

Maharaja Ganga Singh University, Bikaner

B.A./B.Sc. (HONOURS) GEOGRAPHY (2024-2025)

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.

Structure of Program: B.A./ B.Sc. (Honors) Subject: Geography

Semester-I											
Paper Code	Paper Name	Code	L	T	P	Total Credits	Maximum Marks			Minimum Passing Marks (%)	Hours in a week
							Internal Marks	External Marks	Total Marks		
GEO4.5DCCT12	Geomorphology	DCCT	3	1	0	4	20	80	100	36	6
GEO4.5DCCT13	Geographic Information System	DCCT	3	1	0	4	20	80	100	36	6
GEO4.5DCCP14	Practical	DCCP	0	0	4	4	20	80	100	36	6
GEO4.5DCCT15A	Micro Economics	DCCS	5	1	0	6	30	120	150	36	6
	Or										
GEO4.5DCCT15B	History of India from Earliest Times to 1206 AD	DCCS	5	1	0	6	30	120	150	36	6
Total Credits						18					
Total Marks											

Semester-II											
Paper Code	Paper Name	Code	L	T	P	Total Credits	Maximum Marks			Minimum Passing Marks (%)	Hours in a week
							Internal Marks	External Marks	Total Marks		
GEO4.5DCCT22	Climatology	DCCT	3	1	0	4	20	80	100	36	6
GEO4.5DCCT23	Remote Sensing	DCCT	3	1	0	4	20	80	100	36	6
GEO4.5DCCP24	Practical (Combined for both papers)	DCCP	0	0	4	4	20	80	100	36	6
GEO4.5DCCT25A	Indian Economy	DCCS	5	1	0	6	30	120	150	36	6
	OR										
GEO4.5DCCT25B	World History (1453 to 1870 AD)	DCCS	5	1	0	6	30	120	150	36	6
Total Credits						18					
Total Marks											

*L= Lecture; T= Tutorial; P= Practical

- A candidate shall be required to obtain 36% marks to pass in theory, practical and internals separately.
- The marks of Internal Evaluation – 30 Marks (20 Marks theory paper, 10 Marks practical paper) should be given based on seminar/assignments/presentations/class tests/logical thinking/application of knowledge and skills, other activities etc. based on syllabus.

BA/BSc Geography (Honors): Semester-I

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 (by 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. Gerrard 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.
12. 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. 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 Symbology
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 Infromation system*. Prentice Hall.
5. Otto Huisman and Rolf A. de By (2009), *Principles of Geographic Information Systems*, ITC, Hengelosetraat, the Netherlands

Practical B.A/B.Sc. Semester 1

1. Scale – concept, application and graphical construction of plain, comparative and diagonal scales.
 2. Enlargement and Reduction of Maps - Graphical Methods
 3. Topographical Maps – Scheme and Interpretation; Profiles: Meaning, Significance, Types, Vertical Scale and Exaggeration
 3. Chain-tape survey
- Practical Record: Project File comprising of exercises 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

Paper 3: MICRO CONOMICS

(Subsidiary Paper)

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.

OR

HISTORY OF INDIA FROM EARLIEST TIMES TO 1206 A.D.

Unit- I

Main sources of Ancient Indian History; Different Samvat (era) prevalent (used) in Ancient Indian History; Impact of Geography on Indian History and Culture; Features of Indus-Saraswati Civilization; Society, Polity, Economy, Culture and Religion as reflected in Vedic literature; 6th Cent. B.C. and the Rise of Buddhism and Jainism; The rise of Janpadas and Republics.

Unit- II

Rise of Magadha upto the Nandas; Magadha Empire and contribution of Chandragupta Maurya; Ashoka – His Policies and Dhamma; Mauryan Administration, Cultural Achievements of Mauryan period; Causes of decline of the Mauryan Empire.

Unit- III

Different political powers in Pre-Gupta period - Sunga, Satavahan, Saka and Kushana; Prominent rulers and their contribution in Pre-Gupta Period - Pushyamitra Sunga, Gautamiputra Shatkarni, Rudradaman I and Kanishka I; Sangam Age-Literature, Society and Culture; Economic Progress in the Pre-Gupta period with special reference to trade and commerce.

Unit- IV

Early History of the Gupta Dynasty upto Chandra Gupta-I; Prominent Rulers of Gupta Dynasty and their achievements - Samudra Gupta, Chandra Gupta-II, Skand Gupta; Features of Gupta Administration; Cultural Revivalism and development of Science and Technology during Gupta Period.

Unit- V

India in the Post-Gupta Period: Formation and Expansion of Vardhana Empire– Harsh; Features of Chola, Chalukya and Pallava administration; Tripartite Struggle, Contribution of Vignaraja Chahamana, Kumara Pala Chalukya and Bhoja Parmara; Factors leading to disintegration of Rajput states.

Books Recommended:

1. R.S. Tripathi : History of Ancient India.
2. N.N. Gosh: Early History of India.
3. R.K. Mookerji: Man and Thought in Ancient India.
4. R.C. Majumdar: The History and Culture of the Indian People. Relevant volumes, Bhartiya Vidya Bhawan, Bombay.
5. R.S.Sharma :Pracheen Bharat (in Hindi)
6. G.S.P.Mishra: Pracheen Bharat (in Hindi)
7. Upendra Singh : A History of Ancient and Early Medieval India.

BA/BSc Geography (Honors): Semester-II

PAPER 4: CLIMATOLOGY

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 Climatic Classification Systems; the characteristics of different terrestrial climate types included in the Koppen's Climate Classification Scheme.
5. Thornthwaite's Climatic Classification Systems; the characteristics of different terrestrial climate types included in the Thornthwaite's Climate Classification Scheme

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. Lal D S (2007): *Jalvayu aewam Samudra Vigyan, Sharda Pustak Bhawan, Allahbad*
12. Singh, S (2009): *Bhatik Bhugol ka Swaroop, Prayak Pustak Bhawan, Allahabad*
13. Gautam A, (2010): *Bhautik Bhugol, Rustogi Publications, Meerut*

PAPER 5: 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 (Combined for both papers) B.A/B.Sc. Sem II

1. Map Projections – Classification, properties, uses and graphical construction of Zenithal (Polar Zenithal Gnomonic, Stereographic, Orthographic, Equi-Distant); Cylindrical (Simple, Equal-Area); Conical (Simple Conical With One Standard Parallel, Simple Conical with Two Standard Parallels, Bonne's and Polyconic); and Conventional (Mollweide's).
2. Representation of Relief Features: Qualitative (Hachure, Hill-shading, Layer-tinting) and Quantitative (Spot Heights, Bench Marks, Trigonometrical Stations, Contours and Form-lines) Methods.
3. Representation of slopes, conical hill, plateau, waterfall, ridge, saddle, Col/Pass, valleys, and cliff through Contours, and drawing their profiles
3. Socio-economic survey of a rural or urban area and preparation of Report

PAPER 6: INDIAN ECONOMY

(Subsidiary Paper)

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

OR

WORLD HISTORY (1453-1950 A.D.)

Unit – I

Renaissance: Meaning, causes and development of art and literature; Mercantilism and Commercial Revolution; Reformation and Counter Reformation; Beginning of Colonialism; American War of Independence: Causes and Results.

Unit – II

Industrial Revolution: Causes and results; French Revolution: causes and results; Napoleon Bonaparte-Conquests and Reforms.

Unit – III

Vienna Congress; Matternich System and Concert of Europe; French Revolution of 1848 and its impact; Unification of Italy and Germany; Eastern Question with special reference to Crimean War and Berlin Settlement.

Unit – IV

Imperialism in Asia and Africa- Causes and Results; First World War- Causes and results; Causes and results of Bolshevik Revolution; Versailles settlement; Causes of the rise of Fascism and Nazism.

Unit – V

League of Nations-aims, achievements and causes of failure; Second World War – causes and results; U.N.O.'s birth, organization and achievements; Emergence of Modern China , Japan and Turkey.

Books recommended :

1. C.J.F.Hayes: A Political and Cultural History of Modern Europe (2 Vols)
2. H.M.Vinacke: A History of the Far East in Modern Time (Also in Hindi).
3. Lee Gershoy: The French Revolution and Napoleon, Central Book Depot, Allahabad, 1960.
4. K.S. Latourette: Short History of the Far East, New York.
6. Burns, E.M.: Western Civilization : Their History and Their Culture