

Maharaja Ganga Singh University, Bikaner

B.A./B.Sc. (HONOURS) GEOGRAPHY

3hrs duration

Maximum marks: 80

Note: The question paper will be divided into three sections.

Section A will contain 10 questions in all (two questions from each unit). Each question will carry 2 marks. All 10 questions are compulsory.

Section B will contain 10 questions in all (two questions from each unit). Candidates have to attempt 5 questions by selecting 1 question from each unit. Each question will carry 6 marks.

Section C will contain 5 questions (one from each unit). Candidates have to attempt any three questions. Each question will carry 10 marks.

(Note: For the subsidiary papers, the evaluation scheme is similar to the B.A./B.Sc. Pass course scheme.)

Course Contents

B.A./B.Sc. Part I	Paper I	Geomorphology
	Paper II	Human Geography
	Paper III	Geographic Information System
	Paper IV	Geography of Rajasthan
		Practical Geography
	Paper V	Micro Economics
	Paper VI	Economy of Rajasthan
B.A./B.Sc. Part II	Paper VII	Climatology and Oceanography
	Paper VIII	Settlement Geography
	Paper IX	Remote Sensing
	Paper X	Geography of India
		Practical Geography
	Paper XI	Macro Economics
	Paper XII	Indian Economy
B.A./B.Sc. Part III	Paper XIII	Hydrology
	Paper XIV	Economic Geography
	Paper XV	Environmental Geography
	Paper XVI	Regional Planning and Development
		Practical Geography
	Paper XVII	Money, Banking and Public Finance
	Paper XVIII	History Of Economic Thought

BA/BSc Part 1

PAPER 1. GEOMORPHOLOGY

1. Earth: Interior Structure; Isostasy; Earth Movements: Plate Tectonics, Earthquakes and Volcanoes; Folds and Faults.
2. Rocks: Characteristics and Classification; Geomorphic Processes: Weathering, Mass Wasting, Cycle of Erosion (Davis and Penck).
3. Evolution of Landforms (Erosional and Depositional): Fluvial, Karst, Aeolian, Glacial, and Coastal.
4. Drainage Basin Morphometry: Drainage Types and Patterns, Stream Orders, Bifurcation Ratio, Stream Frequency, Relief Ratio, Drainage Texture and Density.
5. Slope - Types and Analysis, Hypsometric Curve, River Profiles, Universal Soil Loss Equation.

Reading List

1. Bloom A. L., 2003: *Geomorphology: A Systematic Analysis of Late Cenozoic Landforms*, Prentice-Hall of India, New Delhi.
2. Bridges E. M., 1990: *World Geomorphology*, Cambridge University Press, Cambridge.
3. Chorley R. J. (ed.), 1972: *Spatial Analysis in Geomorphology*, Harper and Row.
4. Christopherson, Robert W., (2011), *Geosystems: An Introduction to Physical Geography*, 8 Ed., Macmillan Publishing Company
5. Gerrarda A. J., 1988: *Rocks and Landforms*, Unwin-Hyman, UK.
6. Kale V. S. and Gupta A., 2001: *Introduction to Geomorphology*, Orient Longman, Hyderabad.
7. Knighton A. D., 1984: *Fluvial Forms and Processes*, Edward Arnold Publishers, London.
8. Mayer L., 1990: *Introduction to Quantitative Geomorphology*, Prentice-Hall, New Jersey.
9. Richards K. S., 1982: *Rivers: Form and Processes in Alluvial Channels*, Methuen, London.
9. Monkhouse F. J., 1970: *Principles of Physical Geography*, American Elsevier.
10. Morisawa M., 1983: *Geomorphological Laboratory Manual*, John Wiley & Sons, New York.
11. Nkapp B. J., 1979: *Elements of Geographical Hydrology*, Unwin- Hyman, UK.
12. Pal S. K., 1998: *Statistics for Geoscientists: Techniques and Application*, Concept, New Delhi. Selby, M.J., (2005), *Earth's Changing Surface*, Indian Edition, OUP
13. Skinner, Brian J. and Stephen C. Porter (2000), *The Dynamic Earth: An Introduction to physical Geology*, 4th Edition, John Wiley and Sons
14. Strahler A. H., 2008: *Modern Physical Geography (4th Edition)*, Wiley-India.
15. Thornbury W. D., 1968: *Principles of Geomorphology*, Wiley.
16. Upton W. B., 1970: *Landforms and Topographic Maps*, John Wiley & Sons, New York.
17. Zavoianu I., 1978: *Morphometry of Drainage Basins*, Elsevier, USA.

Hindi Reading List

1. Gautam, A (2010): *Bhautik Bhugol*, Rastogi Publications, Meerut.
2. Prasad, G (2008): *Bhu-Akriti Vigyan – Sidhant tatha Sathalroop*, Sharda Pustak Bhawan, Allahabad.
3. Tikkaa, R N (1989): *Bhautik Bhugol ka Swaroop*, Kedarnath Ram Nath, Meerut.
4. Singh, S (2009): *Bhautik Bhugol ka Swaroop*, Prayag Pustak, Allahabad.
5. Singh R L & Rana P B Singh (1991): *Prayogtmak Bhugol ke Mool Tatva*, Kalyani Publishers, New Delhi.

PAPER 2. HUMAN GEOGRAPHY

1. Nature & Scope; Traditional and Contemporary Approaches; Fundamental Principles; Man-environment relationship: Determinism, Possibilism, Probabilism; Dichotomy in Physical & Human Geography.
2. Races -classification & distribution; Early economic activities of Mankind (Grazing, Fishing & Shifting Cultivation)-Patterns & Changes; Concept of Ethnicity & it's implications; Tribal groups in India-Ecology & adaptation.
3. Population growth & distribution- factors and distribution; Population Composition (Age, Sex, Rural-Urban, Economic)- determinants and patterns; Population Dynamics; Migration- Patterns, Causes, Effects, Theories; Concepts of Under-population, Over-population & Optimum population.
4. Classification and distribution of Religions; Major Linguistic families; Cultural Regions; Geographic elements of the State; Unitary & Federal States; Frontiers & Boundaries.
5. Human population, resource & technology- Malthusian and Boserupian models; Demographic Transition Theory; Human Adaptation in Modern Society- Agricultural, Urban & Metropolitan; Globalisation- Historical forms, causes, impacts, Globalisation & development debate.

Reading List

1. Chandna, R.C. (2010) *Population Geography*, Kalyani Publisher.
2. Hassan, M.I. (2005) *Population Geography*, Rawat Publications, Jaipur
3. Daniel, P.A. and Hopkinson, M.F. (1989) *The Geography of Settlement*, Oliver & Boyd, London.
4. Johnston R; Gregory D, Pratt G. et al. (2008) *The Dictionary of Human Geography*, Blackwell Publication.
5. Jordan-Bychkov et al. (2006) *The Human Mosaic: A Thematic Introduction to Cultural Geography*. W. H. Freeman and Company, New York.
6. Kaushik, S.D. (2010) *Manav Bhugol*, Rastogi Publication, Meerut.
7. Maurya, S.D. (2012) *Manav Bhugol*, Sharda Pustak Bhawan, Allahabad.
8. Hussain, Majid (2012) *Manav Bhugol*. Rawat Publications, Jaipur.
9. Raj Kumar Sharma. *Manav Bhugol*, Himanshu Publications, Udaipur.
10. Shrikant Dikshit & Ramdev Tripathi, *Sanskritik Bhugol*, Vasundhara, Gorakhpur.
11. Gayatri Prasad, *Sanskritik Bhugol*, Sharda Pustak Bhagwan, Allahabad.
12. H.M. Saxena, *Rajnitik Bhugol*, Rastogi, Meerut.
13. Sudeepta Adhikari, *Political Geography*, Rawat Publications, Jaipur.
14. Joseph Stiglitz, *Making Globalisation Work*. Norton 2006.
15. Manfred B. Seger, *Globalisation: A Very Short Introduction*.
16. Sunanda Sen. *Globalisation and Development*. National Book Trust 2015.

PAPER 3. GEOGRAPHICAL INFORMATION SYSTEM

1. Geographical Information System (GIS): Definition and Components; Geographic Phenomenon - Discrete and Continuous; Global Positioning System (GPS); Basic Elements of GIS: People, Data, Hardware, Software, Methods.
2. Spatial Data Types – Nominal, Ordinal, Interval and, Ratio; Raster Data Structure – regular tessalations and irregular tessalations; Vector Data Structure - Point, Line, Polygon; Topology; Scale and Resolution; Attribute data-Queries and Analysis

3. Spatial data import; Geo-referencing of analogue maps; applying reference spheroids, datums and projections; Coordinate System; Digitizing; Linking spatial and attribute data; Spatial Queries
4. Mapping - qualitative data; quantitative data; elevation data; time-series data; Element of map design; Color Symbolology
5. Spatial Analysis: Classification; retrieval; measurement functions; Overlay functions; Neighborhood Classification, Connectivity functions; GIS Applications: suitability analysis for finding best site for a new school or municipal water storage facility; Mapping Population Density; Flood Hazard Risk Mapping; Landslide/Earthquake Hazard Risk Mapping

Reading List

1. *Bhatta, B. (2010) Analysis of Urban Growth and Sprawl from Remote Sensing, Springer, Berlin Heidelberg.*41
2. *Burrough, P.A., and McDonnell, R.A. (2000) Principles of Geographical Information System-Spatial Information System and Geo-statistics. Oxford University Press*
3. *Chauniyal, D.D. (2010) Sudur Samvedan evam Bhogolik Suchana Pranali, Sharda Pustak Bhawan, Allahabad*
4. *Heywoods, I., Cornelius, S and Carver, S. (2006) An Introduction to Geographical Information system. Prentice Hall.*
5. *Otto Huisman and Rolf A. de By (2009), Principles of Geographic Information Systems, ITC, Hengelosestraat, the Netherlands*

PAPER IV: GEOGRAPHY OF RAJSTHAN

1. Introduction: Formation and administrative setting of the state, Geological structure, Relief, Physiographic regions, Drainage, Climate, Soils, Natural vegetation.
2. Agricultural and economic aspects of the state: Food and commercial crops, Main irrigation sources, types and their intensity, waste land and desert land development programmes, Livestock and dairy development.
3. Power and energy resources: Hydro based, Thermal, Atomic, Solar, Biogas; Mineral resources and industries.
4. Demographic structure: growth, distribution, density, urban- rural, occupational structure, literacy and cultural heritage; Tribes of Rajasthan: Bhil and Grasia; Factors affecting the development of transportation and trade in the state.
5. Geographical regions of Rajasthan, Detailed study of Marusthali, Aravalli, Hadoti and Eastern Plain.

Reading List:

1. *Mishra, V C: Geography Rajasthan, National Book Trust, New Delhi, 1967.*

2. *Sharmas H.S. & M.L.: Geographical Facts of Rajasthan.*
3. *Bhalla L R: Rajasthan ka Bhoogol, Kuldip Prakashan, Ajmer.*
4. *Sharm & Sharma: Rajasthan ka Bhoogol, Pancheel Prakashan, Jaipur.*
5. *Saxena, H M: Rajasthan ka Bhoogol, Rajsthn Hindi Granth Academy, Jaipur.*
6. *Sharma Dinesh Chandra & Puspa Sharma: Rajasthan Aaj Tak.*

Practical Geography B.A/B.Sc. Part I

1. Scales – concept, application and graphical construction of plain, comparative and diagonal scales.
2. Map Projections – Classification, properties, uses and graphical construction of zenithal, cylindrical, conical and conventional
4. Representation of Relief Features: Qualitative (Hachure, Hill-shading, Layer-tinting) and Quantitative (Contours and Form-lines; Construction of slopes, conical hill, plateau, waterfall, ridge, saddle, valleys, gorge, and cliff)
5. Topographical Maps – Scheme and Interpretation; Profiles: Meaning, Significance, Types, Vertical Scale and Exaggeration
6. Chain-tape survey

Practical Record: A Project File, comprising exercise on scales, map projections, interpretation of topographic sheet, and relief features.

Reading List

1. *Anson R. and Ormelling F. J., 1994: International Cartographic Association: Basic Cartographic Vol. Pregmen Press.*
2. *Gupta K.K. and Tyagi, V. C., 1992: Working with Map, Survey of India, DST, New Delhi.*
3. *Mishra R.P. and Ramesh, A., 1989: Fundamentals of Cartography, Concept, New Delhi.*
4. *Monkhouse F. J. and Wilkinson H. R., 1973: Maps and Diagrams, Methuen, London.*
5. *Rhind D. W. and Taylor D. R. F., (eds.), 1989: Cartography: Past, Present and Future, Elsevier, International Cartographic Association.*
6. *Robinson A. H., 2009: Elements of Cartography, John Wiley and Sons, New York.*
7. *Sharma J. P., 2010: Prayogic Bhugol, Rastogi Publishers, Meerut.*
8. *Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.*
9. *Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi*
10. *Singh R L & Rana P B Singh(1991) Prayogtmak Bhugol ke Mool Tatva, Kalyani Publishers, New Delhi*
11. *Sharma, J P (2010) Prayogtmak Bhugol ki Rooprekha, Rastogi Publications, Meerut*
12. *Singh, R L & Dutta, P K (2012) Prayogatmak Bhugol, Central Book Depot, Allahabad*

(Subsidiary Paper BA/BSc Part I)

PAPER V: MICRO ECONOMICS

1. Introduction: Nature and scope of economics, methodology in economics Micro-Macro, Static and dynamic analysis, choice as an economic problem, basic postulates, Laws of demand and supply.
2. Consumer's Behaviour: Utility, Cardinal and ordinal approaches; Indifference curve; consumer's equilibrium (Hicks); Giffin goods, Elasticity of demand-price, income and cross elasticities. Consumer's surplus. Engel curve.
3. Theory of Production and Costs: Production function, iso-quant, law of variable proportions, returns to scale; economies of scale; Different concepts of cost and revenue and their interrelation.
4. Market Structure: Market forms - Perfect and imperfect markets; Equilibrium of a firm and industry under Perfect competition, monopoly and price discrimination. Control of Monopoly Power. monopolistic competition.
5. Factor Pricing: Marginal productivity theory of distribution; Theories of wage determination; Rent-Scarcity rent, Differential rent: Quasi rent; Classical and Keynesian theories of interest, Profit - Innovation, risk and uncertainty theories.

Reading List:

- 1 Bach, G.L. (1977), *Economics, Prentice Hall of India, New Delhi*
- 2 Gauld, J.O. and Edward, P.L. (1996), *Microeconomic Theory, Richard Irwin, Homewood.*
- 3 Handerson, J. and R.E. Quandt (1980). *Microeconomic Theory: A Mathematical Approach, McGraw Hill, New Delhi*
- 4 Heathfield and Wibe (1987). *An Introduction to Cost and Production Functions, Macmillan, London.*
- 5 Koutsoyiannis, A. (1990). *Modern Microeconomics, Macmillan.*
- 6 Lipsey, R.G. and K.A. Chrystal (1999), *Principles of Economics (9th Edition), Oxford University Press, Oxford.*
- 7 Mansfield, E. (1997). *Microeconomics (9th Edition), W.W. Norton and Company, New York.*
- 8 Ray, N.C. (1975). *An introduction to Microeconomics, Macmillan Company of India Ltd., Delhi.*
- 9 Ryan, W.J.L. (1962). *Price Theory, Macmillan and Co. Ltd., London.*
- 10 Samulson, P.A. and W.D. Nordhaus (1996). *Economics, Tata McGraw Hill, New Delhi.*
- 11 Stonier, A.W. and D.C. Hague (1972). *A Text Book of Economic*
- 12 Varian, H.R. (2000) *Intermediate Micro economics : A Modern Approach (5th edition) EastWest-press, New Delhi.*

PAPER VI: ECONOMY OF RAJASTHAN

1. Position of Rajasthan in Indian economy: Population, Area, Agriculture, Industry and Infrastructure, Population size and growth. District-wise distribution of rural and urban population, occupational structure and human resources development (Literacy, health and nutrition indicators), Problem of poverty and unemployment.
2. Natural resource endowments; land, water, livestock, forests and minerals; state domestic products and its trends. Environmental pollution and the problems of sustainable development.
3. Agriculture land utilization, Major crops and cropping pattern. Land Reforms, Rajasthan Tenancy Act, ceiling on land and distribution of land, Animal husbandry; Importance of livestock, dairy development programme, Problems of sheep and goat husbandry. Irrigation and power infrastructure in the state.
4. Industrial development in the state during Five Year Plans. Regional variation in industrial development, small scale industries and handicrafts. Industrial policy, role of RFC, RSMDC and RIICO in the industrial development of Rajasthan.
5. Tourism development in Rajasthan. Special Area Programmes DPAP, Desert Development, Tribal Area Development and Aravallies development, IRDP Planning in the state; Objectives and achievements. Constraints in the economic development of Rajasthan.

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Section B will contain 10 questions in all (two questions from each unit). Candidates have to attempt 5 questions by selecting 1 question from each unit. Each question will carry 6 marks.

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	Paper XVII	Money, Banking and Public Finance
	Paper XVIII	History Of Economic Thought

B.A./B.Sc. Part II

PAPER VII. CLIMATOLOGY AND OCEANOGRAPHY

1. Atmospheric Composition and Structure – Variation with Altitude, Latitude and Season; Insolation and Temperature – Factors and Distribution, Heat Budget, Temperature Inversion.
2. Atmospheric Pressure and Winds – Planetary Forces affecting Winds, General Circulation, Jet Streams; seasonal winds; local winds; Monsoon - Origin and Mechanism
3. Atmospheric Moisture – Evaporation, Humidity, Condensation, Fog and Clouds, Precipitation Types, Stability and Instability; Tropical Cyclones, Extra Tropical Cyclones,
4. Koppen's and Thornthwaite's Climatic Classification Systems; the characteristics of different terrestrial climate types according to the Koppen Climate Classification Scheme.
5. Ocean Floor Topography, Oceanic Movements: Waves, Currents and Tides; Salinity and Temperature; and Coral Reefs.

Reading List

1. Barry R. G. and Carleton A. M., 2001: *Synoptic and Dynamic Climatology*, Routledge, UK.
 2. Barry R. G. and Corley R. J., 1998: *Atmosphere, Weather and Climate*, Routledge, New York.
 3. Critchfield H. J., 1987: *General Climatology*, Prentice-Hall of India, New Delhi
 4. Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: *The Atmosphere: An Introduction to Meteorology*, Prentice-Hall, Englewood Cliffs, New Jersey.
 5. Oliver J. E. and Hidore J. J., 2002: *Climatology: An Atmospheric Science*, Pearson Education, New Delhi.
 6. Trewartha G. T. and Horne L. H., 1980: *An Introduction to Climate*, McGraw-Hill.
 7. Gupta L S (2000): *Jalvayu Vigyan, Hindi Madhyam Karyanvay Nidishalya, Delhi Vishwa Vidhyalaya, Delhi*
 8. Lal, D S (2006): *Jalvayu Vigyan, Prayag Pustak Bhavan, Allahabad*
 9. Vatal, M (1986): *Bhautik Bhugol, Central Book Depot, Allahabad*
 10. Singh, S (2009): *Jalvayu Vigyan, Prayag Pustak Bhawan, Allahabad.*
 11. Anikouchine W. A. and Sternberg R. W., 1973: *The World Oceans: An Introduction to Oceanography*, Prentice-Hall.
 12. Garrison T., 1998: *Oceanography*, Wordsworth Company, Belmont.
 13. Gerald S., 1963: *General Oceanography: An Introduction*, John Willey & Sons, New York.
 14. Kershaw S., 2000: *Oceanography: An Earth Science Perspective*, Stanley Thornes, UK.
 15. King C. A. M., 1962: *Oceanography for Geographers*, Edward Arnold.
 16. Pinet P. R., 2008: *Invitation to Oceanography (Fifth Edition)*, Jones and Barlett Publishers, USA, UK and Canada.
 17. Sharma R. C. and Vatal M., 1980: *Oceanography for Geographers*, Chaitanya Publishing House, Allahabad.
 18. Stowe K., 1987: *Essentials of Ocean Science*, John Wiley & Sons, New York.
 19. Sverdrup K. A. and Armbrust, E. V., 2008: *An Introduction to the World Ocean*, McGraw Hill, Boston.
 20. Thurman H. V., 1996: *Essentials of Oceanography*, Prentice-Hall, New Jersey.
- Hindi Reading List:
21. Lal D S (2007): *Jalvayu aewam Samudra Vigyan, Sharda Pustak Bhawan, Allahbad*
 22. Singh, S (2009): *Bhatik Bhugol ka Swaroop, Prayak Pustak Bhawan, Allahabad*
 23. Gautam A, (2010): *Bhautik Bhugol, Rustogi Publications, Meerut*

PAPER VIII: GEOGRAPHY OF INDIA

1. Physical: Physiographic Divisions, soil and vegetation, climate (characteristics and classification), Drainage characteristics
2. Population: Distribution and growth, Structure
2. Minerals: Distribution and Utilisation of Iron Ore, Copper, Bauxite, Mica, and Gypsum;
Power Resources: Distribution and Utilisation of Coal, Petroleum, Gas, Uranium;
Crops:- Production and distribution of Rice, Wheat, Pulses, Cotton, Coffee and Tea.
3. Industry and Transportation:- Industrial development and localization- Iron & Steel, Cotton Textile, Automobile and Information Technology; Transportation- Development of Road, Rail, Inland Waterways and Airways.
4. Population: Distribution, Growth and Structure of Population;
Social: Race, Caste, Religion, Language, Tribes and their correlates
5. Regionalization of India: Physiographic (R. L. Singh), Socio-cultural (Sopher), Economic (Sengupta)

Reading List

1. *Deshpande C. D., 1992: India: A Regional Interpretation, ICSSR, New Delhi.*
2. *Johnson, B. L. C., ed. 2001. Geographical Dictionary of India. Vision Books, New Delhi.*
3. *Mandal R. B. (ed.), 1990: Patterns of Regional Geography – An International Perspective. Vol. 3 – Indian Perspective.*
4. *Sdyasuk Galina and P Sengupta (1967): Economic Regionalisation of India, Census of India*
5. *Sharma, T. C. 2003: India - Economic and Commercial Geography. Vikas Publ., New Delhi.*
6. *Singh R. L., 1971: India: A Regional Geography, National Geographical Society of India.*
7. *Singh, Jagdish 2003: India - A Comprehensive & Systematic Geography, Gyanodaya Prakashan, Gorakhpur.*
8. *Spate O. H. K. and Learmonth A. T. A., 1967: India and Pakistan: A General and Regional Geography, Methuen.*
9. *Tirtha, Ranjit 2002: Geography of India, Rawat Pubs., Jaipur & New Delhi.*
10. *Pathak, C. R. 2003: Spatial Structure and Processes of Development in India. Regional Science Assoc., Kolkata.*
11. *Tiwari, R.C. (2007) Geography of India. Prayag Pustak Bhawan, Allahabad*
12. *Sharma, T.C. (2013) Economic Geography of India. Rawat Publication, Jaipur*

PAPER IX: SETTLEMENT GEOGRAPHY

1. Rural Settlements- Definition, Nature & Characteristics of Rural Settlements; Morphology of Rural Settlements- Site, Situation & Types; Layout- Internal and External; Rural House types & Building Material with respect to India.

2. Census categories of Rural Settlements in India; Social Segregation in Rural areas; Spatial Organization - Size, Spacing & Hierarchy of Settlements; Social & Environmental Issues in Rural Settlements- Empowerment of Women, Poverty, Occupational Health Hazards.
3. Urban Settlements- Census definition & categories in India; Urban Morphology- Models of Burgess, Homer Hoyt, Harris & Ullman; City Region and Conurbation; Metropolitan concept.
4. Urban Economic Base- Basic & Non-Basic Functions; Role of Informal Sector in Urban Economy; Functional Classification of Cities- Harris, Nelson, McKenzie; Patterns of Urbanization in Developed & Developing countries.
5. Contemporary Urban Issues- Problems of Housing, Slums, Civic amenities (Water & Transport), Urban Crime; Case Studies of Delhi, Mumbai, Chandigarh with respect to Land Use & Urban Issues.

Reading List

1. Fyfe N. R. and Kenny J. T., 2005: *The Urban Geography Reader*, Routledge.
2. Graham S. and Marvin S., 2001: *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*, Routledge.
3. Hall T., 2006: *Urban Geography*, Taylor and Francis.
4. Kaplan D. H., Wheeler J. O. and Holloway S. R., 2008: *Urban Geography*, John Wiley.
5. Knox P. L. and McCarthy L., 2005: *Urbanization: An Introduction to Urban Geography*, Pearson Prentice Hall New York.
6. Knox P. L. and Pinch S., 2006: *Urban Social Geography: An Introduction*, Prentice-Hall.
7. Pacione M., 2009: *Urban Geography: A Global Perspective*, Taylor and Francis.
8. Sassen S., 2001: *The Global City: New York, London and Tokyo*, Princeton University Press.
9. Ramachandran R (1989): *Urbanisation and Urban Systems of India*, Oxford University Press, New Delhi
10. Ramachandran, R., 1992: *The Study of Urbanisation*, Oxford University Press, Delhi
11. Singh, R.B. (Eds.) (2001) *Urban Sustainability in the Context of Global Change*, Science Pub.,Inc., Enfield (NH), USA and Oxford & IBH Pub., New Delhi.
12. Singh, R.B. (Ed.) (2015) *Urban development, challenges, risks and resilience in Asian megacities*.

PAPER X: REMOTE SENSING

1. Remote Sensing: Definition; Basics of Remote Sensing; Electro-magnetic Radiation; Radiance and Reflectance; Interaction of Electro-magnetic Radiation with the Atmosphere and the Earth Surface; Atmospheric Scattering: Rayleigh Scatter; Mie Scatter; Non-Selective Scatter,
2. Satellite Platforms; Sensors- push broom and whisk broom; Air Photos; Basics of Photogrammetry; Spectral Reflectance of Earth Surface Features – Vegetation, Soil, Water, Snow and Ice.

3. Image Processing and Interpretation (Digital and Manual): Pre-processing (Radiometric and Geometric Correction); Enhancement (Filtering); Image Fusion Indices- vegetation, tasseled cap,
4. Image Interpretation: Visual Interpretation, Digital Image Classification (Supervised and Un-supervised); Vegetation Indices; Tasseled-cap Indices, Principal Component Analysis
5. Application of Remote Sensing for Mapping and Detecting Changes in - Agriculture land-use, urban land-use, Forest-cover, Snow-cover, Water-bodies, Surface Temperature.

Reading list:

1. Bhatta , B. (2008) *Remote Sensing and GIS*, Oxford University Press, New Delhi.
2. Campbell J. B., 2007: *Introduction to Remote Sensing*, Guildford Press
3. Chauniyal, D. (2010) *Sudur Samvedana Avam Bhaugolik Suchna Pranali*, Sharda Pustak Bhawan, Allahabad.
4. Jensen, J. R. (2005) *Introductory Digital Image Processing: A Remote Sensing Perspective*, Pearson Prentice-Hall.
5. Joseph, G. 2005: *Fundamentals of Remote Sensing*, United Press India.
6. Lillesand T. M., Kiefer R. W. and Chipman J. W., 2004: *Remote Sensing and Image Interpretation*, Wiley. (Wiley Student Edition).
7. Li, Z., Chen, J. and Batsavias, E. (2008) *Advances in Photogrammetry, Remote Sensing and Spatial Information Sciences* CRC Press, Taylor and Francis, London
8. Klaus Tempfi, Norman Kerle, Gerrit C. Huurneman and Lucas L.F. Janssen (2009). *Principles of remote Sensing: and introductory textbook, 4th Edition, ITC Educational Textbook Series;2)*
8. Mukherjee, S. (2004) *Textbook of Environmental Remote Sensing*, Macmillan, Delhi.
9. Nag P. and Kudra, M., 1998: *Digital Remote Sensing, Concept*, New Delhi.
10. Singh R. B. and Murai S., 1998: *Space-informatics for Sustainable Development*, Oxford and IBH Pub.

PRACTICAL GEOGRAPHY Practical B.A/B.Sc. Part II

1. Thematic Maps – classification and types;
2. Principles of Map Design
3. Thematic Mapping Techniques – Chorochromatic, Chorochromatic, Choropleth, Isopleth, Dot Maps, Multiple Dot Maps (Stilgenbauer, Sten de Geer), Diagrammatic maps.
2. Diagrammatic Data Presentation – Line, Bar, Circle, Pyramid, Sub-Divided Circle, Block Pile, Ring.
4. Cartographic Overlays – Point, Line and Areal Data.
5. Field Survey: Socio-economic Survey of village or locality.
6. Prismatic compass survey

Reading List

1. Cuff J. D. and Mattson M. T., 1982: *Thematic Maps: Their Design and Production*, Methuen Young Books
2. Dent B. D., Torguson J. S., and Holder T. W., 2008: *Cartography: Thematic Map Design (6th Edition)*, Mcgraw-Hill Higher Education
3. Gupta K. K. and Tyagi V. C., 1992: *Working with Maps*, Survey of India, DST, New Delhi.
4. Kraak M.-J. and Ormeling F., 2003: *Cartography: Visualization of Geo-Spatial Data*, Prentice-Hall.
5. Mishra R. P. and Ramesh A., 1989: *Fundamentals of Cartography*, Concept, New Delhi.
6. Sharma J. P., 2010: *Prayogic Bhugol*, Rastogi Publishers, Meerut.
7. Singh R. L. and Singh R. P. B., 1999: *Elements of Practical Geography*, Kalyani Publishers.
8. Slocum T. A., McMaster R. B. and Kessler F. C., 2008: *Thematic Cartography and Geovisualization (3rd Edition)*, Prentice Hall.

9. Tyner J. A., 2010: *Principles of Map Design*, The Guilford Press.
10. Sarkar, A. (2015) *Practical geography: A systematic approach*. Orient Black Swan Private Ltd., New Delhi
11. Singh, L R & Singh R (1977): *Manchitra or Paryaogatamek Bhugol*, Central Book Depot, Allahabad
12. Bhopal Singh R L and Dutta P K (2012) *Prayogatama Bhugol*, Central Book Depot, Allahabad.

(Subsidiary Paper BA/BSc Part II)

PAPER X: MACRO ECONOMICS

Duration – 3hrs Max. Marks - 100

Note : The question paper shall contain three sections. Section-A shall contain 10 questions two from each unit of 2 marks each. The candidate is required to answer all the questions. The answer should not exceed 50 words. Section-B shall contain 5 questions one from each unit with internal choice. Each question shall be of 7 marks. The answers should not exceed 200 words. The candidate is required to answer all the questions. Section-C shall contain 5 questions of 15 marks each, one from each unit. The candidate is required to answer any three questions. The answer shall not exceed 500 words.

UNIT-I : National Income Nature and scope of Macro Economics, National income- Concepts and measurement of national income, Cyclic flow of income and expenditure, National income accounting.

UNIT-II : Output , Employment and consumption The classical theory of employment, Say's law of market, Keynes objection to the classical theory; Keynesian theory of output and employment, The principles of effective demand, Consumption function- average and marginal propensity to consume.

UNIT-III : Investment, Saving and rate of interest Investment function- Autonomous and Induced Investment, Marginal efficiency of capital, Saving function, Saving and Investment equality. The concept of multiplier, investment multiplier. Classical, Neo- Classical and Keynesian theories of interest.

UNIT-IV : Trade Cycles Nature and characteristics of trade cycle; Hawtrey's monetary theory, Hayek's over-investment theory; Keynes view of trade cycle. The concept of accelerator, Samuelson and Hicks multiplier-accelerator interaction model. Control of trade cycle.

UNIT-V : Economic Growth Sources of growth, Growth models- Harrod and Domar. Neo classical growth models-Solow. Technical progress model- Kaldor's model of economic growth.

SUGGESTED BOOKS * Jhingan M.L.- Macro Economics * Gupta, S.B. (1994), Monetary Economics, S. Chand and Co., Delhi. * Shapiro, E. (1996), Macroeconomics Analysis, Galgotia Publications, New Delhi. * Vaish, M.C. Macro Economics. * Ojha B.L. – Macro Economics * Nathuramka L.N.- Macro Economics * Gupta R.D. & Lekhi R.K.- Post Keynesian economics

PAPER-XII : INDIAN ECONOMY

Duration – 3hrs Max. Marks - 100

Note : The question paper shall contain three sections. Section-A shall contain 10 questions two from each unit of 2 marks each. The candidate is required to answer all the questions. The answer should not exceed 50 words. Section-B shall contain 5 questions one from each unit with internal choice. Each

question shall be of 7 marks. The answers should not exceed 200 words. The candidate is required to answer all the questions. Section-C shall contain 5 questions of 15 marks each, one from each unit. The candidate is required to answer any three questions. The answer shall not exceed 500 words.

UNIT-I : Pre-British Period Indian economy in the Pre-British period- Structure and organization of villages, towns, industries and handicrafts. Economic Consequences of the British Rule-General overall impact; colonial exploitation form and consequences; case of protection of Indian industries. The theory of drain-its pros and cons. Basic features; Natural resources, Land, water and forest resources.

UNIT-II : Structure of Indian Economy Broad demographic features, Population size and growth rates, sex composition, rural urban migration, occupational distribution, problem of overpopulation, population policy, infrastructure development. Agriculture - Nature and importance, Trends, agricultural production and productivity, factors determining productivity; Land reforms; New agricultural strategy and green revolution, Rural credit, agricultural marketing, agriculture and WTO. Poverty and inequality; Unemployment, Problem of rising prices in Indian Economy.

UNIT-III : Industry Industrial development during the planning period, Industrial licensing policy MRTP ACT, FERA and FEMA; Industrial policy of 1991; Growth and problems of small scale industries, Role of public sector enterprises in India's industrialization.

UNIT-IV : Planning in India Objectives; strategy; broad achievements and failures; Current Five Year Plan objectives, allocation and targets; New economic reforms liberalization, privatization and globalization; Progress of privatization and globalization in India.

UNIT-V : External Sector Role of foreign trade; Trends in exports and imports; Composition and direction of India's foreign trade; Balance of payment crisis and the New economic reforms - Exports promotion measures and the new trade policies, Foreign capital - FDI, aid, Multinational corporations (MNCs) and their impact on Indian Economy. The relevance of SWADESHI.

SUGGESTED BOOKS * Datt, R.K., P.M. Sundhram (2001), Indian Economy, S. chand & Co. Ltd., New Delhi
* Dhingra, I.C. (2000), The Indian Economy : Environment and Policy Sultan Chand & Sons, New Delhi *
Dutt, R.C. (1950), The Economic History of India Under Early British Rule, Low Price Publications, Delhi. *
Misra, S.K. & V.K. Puri (2001), Indian Economy - Its Development Experience, Himalaya Publishing House, Mumbai. *
Nathuramka L.N.- Indian Economics * Ojha B.L.- Indian Economics

Maharaja Ganga Singh University, Bikaner

B.A./B.Sc. (HONOURS) GEOGRAPHY

3hrs duration

Maximum marks: 80

Note: The question paper will be divided into three sections.

Section A will contain 10 questions in all (two questions from each unit). Each question will carry 2 marks. All 10 questions are compulsory.

Section B will contain 10 questions in all (two questions from each unit). Candidates have to attempt 5 questions by selecting 1 question from each unit. Each question will carry 6 marks.

Section C will contain 5 questions (one from each unit). Candidates have to attempt any three questions. Each question will carry 10 marks.

(Note: For the subsidiary papers, the evaluation scheme is similar to the B.A./B.Sc Pass course scheme.)

Course Contents

B.A./B.Sc. Part I	Paper I	Geomorphology
	Paper II	Human Geography
	Paper III	Geographic Information System
	Paper IV	Geography of Rajasthan
		Practical Geography
	Paper V	Micro Economics
	Paper VI	Economy of Rajasthan
B.A./B.Sc. Part II	Paper VII	Climatology and Oceanography
	Paper VIII	Settlement Geography
	Paper IX	Remote Sensing
	Paper X	Geography of India
		Practical Geography
	Paper XI	Macro Economics
	Paper XII	Indian Economy
B.A./B.Sc. Part III	Paper XIII	Hydrology
	Paper XIV	Economic Geography
	Paper XV	Environmental Geography
	Paper XVI	Regional Planning and Development
		Practical Geography
	Paper XVII	Money, Banking and Public Finance
	Paper XVIII	History Of Economic Thought

B.A./B.Sc. Part III

PAPER XIII: ECONOMIC GEOGRAPHY

1. Concept, Classification & Characteristics of Resources: Economic and Environmental approaches to resource utilisation; Resource Depletion and Resource Conservation: Forrester-Meadows model on Limits to Growth; Distribution, Problems & Management of Forests, Soil, Iron Ore, Coal, Petroleum.
2. Primary Activities: Concept, Classification, Importance; Distribution, Problems & Management of Fishing & Livestock Farming; Critical Appraisal of Agricultural Systems- Intensive Agriculture (Rice), Extensive Agriculture (Wheat), Plantation Farming (Tea), Mixed Farming (N W Europe).
3. Secondary Activities: Concept, Classification & Importance; Distribution, Resource base, Potential & Problems in respect to Iron & Steel (Japan, India), Cotton Textile (USA, India), Petrochemicals (USA, India) industries; Industrial association, integration, infrastructure & problems with respect to Lake Region, Kwanton Plain, Damodar Valley Industrial Regions.
4. Tertiary Activities and Services: Concept, Classification & Importance; Trade as an engine and hindrance to growth; International Trade with respect to GATT and WTO; Concept of distance, accessibility & connectivity; Relative cost advantages of different modes of transport;
5. Theories & Models of Economic Geography: Land Use & Agricultural Models of L.D. Stamp, Von Thunen, Weaver; Industrial Location Models of Weber & Losch; Ricardian Theory of International Trade; Taaffe's Network Model.

Reading List

1. Alexander J. W., 1963: *Economic Geography*, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
2. Coe N. M., Kelly P. F. and Yeung H. W., 2007: *Economic Geography: A Contemporary Introduction*, Wiley-Blackwell.
3. Hodder B. W. and Lee Roger, 1974: *Economic Geography*, Taylor and Francis.
4. Combes P., Mayer T. and Thisse J. F., 2008: *Economic Geography: The Integration of Regions and Nations*, Princeton University Press.
5. Wheeler J. O., 1998: *Economic Geography*, Wiley.
6. Durand L., 1961: *Economic Geography*, Crowell.
7. Bagchi-Sen S. and Smith H. L., 2006: *Economic Geography: Past, Present and Future*, Taylor and Francis.

8. Willington D. E., 2008: *Economic Geography*, Husband Press.
9. Clark, Gordon L.; Feldman, M.P. and Gertler, M.S., eds. 2000: *The Oxford*

PAPER XIV: ENVIRONMENTAL GEOGRAPHY

1. Nature & Scope of Environmental Geography; Ecological Concepts; Elements and Types of Ecosystems; Structure of Ecosystems (Food Chains & webs, Trophic Levels, Ecological Pyramids, Habitat & Niche); Ecosystem Dynamics (Energy Flow, Nutrient Flows, Productivity).
2. Geography as Human Ecology; Man-Environment relationship with respect to Population Size, Types of Economy and Technology; Man-Environment Relationships- Historical Progression; Adaptation in different Biomes.
3. Environmental Problems in Tropical, Temperate and Polar Ecosystems; Emerging Environmental Issues- Food Security, Deforestation, Global Warming, Ozone Layer Depletion, Biodiversity Conservation.
4. Concept of Environmental Management- Soil, Forest, Water & Energy Resource management; Concept of Sustainable Development- evolution, need & characteristics.
5. International Initiatives for Environmental Degradation Redressal - UN Conference on the Human Environment (1972), World Commission on Environment and Development (1987), Montreal Protocol (1987), United Nations Conference on Environment and Development (1992), Kyoto Protocol (1997), World Summit on Sustainable Development (2002), UN Conference on Sustainable Development (2012), Paris Agreement (2015)

Reading List

1. Chandna R. C., 2002: *Environmental Geography*, Kalyani, Ludhiana.
2. Cunningham W. P. and Cunningham M. A., 2004: *Principals of Environmental Science: Inquiry and Applications*, Tata Macgraw Hill, New Delhi.
3. Goudie A., 2001: *The Nature of the Environment*, Blackwell, Oxford.
4. Singh, R.B. (Eds.) (2009) *Biogeography and Biodiversity*. Rawat Publication, Jaipur
5. Miller G. T., 2004: *Environmental Science: Working with the Earth*, Thomson BrooksCole, Singapore.
6. MoEF, 2006: *National Environmental Policy-2006*, Ministry of Environment andForests, Government of India.
7. Singh, R.B. and Hietala, R. (Eds.) (2014) *Livelihood security in Northwestern Himalaya: Case studies from changing socio-economic environments in Himachal Pradesh, India*.
8. *Advances in Geographical and Environmental Studies*, Springer 8. Odum, E. P. et al, 2005: *Fundamentals of Ecology*, Ceneage Learning India.
9. Singh S., 1997: *Environmental Geography*, Prayag Pustak Bhawan. Allahabad. 10. UNEP, 2007: *Global Environment Outlook: GEO4: Environment For Development*, United Nations Environment Programme. 11. Singh,

- M., Singh, R.B. and Hassan, M.I. (Eds.) (2014) Climate change and biodiversity: Proceedings of IGU Rohtak Conference, Volume 1. Advances in Geographical and Environmental Studies, Springer*
12. Singh, R.B. (1998) *Ecological Techniques and Approaches to Vulnerable Environment*, New Delhi, Oxford & IBH Pub.
13. Singh, Savindra 2001. *Paryavaran Bhugol, Prayag Pustak Bhawan, Allahabad. (in Hindi)*

PAPER XV: HYDROLOGY

1. Definition and scope of Hydrology; Distribution of world's water resources; Global Hydrological Cycle; Man's interference in hydrological cycle.
2. Elements of hydrological cycle: Precipitation- types, characteristics, variations; Interception; Evaporation- from water surfaces & soil; Evapotranspiration.
3. Elements of hydrological cycle: Factors affecting Infiltration; Soil Moisture Storage; Runoff-sources, components, controlling factors.
4. Groundwater: Occurrence, Factors affecting Storage, Movement; Physical & chemical properties of groundwater; Groundwater resources in India- occurrence, exploitation.
5. Principles of water balance and their application, its relevance in crop geography; Water pollution; Need for water management.

Reading List

1. Andrew. D. ward and Stanley, Trimble (2004): *Environmental Hydrology, 2nd edition, Lewis Publishers, CRC Press.*
2. Karanth, K.R., 1988 : *Ground Water: Exploration, Assessment and Development, Tata- McGraw Hill, New Delhi.*
3. Ramaswamy, C. (1985): *Review of floods in India during the past 75 years: A Perspective. Indian National Science Academy, New Delhi.*
4. Rao, K.L., 1982 : *India's Water Wealth 2nd edition, Orient Longman, Delhi.*
5. Singh, Vijay P. (1995): *Environmental Hydrology. Kluwar Academic Publications, The Netherlands.*
5. Dakshinamurthy C. *Water Resources of India and their Utilisation in Agriculture. IARI, New Delhi 1973.*
6. J.A.A. Jones. *Global Hydrology: Processes, Resources and Environmental Management. Long man, London 1997.*
7. Singh, M., Singh, R.B. and Hassan, M.I. (Eds.) (2014) *Landscape ecology and water management. Proceedings of IGU Rohtak Conference, Volume 2. Advances in Geographical and Environmental Studies, Springer*

PAPER XVI: REGIONAL PLANNING AND DEVELOPMENT

1. Definition, Characteristics and Types of Region; Methods of Regionalisation; Concept, Need and Dimensions of Regional Planning; Types of Regional Planning; Regional Concept in Regional Planning- advantages and limitations.
2. Characteristics of an Ideal Planning Region; Regional Types (Formal and Functional, Uniform and Nodal, Single-Purpose and Composite) in the context of Planning; Regional Hierarchy;

Concept of Development; Indicators of Regional Development; Levels of Regional Development in India.

3. Theories and Models for Regional Planning and Development: Rostow's Model, Cumulative Causation Model of G. Myrdal, Growth Pole Model of Perroux, Growth Centre Model of Boudville, Centre-Periphery Model of Friedman, Hirschman's Model of Trickle Down & Polarisation Effect; Dispersal-based development models.

4. Regional Plans of Developed Countries (TVA, Polders) and Developing Countries (DVC, NCR); Planning for Problem Regions: Hilly, Tribal, Drought-Prone with respect to India.

5. Regionalisation of India for Planning (Agro-Ecological Zone); Concept of Multi-Level Planning; Decentralised Planning; Role of Panchayati Raj in development; Problems of Regional Development in India.

Reading list:

1. Adell, Germán (1999) *Literature Review: Theories and Models Of The Peri-Urban Interface: A Changing Conceptual Landscape*, Peri-urban Research Project Team, Development Planning Unit, University College London
2. Bhatt, L.S. (1976) *Micro Level Planning in India*. KB Publication, Delhi
3. Deshpande C. D., 1992: *India: A Regional Interpretation*, ICSSR, New Delhi.
4. Dreze J. and A. Sen, *Indian Development: Select Regional Perspectives* (Oxford: Oxford University Press, 1996).
5. Ses, Amratya (2000) *Development as Freedom*. Random House, Toronto
6. Raza, M., Ed. (1988). *Regional Development. Contributions to Indian Geography*. New Delhi, Heritage Publishers.
7. Rapley, John (2007) *Understanding Development: Theory and Practice in the 3rd World*. Lynne Rienner, London.
8. Schmidt-Kallert, Einhard (2005) *A Short Introduction to Micro-Regional Planning*, Food and Agriculture Organization of the United Nations (FAO)
9. Sdyasuk Galina and P Sengupta (1967): *Economic Regionalisation of India, Census of India*.
- 10- R. C. Chandna. *Regional Planning and Development*. Kalayani Publication.
- 11 Srivastava, Sharma & Chauhan. *Pradesh Niyojan aur Santulit Vikas*. Vasundhara, Gorakhpur.

Practical B.A/B.Sc. Part III

1. Study of Weather Maps- Weather Symbols; Interpretation of Indian Daily Weather Maps (Summer, Monsoon, Winter)

2. Climatic and Related Diagrams- Wind-Rose, Climograph, Hythergraph, Climatograph, Ergograph, Rainfall Dispersion Diagram, Water Budget Graph.

3. Preparation of Maps/Diagrams by using following methods & techniques- Kendall's Agricultural Productivity by using Ranking Method; Location Quotient for agricultural, industrial and population data; Lorenz Curve; Road Density Map (Length of roads per unit area); Cropping Intensity; Triangular Diagram; Scatter Diagram.

4. Use of Plane Table Survey techniques (Radiation, Intersection, Traversing, Three Point Problem) for mapping.

Reading List

1. Hammond P. and McCullagh P. S., 1978: *Quantitative Techniques in Geography: An Introduction*, Oxford University Press.
2. Sharma J. P., 2010: *Prayogic Bhugol*, Rastogi Publishers, Meerut.
3. Singh R. L. and Singh R. P. B., 1999: *Elements of Practical Geography*, Kalyani Publishers.
4. Slocum T. A., McMaster R. B. and Kessler F. C., 2008: *Thematic Cartography and Geovisualization (3rd Edition)*, Prentice Hall.
5. Sarkar, A. (2015) *Practical geography: A systematic approach*. Orient Black Swan Private Ltd., New Delhi
6. Singh, L R & Singh R (1977): *Manchitra or Prayogamek Bhugol* , Central Book Depot, Allahabad
7. Bhopal Singh R L and Dutta P K (2012) *Prayogatama Bhugol*, Central Book Depot, Allahabad.

(Subsidiary Paper BA/BSC Part III)

PAPER XVII Money, Banking and Public Finance

PAPER XVIII History Of Economic Thought