. and Claval, P. (eds.) : *Geography Since the Second World War*, Croom Helm, London/Bernes and Bable, N.J., 1984.
11. Jones, P.A.: *Fieldwork in Geography*, Longmans, 1968.
12. Lownsbury, J.F. and Aldrich, F.T.: *Introduction to Geographical Methods and Techniques*, Charles Marrill, Columbus, 1979
13. Minshull, R.: *The Changing Nature of Geography*, Hutchinson University Library, London,1970.

14. Wooldridge, S.W. : *The Geographer As Scientist*, Thomas Nelson and sons Ltd., London, 1956.
15. Singh, R.L. : *Elements of Practical Geography*, Kalyani Pub., New Delhi. 1969.
16. R.P. Misra: *Fundamentals of Cartography*, Prasaranga, University of Mysore, 1969
17. Barrett E.C. and Curtis : *Fundamental of Remote Sensing and Air Photo Interpretation*, McMillan, New York, 1992.

**BA/BSc. 1st Year
Second Semester**

GG: E202 Physical Geography

100 Marks

Unit-I	The Solar system and origin of earth; Rocks — their origin and classification; Interior of the earth; Earth movements — organic and epeirogenic; Earthquakes and volcanoes, major land forms.	20 Marks
Unit-II	Weathering, factors affecting weathering; Concept of cycle of erosion; works of running water, wind and glaciers; Karst and coastal regions; Drainage patterns, lakes and islands.	20 Marks
Unit-III	Elements of weather and climate; Composition and structure of the atmosphere; Insolation, heat budget, vertical, horizontal and seasonal distribution of temperature.	20 Marks
Unit-IV	Atmospheric pressure and winds, planetary, periodic and local winds, evaporation, condensation and precipitation; Cyclones and anticyclones; Climatic types and their association with major natural regions.	20 Marks
Unit-V	Configuration of ocean floor; Temperature and salinity distribution of ocean water; Ocean currents, marine deposits, Corals and atolls; Global distribution of major plant and animal communities; Concept of ecosystem and food chain.	20 Marks

Suggested Reading :

1. Ahmed Enyat : *Geomorphology*, Kalyani Publishers, New Delhi, 2001.
2. Blomm A.L: *Geomorphology-A Systematic Analysis of Late Canezoic landforms*, Prentice Hall Englewood Cliffs, N.J. 1978.
3. Dayal, P. : *A textbook of Geomorphology*, Sukla Book Deport, Patna 1996.
4. Critchfield, H.: *General Climatology*, Prentice-Hall, New York, 1975.
5. Monkhouse, F .J .: *Principles of Physical geography*
6. Sharma, R.C. and Vatal, M. : *Oceanography for Geographers*
7. Strahler, AN. & Strahler A.H : *Modern Physical Geography*, John Wiley & Sons revised edition, 1992.
8. Kale, V.S. and Gupta, A. : *Introduction to Geomorphology*, Orient Longman, Kolkata, 2001.
9. Thornbury. W.D.: *Principles of Geomorphology*, Wiley Eastern, 1969
10. Wooldridge, S.W. and Morgan, R.S. : *An Outline of Geomorphology : The Physical Basis of Geography- An Outline of Geomorphology*, Longman Green & Co., London 1959.

**BA/BSc. 2nd Year
Third Semester**

GG:E303 (i) Human Geography

50 Marks

Unit-I	Nature and scope of human geography, branches of human geography, approaches to the study of human geography :Primitive life style of mankind and subsequent migration.	15 Marks
Unit—II	Division of mankind : spatial distribution of racial and linguistic groups; Human adaptation to the environment-(i) cold region - Eskimo, (ii) hot region - Bushman (iii) plateau — Gonds, (iv). mountain — Gujjars, nomads and (v) natural hazards.	20 Marks
Unit-III	Economic activities of mankind: food gathering, hunting, fishing, vegeculture, shifting cultivation; Economic activities in modern society — industry, transport and agriculture, trade and commerce.	15 Marks

Suggested Readings :

1. Bergwan, Edward E: *Human Geography; Culture, Connections and landscape*, Prentice-Hall, New Jersey,1995.
2. Carr, M. : *Patterns, Process and Change in Human Geography*, MacMillan Education, London, 1987.
3. Fellman, J.L. : *Human Geography-Landscapes of Human Activities*, Brown and Benchman Pub., U.S.A. 1997
4. DeBlij H.J.:*Human Geography, Culture Society and Space*, John Wiley, New York, 1996.
5. Johnston, R.J. (editor) : *Dictionary of Human Geography*, Blackwell, Oxford, 1994.
6. Mc Bride, P.J. : *Human Geography Systems, Patterns and Change in Human Geography*, Nelson, U.K. and Canada, 1996.
7. Michael, Can: *New Patterns: Process and Change in Human Geography* Nelson, 1997.
8. Peter Daniels, Michael B. Denis S. and James, S: *Human Geography*, Pearson Education, Delhi, 2003.
9. Rubenstein, J .H and Bacon R.S.: *The cultural Landscape-an Introduction to Human Geography*, Prentice hall, India, New Delhi, 1990.
10. Singh, K.N.: *People of India, An introduction*, Seagull Books, 1992.
11. Majid Husain : *Human Geography*, Rawat Publication. Jaipur, 2003
12. UNDP: *Human Development Report*, Oxford University Press,2001

GG:E303(ii)P Cartography-I

50 Marks

Unit I:	Scale: representative fraction, plain linear, diagonal and comparative ; Identification of rocks and minerals, fibers and crops.	10 marks
Unit II:	Methods of showing relief-hachure, shading, contours and layer tints; Representation of different landforms by contours; Drawing of profiles-cross and long profiles, superimposed, projected and composite profiles and their relevance in landform mapping and analysis.	15 marks
Unit III:	Representation of temperature and rainfall data by line and bar graphs. Drawing of climograph and hythergraph and their interpretation; Interpretation of Indian weather maps for July and January months; Reading of meteorological instruments- maximum & minimum thermometers, wet & dry thermometers, rain gauge, barometer, wind vane and anemometer.	15 marks
	Record book	05 marks
	Viva -voce	05 marks

Note: Questions are to be set according to the marks allotted to units at the time of examination.

Suggested Readings :

1. Lawrence, G.R.P. : *Cartographic Methods*, Methuen, London, 1968.
2. Monkhouse, FJ. & Wilkinson, H.R.: *Maps and Diagrams*, Methuen, London, 1994.
3. Robinson A.H.: *Elements of Cartography*, John Wiley & Sons, Newyork, 1998(fifth edition).
4. Singh, R.L. : *Elements of Practical Geography*, Kalyani Pub., New Delhi.1969.
5. R.P. Misra: *Fundamentals of Cartography*, Prasaranga, University of Mysore, 1969
6. Raisz, Erwin: *Principles of Cartography*, Mc Graw-Hill, Newyork, 1962.

**BA/BSc 2nd Year
Fourth Semester**

GG:E404(i) Population and Settlement Geography

50 Marks

Unit-I	Nature and scope of population geography, world population growth, density and distribution; Composition of population: age and sex, rural and urban, economic composition, fertility and mortality with reference to India; Migration — internal and international; Population problems and policies with reference to India. 25 marks
Unit-II	Nature and scope of settlement geography, evolution of settlements, spatial distribution and associated factors; Settlements of rural and urban. 10 Marks
Unit-III	Types and patterns of rural settlements, distribution of rural settlements; Growth of urban settlements, morphology, urbanization trends in the world, functional classification of towns, urban problems and planning. 15 Marks

Suggested Readings :

1. Bose Ashish et al : *Population in India's Development (1947-2000)*, Vikas, New Delhi, 1974.
2. Chandna R.C.: *Geography of Population*, Kalyani Pub, New Delhi, 2000.
3. Chandna r.C.: *Geography of Population: Concept, Determinants and Patterns*, Kalyani, New Delhi, 2000.
4. Clarke John I : *Population Geography*, Pergarnon Press, Oxford 1973.
5. Crook, Nigel : *Principles of Population and Development*, Pergarnon Press, N.Y. 1977.
6. Garnier B.J.: *Geography of Population*, Longman, London 1970.
7. Mamoria C.B.: *India 's Population Problem*, Kitab Mahal, New Delhi 1981.
8. Mitra Ashok: *India's Population: Heading Towards a Billion*, B.R. Publ. Corp. 1991 .
9. Srinivasan K. and M.B. Vlassoff : *Population Development Nexus in India : Challenges for the Millenium*, Tata McGraw Hill, New Delhi 2001.
10. Sundaram K.V. and Sudesh Nangia (Ed): *Population Geography*, Heritage, Delhi 1986.
11. UNDP : *Human Development Report*, Oxford University Press, Oxford 2000.
12. Wood R. : *Population Analysis in Geography* , Longman, London, 1979.
13. Carter H. : *The Study of Urban Geography*,Edward Arnold, London, 1972.
14. Rao, VLSP: *Urbanization in India: Spatial Dimensions*, Concept Publication. New Delhi. 1996
15. Singh, R.L. & Singh, K.N.(eds): *Readings in Rural Settlement*, BHU, Vanarasi.
16. Singh , R.Y: *Geography of Settlements*,Rawat,Jaipur,1998
17. Singh, R.L. & Singh,K.N.(eds): *Readings in Rural Settlement*, BHU, Vanarasi.

GG : E404(ii)P Cartography-II

50 Marks

Unit I:	Cartographic symbols and their uses: points-dots, proportional circles and spheres, lines- isopleths and flow lines, areas- choropleth. Use of line and bar graphs for representing population, agriculture, industry and transport data.	15 marks
Unit II:	Mean ,median, mode, standard deviation, correlation coefficient.	10 marks
Unit III:	Representation of population distribution, density and growth, land use , cropping pattern, industries and transport by cartographic techniques other than line and bar graphs. Interpretation of Survey of India(SOI) topo-sheets of an area in respect of (i) relief, (ii) drainage ,(m) settlement and (iv) communication pattern.	15 marks
Record book		05 marks
Viva -voce		05 marks

Note: Questions are to be set according to the marks allotted to units at the time of examination.

Suggested Readings :

1. Monk house, FJ. : *Maps and Diagrams*, Methun & Co Ltd. , London, 1971.
2. Raize,Erwin. : *Principals of Cartography* : Me Graw Hill, Newyork, 1982.
3. Elhance,D.N.: *Fundamental of Statistics*, Kitab Mahal, Allahabad,1972.
4. Robinson A.H. and sale R.D. : *Elements of Cartography*, John Wiley, New Jersey, 1953.
5. Singh, R.L. : *Elements of Practical Geography*, Kalyani Publishers, New Delhi, 1979
6. Birch, T.W. : *Maps : Topographical and Statistical*, Clarendon Press, Oxford, 1949.
7. R.P. Misra: *Fundamentals of Cartography*, Prasaranga, University of Mysore, 1969.
8. Aslam Md.: *Statistical Method in Geographical Studies*, Rajesh Publication, New Delhi, 1976.
9. Pal, S.K. : *Statistics for geoscientists - Techniques and Applications*, Concept, New Delhi, 1998.
10. Gregory S: *Statistical Methods and the Geographer*, Longman S. London, 1963.

**BA/BSC 3rd Year
Fifth Semester**

GG:H505 Geomorphology

100 Marks

Unit-I	The nature, scope and concepts of geomorphology; Relationship of geomorphology with other branches of earth sciences; Geological time scale.	20 Marks
Unit-II	Earth's interior, Wegener's theory of Continental drift, Plate Tectonics ;Earth movements - orogenic and epeirogenic; Types of folds and faults, isostasy, earthquakes and volcanoes, types of mountains.	20 Marks
Unit-III	Rocks and minerals — origin and composition of rocks, classification of rocks; Weathering, formation of regolith and soils, rocks and relief.	20 Marks
Unit-IV	Geomorphic agents and processes, erosion, transportation and deposition; Mass wasting; Evolution of landscape; Concept of cycle of erosion, interruption to cycle of erosion, fluvial, arid, glacial, karst and coastal landscapes.	20 Marks
Unit-V	Applied geomorphology : settlements, transport, land-use, mining, resource evaluation, environmental and assessment.	20 Marks

Suggested Readings :

1. Dayal, P: *A Text book of Geomorphology*, Shukla Book deport, Patna, 1996.
2. Dury, G.H. : *essays in Geomorphology*, Heinmann, London, 1966.
3. Ernst, W.G.: *Earth systems — Process and Issues*, Cambridge University Press, 2000.
4. ICSSR : *A Survey of Research in Physical Geography*, Concept, New Delhi, 1983.
5. Kale V. and Gupta, A : *Element of Geomorphology*, Oxford University Press, Calcutta, 2001.
6. Monkhouse, F.J.: *Principles of Physical geography*, Hodder and Stoughton, London, 1960.
7. Pitty. A. : *Introduction of Geomorphology*, Methuen, London, 1974.
8. Sharma, H.S. : *Tropical Geomorphology*, Concept, New Delhi, 1987.
9. Singh, S. : *Geomorphology*, Prayag Pustak Bhawan, Allahabad, 1998.
10. Small, R.J. : *The Study of Landforms*, Mc Graw Hill, New York, 1985.
11. Sparks, B.W.: *Geomorphology*, Longmans, London, 1960.
12. Steers, J.A.: *The Unstable Earth. Some Recent Views in Geography*, Kalyani Publishers, New Delhi, 1964.
13. Strahler, A.N. : *Environmental Geo-Science*, Hamilton Publishing, Santa Barbara, 1973.
14. Strahler, A.N. and Strahler, A.H.: *Modern Physical Geography*, John Wiley & Sons, revised edition 1992.
15. Summerfield, M.A. : *Global Geomorphology*, Longman, 1991.

16. Thornbury, W.D. : *Principles of Geomorphology*, Wiley Eastern, 1969.
17. Wooldridge, S.W. and Morgan, R.S. : *The Physical Basis of Geography - An Outline of Geomorphology*, Longman Green & Co., London, 1959.
18. Wooldridge, S.W.: *The Geographer as Scientist*, Thomas Nelson and Sons Ltd. London, 1956.
19. Holmes, A: *Principles of Physical Geology*, ELBS/VanNostrand Reinhold, 1978 (third edition)

GG:H506 Geography of India

100 Marks

Unit-I	India in the context of south and south east Asia; India: a land of unity and diversity; Structure and relief, drainage, climate and vegetation, natural regions. 20 Marks
Unit-II	Agriculture and agricultural development planning, mineral and power resources, the status of their use and need for conservation; Location and distribution of iron and steel, textile, petrochemical, cement and forest based industries. 20 Marks
Unit-III	Transport and communication, trade and commerce, basis of regional divisions of India — macro, meso and micro — regions of India and planning. 20 Marks
Unit-IV	North East India : structure and relief, climate soils and natural vegetation, resource utilization, population structure and settlement patterns. 20 Marks
Unit-V	Manipur : structure and relief, drainage, climate, soils and natural vegetation, agriculture, mineral and power resources, population, tribes, settlements 20 Marks

Suggested Readings :

1. Deshpade C.D: *India-A Regional Interpretation*, Northern Book Centre, New Delhi, 1992.
2. Farmer, B.H.: *An Introduction to South Asia*, Methuen, London, 1983.
3. Govt. of India: *India-Reference Annual*, 2001 Pub. Div. New Delhi 2001.
4. Govt. of India: *National Atlas of India*, NATMO Publication Division, New Delhi. 1965.
5. Govt. of India: *The Gazetteer of India*. Vol. I & III, Publication division, New Delhi. 1965.
6. Learmonth. A.T.A. et.al(ed): *Man and Land of South Asia*, Concept, New Delhi.
7. Mitra, A.: *Levels of Regional Development India*, Census of India, Vol.1, Part I-A(i) and (ii) New Delhi, 1967.
8. P.Nag and P.Roy : *Geography of India*, Concept Publication, New Delhi 1998.
9. Shafi, M. : *Geography of South Asia*, McMillan & Co., Calcutta, 2000.
10. Singh, R.L(ed): *India : A Regional Geography*, National Geographical Society. India, Varanasi, 1971
11. Spate, O.H.K. and Lear month, A.R.A.: *India and Pakistan: Land, People and Economy*, Methuen & Co., London, 1967.
12. Valdi ya, K.S.: *Dynamic Himalaya*, University Press, Hyderabad, 1998
13. Wadia, D.N.: *Geology of India*, McMillan & Co., London, 1967.
14. Kullar, D.: *India- A Comprehensive Geography*, Kalyani Publishers, New Delhi, 2000
15. Singh ,R.P.: *Geography of Manipur*, NBT, New Delhi
16. Taher,M & Ahmed, P. ; *Geography of North East India*, Mani-Manil Prakash, Guwahati, 2000.
17. Ansari S.A: *Economic Geography of Manipur*, Trio Book House, Imphal

GG:H507 P Cartography -III

100 Marks

Unit I:	Preparation of cross and longitudinal profiles of streams; preparation of average slope map, block diagram , area height curve, hypsometric curve and drainage frequency and density map.	20 marks
Unit II:	Interpretation of geological maps and drawing of geological sections to show the sequence and relationships of structure with relief .	15 marks
Unit III:	Basic principles of land surveying (i) chain and tape, (iii) prismatic compass and (iv) plane table surveying- radiation, intersection and three point problem.	20 marks
Unit IV:	Map projection: general principles, classification; Draw graticules on the following projections by graphical / mathematical methods with suitable outline maps and their properties and uses : Zenithal orthographic, Stereographic, Equal area and Equidistant projections.	15 marks
Unit V:	Map projection :Conical -Bond's, Polyconic and International projections ; Cylindrical-Marcator's , Gall's and Mollweide projections(construction of suitable outline maps by graphical/mathematical methods and properties and uses of the projections).	15 marks
	Record book	7marks
	Viva - voce	8 marks

Note: Questions are to be set according to the marks allotted to units at the time of examination.

Suggested Reading :

1. Monk house, F.J. : *Maps and Diagrams*, Methuen & Co Ltd. , London, 1971.
2. Nag.-P. : *Thematic Cartography and Remote-Sensing*, concept publication, New Delhi, 1953.
3. Raize , Erwin. : *Principals of Cartography* : Mc Graw Hill, Newyork, 1982.
4. Robinson A.H. and sale R.D. : *Elements of Cartography*, John Wiley and sons, New Jersey, 1985
5. Singh, R.L. : *Elements of Practical Geography*, Kalyani Publishers, New Delhi, 1979
6. R.P. Misra: *Fundamentals of Cartography*, Prasaranga, University of Mysore, 1969
7. Gopal Singh: *Map Work and Practical Geography*, Vikas Publishing House Pvt. Ltd., New Delhi, 1996
8. Pal, S.K. : *Statisticsfor geoscientists - Techniques and Applications*, Concept, New Delhi, 1998.
9. Steers, J.A.: *Map Projections*, University of London Press, London.

**BA/BSc 3rd Year
Sixth Semester**

GG:H608 Economic Geography

100 Marks

Unit-I	Definition, nature, scope and recent trends in Economic Geography, its relations with economics and allied subjects, sectors of economy —primary, secondary, tertiary and quaternary.	20 marks
Unit-II	Natural resources : Renewable and non-renewable, biotic and abiotic, conservation of resources; Agriculture-- factors of crop production, major food crops and cash crops of the world.	20 marks
Unit-III	Minerals and Industries : classification of minerals and their world distribution; Industries : factors of localization; Major industries — iron and steel, textile, chemicals, cement, paper, ship building, small scale and cottage industries.	20 marks
Unit-IV	Trade and Transport : geographical factors in their development, water, land and air transport, internal and international trade.	20 marks
Unit-V	Global distribution and concentration of quaternary activities; Disparity between developed and developing countries; India's position in quaternary sector, Impact-of globalization and India's economy, role of multinational companies and rise of IT industry in India.	20 marks

Suggested Readings :

1. Boesch, H.: *A Geography of World Economy*, D.Van Nostrand Co., New York, 1964.
2. Chapman, J .D.: *Geography and Energy*, Longman, London, 1989.
3. Gregor, H.F.: *Geography of Agriculture*, Prentice Hall, New Jersey, USA. -1970
4. Griggs, D.B.: *The Agricultural Systems of the World*, Cambridge University Press, New York, 1974.
5. Gordon L. Clark, Maryann, P.F. and Meric, S.G. : *The Oxford Handbook of Economic Geography*, Oxford University Press, New York, 2000.
6. Hartshorne, T.N. and Alexander, J .W.: *Economic Geography*, Prentice Hall, New Delhi, 1986.
7. Ones, C.F. and Darkenwald, G.G.: *Economic. Geography*, McMillan Co., New York, 1975.
8. Millar E.: *Geography of Manufacturing*, Prentice Hall, New York, 1962.
9. Raza. M and Agrawal, Y.: *Transport Geography of India*, Concept, New Delhi, 1986.
10. Smith, D.M. : *Industrial Location —An Economic Geographical analysis*, John Wiley, New York, 1971.
11. Thomas, R.S.: *The Geography of Economic Activities*, McGraw Hill, New York 1962.
12. Alexander, J .W.: *Economic Geography*, Prentice hall, 1974.

13. Berry, B.J.L, et al. : *Global Economy*, Prentice hall Englewood Cliffs, New Jersey, 1993.
14. Boesch, H: *A Geography of World Economy*, _D.Van Nostrand Co., New York, 1964.
15. Cryson, J. Henry, N., Keeble D. and Martin, R.: *The Economic Geography Reader*, John Wiley & Sons Ltd., Chichester, 2004.
16. Jones, C.F. and Darkenwald, G.G.: *Economic Geography*, Mc Milan Co., New York, 1975.
17. Lee, R. And Wills J. : *Geographies of Economies*, Arnold, London, 1997.
18. Leong G. C. and Nmorgen, G.C: *Human and Economic Geography*, Oxford University Press, London, 1982.

GG: H-609 : World Regional Geography

Marks: 100

Unit I:	Asia—Terrain, pattern, drainage, climate, natural vegetation, soils, spatial distribution of population and economic base of the continent in general; Regional studies of south and south-east Asia.	35 marks
Unit II :	Europe- Physical, economic and demographic characteristics of the continent; Regional studies of British isles and European Union.	20 marks
Unit III:	North and North America- Physical, economic and demographic setup; Regional studies of USA and Brazil.	15 marks
Unit IV:	Australia and Newzealand and Pacific islands- Physical, economic and demographic set up.	15 marks
Unit V :	Africa- Physical, economic and demographic setup.	15 marks

Suggested Readings :

1. Cole, J. : *A Geography of the World's Major Regions*, Routledge, London, 1996.
2. Cole, J.P. : *Latin America-Economic and Social Geography*, Butterwoth USA, 1975.
3. DeBlij, H.J. : *Geography : Regions and Concepts*, John Wiley, New York, 1994.
4. Dickenson, J.P. et at.: *The Geography of the Third World*, Routledge, London, 1996.
5. Dourou, P. : *The Tropical World*, Longman, London, 1980.
6. Jackson, R.H. and Hudman, L.E.: *World Regional Geography: Issues for Today*, JohnWilley, New York, 1991.
7. Kolh, A.: *East Asia-Geography of a Cultural Region*. Mathuen, London, 1977.
8. Minshull, G.N. : *Western Europe*, Hodard & Stoughton, New York, 1984.
9. Patterson, J.H.: *Geography of Canada and the United States*, Oxford University Press, 1985.
10. Songquiao, Z.: *Geography of China*, John Wiley, New York, 1994.
11. Ward, P.W. and Miller, A. : *World Regional Geography : A Question of Place*, John Wiley, New York, 1989.

Note: Internet sources may be used for the areas for which books are not available.

GG :H 610 P Cartography- IV

100 Marks

Unit I: Dumpy level for preparation "of road profile and contouring and theodolite for measurement of heights and distances. 20 marks

Unit II: Remote sensing : orientation of areal photographs under mirror stereoscope , determination of photo scale, identification of objects from the aerial photographs, preparation of base map from the aerial photographs, visual interpretation of satellite imagery for drainage and land use mapping.; Introduction to GIS and GPS. 25 marks

Unit III: Field work and field report under the guidance of teachers: select any area near the institution or elsewhere, collect topo sheets of the area 1:50,000 scale or satellite image, visit the area and identify the land forms, settlement, land use features and compare the same with the topo sheets and / or satellite image, draw sketches and maps of the selected area; conduct field survey and prepare field report. 40 marks

Record book 7 marks

Viva -voce 8 marks

Note: Questions are to be set according to the marks allotted to units at the time of examination.

Suggested Readings:

1. American Society of Photogrammetry : *Manual of remote Sensing*, ASP, Falls Church, V.A. 1983.
2. Barrett E.C. and Curtis : *Fundamental of Remote Sensing and Air Photo Interpretation*, McMillan, New York, 1992.
3. Jefreys, S and John E. : *Geographic Information System - An Introduction*, prentice Hall, New Jersey, 1990.
4. Jones,P.A: *Field Work in Geogaphy*, Longman, London,1968
5. Luder D : *Aerial Photography Interpretation : Principles and Application*, McGraw Hill, New York, 1959.
6. Monk house, F.J. : *Maps and Diagrams*, Methuen, London, 1967.
7. Nag.P. : *Thematic Cartography and Remote-Sensing*, Concept publication, New Delhi, 1953.
8. Raize I. : *Principals of Cartography* : Me Graw Hill, New York, 1982.
9. Kanitkar,T.P.: *Surveying and Leveling*, Roorkee University, Roorkee,1965
10. Robinson A.H. and sale R.D. : *Elements of Cartography*, John Wiley, New Jersey, 1953.