



## Under-Graduate (B.A./B.Sc.) Course Structure

Courses for B.A./B.Sc. Part I, Part II and Part III Degree Course in Geography shall be effective from the examinations of 2023, 2024 and 2025 respectively.

The B.A./B.Sc. Part I and Part II examinations in Geography will comprise two theory papers each and one practical examination each and B.A./B.Sc. Part III will comprise three theory papers and one practical examination. Each theory paper will be of three hours duration and will carry 50 marks as the maximum marks. The practical examination will be of six hours duration (in two parts of three hours duration) and will carry 50 marks as the maximum marks for B.A./B.Sc. Part I and Part II and 75 marks for B.A./B.Sc. Part III. The practical examination will be conducted by two examiners (One internal and one external examiners in University Centre) and two examiners in case of Constituent Colleges (One examiner from the Constituent College and one from University Centre). It is obligatory to pass in the aggregate marks of the theory examination and in the practical examinations separately.

The details of theory papers and practical examination courses are given below:

| UG (B.A./B.Sc.) Part One |           |                                     |          |             |
|--------------------------|-----------|-------------------------------------|----------|-------------|
| Theory                   | Paper-I   | Fundamentals of Physical Geography  | 50 Marks | Three Hours |
| Theory                   | Paper-II  | Fundamentals of Human Geography     | 50 Marks | Three Hours |
| Practical                | Paper-III | Practical (Lab Work & Field Survey) | 50 Marks | Six Hours   |

| UG (B.A./B.Sc.) Part Two |           |                                     |          |             |
|--------------------------|-----------|-------------------------------------|----------|-------------|
| Theory                   | Paper-I   | Regional Geography                  | 50 Marks | Three Hours |
| Theory                   | Paper-II  | Geography of India                  | 50 Marks | Three Hours |
| Practical                | Paper-III | Practical (Lab Work & Field Survey) | 50 Marks | Six Hours   |

| UG (B.A./B.Sc.) Part Three |           |                                      |          |             |
|----------------------------|-----------|--------------------------------------|----------|-------------|
| Theory                     | Paper-I   | History of Geographical Thought      | 50 Marks | Three Hours |
| Theory                     | Paper-II  | Earth Dynamic System                 | 50 Marks | Three Hours |
| Theory                     | Paper-III | Economic Geography                   | 50 Marks | Three Hours |
| Practical                  | Paper-IV  | Practical (Lab Work & Short Project) | 75 Marks | Six Hours   |



## Programme Outcomes (POs):

PO1: Disciplinary Knowledge — Demonstrate comprehensive knowledge of core areas of geography (physical geography, human geography, and applied/practical components) as laid out in the programme structure.

PO2: Scientific Reasoning — Analyze geographic problems using scientific methods and evidence (e.g., interpreting geomorphic processes, climate classification, oceanographic patterns).

PO3: Technical & Practical Skills — Conduct fieldwork, and perform cartographic exercises required for the practical examinations.

PO4: Data Analysis & GIS Awareness — Apply quantitative techniques to spatial data; demonstrate familiarity with basic concepts of map making and map interpretation.

PO5: Communication — Prepare clear written reports, maps and oral presentations of geographic analyses for academic, professional and public audiences.

PO6: Critical Thinking & Problem Solving — Integrate multidisciplinary information to propose solutions for environmental hazards, land-use planning and resource management.

PO7: Ethical & Environmental Stewardship — Demonstrate awareness of ethical, social and environmental impacts of human activities on natural systems.

PO8: Lifelong Learning & Employability — Show readiness for advanced studies, teaching, research or employment in sectors such as urban & regional planning, environmental management, disaster management, and education.

PO9: Teamwork & Project Management — Collaborate effectively in group field and laboratory tasks and manage small research or applied projects.

PO10: Professionalism & Communication Technologies — Use appropriate information sources and communications technology to access, analyze and present geographic information.

## Programme Specific Outcomes (PSOs)

**PSO1 – Knowledge:** Learners will demonstrate in-depth and systematic knowledge of the core areas of geography, including physical geography, human geography, and geospatial technologies. They will also develop an understanding of the philosophical, ecological, socio-political, and economic foundations of geographic thought and practice.

**PSO2 – Attitude:** Learners will develop a critical and inclusive attitude towards environmental sustainability, cultural diversity, and spatial justice. They will demonstrate ethical awareness and responsibility in dealing with both natural and human environments.



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**PSO3 – Communication:** Learners will exhibit strong communication skills, including effective reading, academic writing, oral presentation, map interpretation, and digital literacy. These skills will enable them to engage meaningfully with academic, professional, and community stakeholders.

**PSO4 – Skills:** Learners will acquire proficiency in spatial analysis, geospatial technologies (GIS, remote sensing), data collection and interpretation, environmental assessment, and regional planning. They will be able to conduct independent research, develop policy-relevant insights, and apply both traditional and modern tools in solving geographic problems.

## B.A./B.Sc. Part I Geography Paper I: Fundamentals of Physical Geography

(Time: 3 Hours, Max Marks 50)

The question paper will consist of 9 questions. The candidate will be required to attempt five questions in all. Question No. 1 will be short note type consisting of two topics from each unit out of which only five are to be attempted. Question No. 1 will be compulsory. The remaining eight questions will be from the four units (two from each unit). The candidate will be required to attempt one question from each unit.

### Course Outcomes (COs):

- **CO1:** Explain the scope, structure and origin of Earth and related geomorphic processes.
- **CO2:** Analyze atmospheric processes and climate classification systems.
- **CO3:** Interpret oceanographic features such as tides, currents, and coral reefs.
- **CO4:** Evaluate ecological processes, soil systems and biomes in relation to sustainability.



- **CO5:** Apply scientific reasoning to interpret physical geography data.

**Mapping of Course Outcomes (COs) with Programme Specific Outcomes (PSOs) and Programme Outcomes (POs):**

| COs / POs | PSO1 | PSO2 | PSO3 | PSO4 | PO1 | PO2 | PO3 | PO4 | PO6 | PO7 | PO10 |
|-----------|------|------|------|------|-----|-----|-----|-----|-----|-----|------|
| CO1       | 3    | 2    | —    | 3    | 3   | 3   | —   | —   | 2   | 2   | —    |
| CO2       | 3    | —    | —    | 3    | 3   | 3   | —   | 2   | 3   | —   | —    |
| CO3       | 3    | 2    | —    | 3    | 3   | 3   | —   | 2   | 3   | 2   | —    |
| CO4       | 3    | 3    | —    | 3    | 3   | 2   | —   | —   | 3   | 3   | —    |
| CO5       | 3    | —    | 3    | 3    | 2   | 3   | 3   | 3   | 3   | —   | 3    |

**Course Content**

**UNIT I:** Meaning & Scope of Physical Geography; Origin of the Earth - Theory of Big Bang, Geological History of Earth; Interior of the Earth; Rocks, Fold, Fault & Weathering; Plate Tectonics, Volcano, Earthquake & Tsunami.

**UNIT II:** Structure & Composition of the Atmosphere; Insolation; Temperature; Pressure belts & Winds; Planetary and Local winds; Humidity and Rainfall, Classification of World Climate: Koeppen & Thornthwaite; Climate types.

**UNIT III:** Depth zones of the Oceans, bottom relief of Pacific, Atlantic and Indian Oceans; Salinity; Tides; Ocean Currents; Coral reefs.

**UNIT IV:** Biosphere: Abiotic and Biotic components; Ecosystems: Structure, functioning & types; Biome types - Equatorial Rainforest, Savanna, Temperate grassland biomes. Soil formation, types, profile & properties.

**Books Recommended:**

1. D. Anderson, A. H. Strahler & A. N. Strahler (2008): Physical Geography and the Environment, Wiley
2. B. Gervais (2016): Living Physical Geography, Macmillan Learning
3. A. H. Strahler & A. N. Strahler (2013): Physical Geography: Science of the Human Environment, Wiley
4. J. Petersen, D. Sack & R. Gabler (2016): Fundamentals of Physical Geography, Cengage Learning
5. L. R. Kump, J. F. Kasting & R. G. Crane (2009): The Earth System, Pearson
6. R. W. Christopherson (2017): Geosystems: An Introduction to Physical Geography, Pearson
7. S. G. David & Andrew Goudie (2013): The Dictionary of Physical Geography, Wiley-Blackwell
8. Savindra Singh (2020): Physical Geography, Pravalika Publication, Prayagraj.
9. डी एस लाल (2015): भौतिक भूगोल, शारदा पुस्तक भवन
10. सविन्द्र सिंह (2020): भौतिक भूगोल, प्रवालिका प्रकाशन



**B.A./B.Sc. Part I Geography**  
**Paper II: Fundamentals of Human Geography**

**(Time: 3 Hours, Max Marks 50)**

The question paper will consist of 9 questions. The candidate will be required to attempt five questions in all. Question No. 1 will be short note type consisting of two topics from each unit out of which only five are to be attempted. Question No. 1 will be compulsory. The remaining eight questions will be from the four units (two from each unit). The candidate will be required to attempt one question from each unit.

**Course Outcomes (COs):**

**CO1:** Describe the scope and approaches of Human Geography.

**CO2:** Interpret population growth, migration and settlement patterns.

**CO3:** Examine agriculture, industries and global trade systems.

**CO4:** Evaluate social processes, stratification and measures of social well-being.

**CO5:** Apply critical thinking to contemporary issues of population, urbanisation and gender.

**Mapping of Course Outcomes (COs) with Programme Specific Outcomes (PSOs) & Programme Outcomes (POs):**

| COs / POs | PSO1 | PSO2 | PSO3 | PSO4 | PO1 | PO2 | PO5 | PO6 | PO7 | PO8 |
|-----------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| CO1       | 3    | 2    | —    | —    | 3   | 3   | —   | 2   | —   | —   |
| CO2       | 3    | —    | —    | 3    | 3   | 3   | —   | 2   | —   | —   |
| CO3       | 3    | 2    | —    | 3    | 3   | 3   | —   | 3   | 2   | 2   |
| CO4       | 3    | 3    | —    | —    | 3   | 2   | —   | 3   | 3   | —   |
| CO5       | 3    | 3    | 3    | —    | 2   | 3   | 2   | 3   | 3   | 2   |

**Course Content**

**UNIT I:** Meaning & Scope of Human Geography; Branches of Human Geography; Determinism, Possibilism, Neo-determinism, Approaches-Ecological, Behavioural, Welfare.

**UNIT II:** Human adaptation to the Environment; Population growth, Distribution, Migration, Problems and Planning; Rural and Urban settlements -Types and Patterns.



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**UNIT III:** Farming types, World Agricultural regions; Minerals: Iron-ore, Coal, and Petroleum; Industry: Iron and Steel, Cotton Textile and Chemical; Major oceanic routes; Pattern of World Trade.

**UNIT IV:** Social processes: Social differentiation and stratification; Social interactions, Social groups, and Organization; Measures of Social Well-being; Healthcare, Education, Housing & Gender Disparity

**Suggested Readings:**

1. A. Jones (2012): Human Geography: The Basics, Routledge
2. D. Dorrell, J. Henderson (2018): Human Geography University of North Georgia Press
3. D. Gregory, R. Johnston & G. Pratt (2009): The Dictionary of Human Geography, Wiley-Blackwell
4. J. M. Rubenstein (2018): Contemporary Human Geography, Pearson
5. J. R. Short (2021) Human Geography: A Short Introduction, Oxford University Press
6. L. Rowntree, M. Lewis, M. Price, W. Wyckoff (2018): Globalization and Diversity, Pearson
7. M. Hussain (2016): Human Geography, Rawat Publications
8. M. Boyle (2014): Human Geography: A Concise Introduction, Wiley-Blackwell
9. एम. हुसैन (2016): मानव भूगोल, रावत प्रकाशन
10. एस. डी. मौर्य (2022): मानव भूगोल, शारदा पुस्तक भवन



**B.A./B.Sc. Part I Geography**  
**Paper III: Practical (Lab Work and Field Survey)**  
(Time: 3+3 Hours, Max Marks 50)

The practical examination will be conducted by two examiners (One internal and one external examiners in University Centre) and two examiners in case of Constituent Colleges i.e., one examiner from the concerned Constituent College (Internal examiner) and one from University Centre. It is obligatory to pass in the aggregate marks of practical examinations separately. The practical examination will be of six hours duration (in two parts of three hours duration) and will carry 50 marks as the maximum marks. Lab Work examination shall be from Unit I & II and shall be of three hours duration. The candidate will be given four questions (Two questions from each Unit I & II) and will be required to attempt three questions in all. Question Paper preparation for Lab work Examination and evaluation of answer books for Lab Work examination will be carried out by the examiner from the University centre. Field survey will be of three hours duration and its evaluation will be carried out by the internal examiner. Viva-voce evaluation will be carried out by both internal and external examiners. Evaluation of sessional record work will be carried out by the internal examiner.

**The division of marks in the practical shall be as follows:**

- Lab Work (Unit I & II) 30 marks
- Field Survey (Unit III): 10 marks.
- Viva-voce based on Field Survey: 05 marks
- Evaluation of sessional record work: 05 marks.

**Course Outcomes (COs):**

**CO1:** Construct scales and apply basic statistical methods in geography.

**CO2:** Represent data using appropriate graphs and cartographic methods.

**CO3:** Conduct surveys using plane table and prismatic compass.

**CO4:** Prepare and present field-based reports and maps.

**CO5:** Demonstrate ICT use and professional practice in practical geography.

**Mapping of Course Outcomes (COs) with Programme Specific Outcomes (PSOs) & Programme Outcomes (POs):**

| COs / POs | PSO1 | PSO2 | PSO3 | PSO4 | PO1 | PO3 | PO4 | PO5 | PO8 | PO9 |
|-----------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| CO1       | 3    | —    | —    | 3    | 3   | 2   | 3   | —   | —   | —   |
| CO2       | 3    | —    | 3    | 3    | 3   | 3   | 3   | 2   | —   | —   |
| CO3       | 3    | —    | —    | 3    | 2   | 3   | 3   | —   | —   | 2   |
| CO4       | 3    | —    | 3    | 3    | 2   | 3   | 3   | 3   | —   | 2   |
| CO5       | 3    | —    | 3    | 3    | 2   | 3   | 3   | 3   | 2   | —   |



## Course Content

### UNIT I: Concept of Scale & Basics of Statistics:

Scale: Definition and Types: Linear, Diagonal, Vernier, Comparative Scale.

Concept of Measurement Scales: Nominal, Ordinal, Interval and Ratio.

Statistical Methods: Frequency Distribution, Class Intervals, Frequency, Frequency Density, Cumulative and Relative Frequency; Measure of Central Tendencies (Ungroup & Group data): Mean, Median & Mode.

### UNIT II: Graphical Representation of Data:

Line graphs, Bar graph, Band graph, Circular graph, Vector graph, Pie graph, Population pyramid, Ergograph, Triangular graphs, Climograph, Hythergraph, Ombrothermic Graph

### UNIT III: Field Survey

Plane Table Survey: Preparation of map by Radial and Intersection methods.

Prismatic Compass Survey: Preparation of map by open & closed traverse.

### Suggested Readings:

1. F. F. Croxton and L. J. Cowden (1990): Applied General Statistics, Prentice Hall of India.
2. M. R. Spiegel (2008): Theory and Problems of Statistics, McGraw Hill International.
3. F. J. Monkhouse and R. H. Williamson (1971): Maps and Diagrams, Methuen, London
4. N. M. Downie and R. W. Heath (1983): Basic Statistical Methods, Harper Row and Co.
5. P. K. Saha and P. Basu (2021): Advanced Practical Geography, Books and Allied (P) Ltd
6. A. Sarkar (2015): Practical Geography: A Systematic Approach, Orient Black Swan
7. R. L. Singh and R. P. B. Singh (2015): Elements of Practical Geography, Kalyani Publishers
8. T. P. Kanitkar and S.V. Kulkarni (2010): Surveying and Levelling, Part I, Ava Prakashan.
9. आर एल सिंह एवं आर. पी बी सिंह (2020): प्रायोगिक भूगोल के मूल तत्व, कल्याणी प्रकाशन
10. रामचन्द्र तिवारी एवं सुधाकर तिवारी, (2013): अभिनव प्रयोगात्मक भूगोल, प्रयाग पुस्तक भवन



**B.A./B.Sc. Part II Geography  
Paper I: Geography of Regions**

**(Time: 3 Hours, Max Marks 50)**

The question paper will consist of 9 questions. The candidate will be required to attempt five questions in all. Question No. 1 will be short note type consisting of two topics from each unit out of which only five are to be attempted. Question No. 1 will be compulsory. The remaining eight questions will be from the four units (two from each unit). The candidate will be required to attempt one question from each unit.

**Course Outcomes (COs):**

**CO1:** Explain concepts, types and methods of regionalisation.

**CO2:** Examine cultural regions, complexes and diffusion of cultures.

**CO3:** Interpret economic regionalisation and effects of globalisation.

**CO4:** Evaluate political regions, nationalism and regional cooperation.

**CO5:** Develop critical thinking on regional inequalities and development issues.

**Mapping of Course Outcomes (COs) with Programme Specific Outcomes (PSOs) & Programme Outcomes (POs):**

| COs / POs | PSO1 | PSO2 | PSO3 | PSO4 | PO1 | PO2 | PO5 | PO6 | PO7 | PO8 |
|-----------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| CO1       | 3    | —    | —    | 3    | 3   | 2   | —   | 2   | —   | —   |
| CO2       | 3    | 3    | —    | 2    | 3   | —   | 2   | —   | 2   | —   |
| CO3       | 3    | —    | —    | 3    | 3   | 2   | —   | 3   | —   | 2   |
| CO4       | 3    | 3    | —    | 3    | 3   | —   | —   | 3   | 2   | 2   |
| CO5       | 3    | 3    | —    | 3    | 2   | 3   | —   | 3   | 2   | 2   |



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**Course Content**

**UNIT I:** Concept of Region; Methods of Regionalization: Systematic vs. Regional Geography, Types of regions (Formal and Functional), Criteria for delimitation of Cultural, Economic and Political regions.

**UNIT II:** Cultural Regions: Language, Religion and Ethnicity in regional context; Cultural complexes, Cultural hearths, Cultural regions and Cultural realms; Diffusion of cultures.

**UNIT III:** Economic Regions: Types of Economic systems (Socialist, Capitalist and Mixed economic system); Bases of Economic regionalisation; Globalisation vs. Localisation.

**UNIT IV:** Political Regions: Territoriality and Nationalism; Regional groupings; Regional organisations of cooperation (SAARC, ASEAN, GCC, SCO).

**Suggested Readings:**

1. D. Gregory, R. Johnston & G. Pratt (2009): The Dictionary of Human Geography, Wiley-Blackwell
2. D. J. Storey (2012): Regions: The Economics and Politics of Territory, Routledge
3. J. Agnew & K. Mitchell (2003): Regional Worlds: Advancing the Geography of Regions, Routledge
4. Price & Lewis (2013): Geography of Regions: A Comparative and Historical Approach, Pearson
5. R. Abler & J. S. Adams (1971): Spatial Organization, Englewood Cliffs, Prentice-Hall.
6. R. B. Kent (2007): Regional Geography: Theory and Practice, Routledge
7. R. J. Johnston & J. Hauer (1990): Regional Geography: Taylor and Francis.
8. W. B. Fisher (2017): Regions in Geography, Routledge
9. ए पी सिंह (2014): प्रादेशिक भूगोल, विज्ञान भारती प्रकाशन
10. आर के जयसवाल (2019): प्रादेशिक भूगोल, ग्लोबल अकादमिक प्रकाशन



## B.A./B.Sc. Part II Geography Paper II: Geography of India

(Time: 3 Hours, Max Marks 50)

The question paper will consist of 9 questions. The candidate will be required to attempt five questions in all. Question No. 1 will be short note type consisting of two topics from each unit out of which only five are to be attempted. Question No. 1 will be compulsory. The remaining eight questions will be from the four units (two from each unit). The candidate will be required to attempt one question from each unit.

### Course Outcomes (COs):

**CO1:** Describe India's physical structure, relief, drainage, soils and natural vegetation.

**CO2:** Analyze agriculture, minerals, industries and energy resources.

**CO3:** Interpret demographic structure, races, tribes and urbanisation.

**CO4:** Evaluate regional development strategies including watershed and SEZs.

**CO5:** Communicate findings on Indian geography through reports and presentations.

### Mapping of Course Outcomes (COs) with Programme Specific Outcomes (PSOs) & Programme Outcomes (POs):

| COs / POs | PSO1 | PSO2 | PSO3 | PSO4 | PO1 | PO2 | PO5 | PO6 | PO7 | PO8 |
|-----------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| CO1       | 3    | —    | —    | 3    | 3   | 2   | —   | 2   | —   | —   |
| CO2       | 3    | —    | —    | 3    | 3   | 3   | —   | 3   | —   | 2   |
| CO3       | 3    | 3    | —    | 2    | 3   | —   | 2   | 3   | 2   | —   |
| CO4       | 3    | 3    | —    | 3    | 2   | 3   | —   | 3   | 2   | 2   |
| CO5       | —    | —    | 3    | 3    | —   | —   | 3   | —   | —   | 3   |

### Course Content

**UNIT I:** India: Structure, Relief and Drainage; Climate, Droughts and Floods, Soil types and distribution; Soil erosion and Conservation; Forests - types and their economic utilization.

**UNIT II:** Agriculture types & Major crops; Major mineral resources, distribution, production, and utilisation; Major energy resources; Major industries and Industrial regions.

**UNIT III:** Population distribution, density, structure, and composition; Major Races and Tribes; Ethnicity and Caste; Pattern of Urbanisation and Urban Development; Metropolitan centres, Million cities and Smart cities.



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**UNIT IV: Regional Development Strategies in India: Metropolitan Regions, Growth Centre, Special Economic Zones, Watershed approach, Micro Level Planning**

**Suggested Readings:**

1. D. N. Wadia (1990): Geology of India.
2. D. R. Khullar (2020): India-A Comprehensive Geography, Kalyani Publishers
3. M. Husain (2017): Geography of India, McGraw Hill Education
4. O. H. K. Spate and A. T. A. Learmonth (1972): India and Pakistan.
5. R. C. Tiwari (2024): Geography of India, Pravalika Publication
6. R. L. Singh (ed.) (1971): India: A Regional Geography, NGSI, B.H.U., Varanasi.
7. S. M. Mathur (1991): Physical Geography of India, National Book Trust (NBT)
8. S. Singh & J. Saroha (2014): Geography of India, Access Publishing
9. ए गौतम (2014): भारत का भूगोल शारदा पुस्तक भवन
10. आर सी तिवारी (2020): भारत का भूगोल, प्रवालिका प्रकाशन



**B.A./B.Sc. Part II Geography**  
**Paper III: Practical (Lab Work and Field Survey)**  
(Time: 3+3 Hours, Max Marks 50)

The practical examination will be conducted by two examiners (One internal and one external examiners in University Centre). In case of Constituent Colleges, one examiner from the concerned Constituent College (Internal examiner) and one from University Centre. It is obligatory to pass in the aggregate marks of practical examinations separately. The practical examination will be of six hours duration (in two parts of three hours duration) and will carry 50 marks as the maximum marks. Lab Work examination shall be from Unit I & II and shall be of three hours duration. The candidate will be given four questions (Two questions from each Unit I & II) and will be required to attempt three questions in all. Question Paper preparation for Lab work Examination and evaluation of answer books for Lab Work examination will be carried out by the examiner from the University centre. Field survey will be of three hours duration and its evaluation will be carried out by the internal examiner. Viva-voce evaluation will be carried out by both internal and external examiners. Evaluation of sessional record work will be carried out by the internal examiner.

**The division of marks in the practical shall be as follows:**

- Lab Work (Unit I & II) 30 marks
- Field Survey (Unit III): 10 marks.
- Viva-voce based on Field Survey: 05 marks
- Evaluation of sessional record work: 05 marks.

**Course Outcomes (COs):**

**CO1:** Construct map projections and transformations.

**CO2:** Apply statistical techniques such as correlation and regression in geography.

**CO3:** Use field survey instruments.

**CO4:** Collaborate on survey tasks and produce technical maps.

**CO5:** Demonstrate analytical use of GIS/cartographic tools.

**Mapping of Course Outcomes (COs) with Programme Specific Outcomes (PSOs) & Programme Outcomes (POs):**

| COs / POs | PSO1 | PSO2 | PSO3 | PSO4 | PO1 | PO2 | PO3 | PO4 | PO6 | PO9 | PO10 |
|-----------|------|------|------|------|-----|-----|-----|-----|-----|-----|------|
| CO1       | 3    | —    | —    | 3    | 3   | —   | 3   | 3   | 2   | —   | —    |
| CO2       | 3    | —    | —    | 3    | —   | 3   | —   | 3   | 3   | —   | —    |
| CO3       | —    | —    | —    | 3    | —   | —   | 3   | —   | —   | 2   | 2    |
| CO4       | —    | —    | 3    | 3    | —   | —   | 3   | —   | —   | 3   | 2    |
| CO5       | 3    | —    | 3    | 3    | —   | —   | 3   | 3   | 3   | —   | 3    |



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## Course Content

### UNIT I: Earths spherical coordinates and their transformation:

The system of Earth's spherical coordinates, Principles of Transformation: Construction of Map Projections and their properties: Conic with Two Standard Parallels Projection, Polyconic Projection, Bonne's Projection, Cylindrical Equal Area Projection, Mercator's Projection, Sinusoidal Projection, Zenithal Equidistant Projection, Zenithal Equal Area Projection, Stereographic Projection (Polar Case).

### UNIT II: Statistical Analysis in Geography

Measure of Dispersion (Ungroup & Group data): Range, Quartile, Mean deviation, Standard Deviation; Variance & Coefficient of Variation, Z-score.

Correlation & Regression Analysis: Spearman's Rank Correlation, Karl Pearson's Product Moment Method & Linear Regression.

### UNIT III: Field Survey

Use of Indian Clinometers- Determination of Spot-heights; Interpolation of Contours.

### Suggested Readings:

1. A. Sarkar (2015): Practical Geography: A Systematic Approach, Orient Black Swan
2. F. F. Croxton and L. J. Cowden (1990): Applied General Statistics, Prentice Hall of India.
3. F. J. Monkhouse and R. H. Williamson (1971): Maps and Diagrams, Methuen, London
4. M. R. Spingel (2008): Theory and Problems of Statistics, McGraw Hill International.
5. P. K. Saha and P. Basu (2021): Advanced Practical Geography, Books and Allied (P) Ltd
6. R. L. Singh and R. P. B. Singh (2015): Elements of Practical Geography, Kalyani Publishers
7. S. Gregory (1978): Statistical Methods and Geographer, Longmans, and Co.
8. T. P. Kanitkar and S.V. Kulkarni (2010): Surveying and Levelling, Part I, Ava Prakashan
9. आर एल सिंह एवं आर. पी बी सिंह (2020): प्रायोगिक भूगोल के मूल तत्व, कल्याणी प्रकाशन
10. रामचन्द्र तिवारी एवं सुधाकर तिवारी, (2013): अभिनव प्रयोगात्मक भूगोल, प्रयाग पुस्तक भवन



**B.A./B.Sc. Part III Geography**  
**Paper I: History of Geographical Thought**

**(Time: 3 Hours, Max Marks 50)**

The question paper will consist of 9 questions. The candidate will be required to attempt five questions in all. Question No. 1 will be short note type consisting of two topics from each unit out of which only five are to be attempted. Question No. 1 will be compulsory. The remaining eight questions will be from the four units (two from each unit). The candidate will be required to attempt one question from each unit.

**Course Outcomes (COs):**

**CO1:** Describe the evolution and scope of geography as a discipline.

**CO2:** Assess contributions of ancient, medieval and renaissance scholars.

**CO3:** Evaluate philosophical and scientific traditions of geographical thought.

**CO4:** Explain dichotomies and approaches in geography.

**CO5:** Apply critical understanding of geography's modern relevance.

**Mapping of Course Outcomes (COs) with Programme Specific Outcomes (PSOs) & Programme Outcomes (POs):**

| COs / POs | PSO1 | PSO2 | PSO3 | PSO4 | PO1 | PO2 | PO5 | PO6 | PO7 | PO8 |
|-----------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| CO1       | 3    | —    | —    | —    | 3   | 2   | —   | 2   | —   | —   |
| CO2       | 3    | —    | 2    | —    | 3   | —   | 2   | 2   | —   | —   |
| CO3       | 3    | 3    | —    | —    | 3   | 2   | —   | 3   | 2   | —   |
| CO4       | 3    | 2    | —    | —    | 3   | 2   | —   | 3   | —   | —   |
| CO5       | 2    | 3    | —    | —    | —   | —   | —   | 3   | 2   | 2   |

**Course Content**

**UNIT I:** Meaning and Scope of Geography; Changing philosophy of geography; Geography as an inter-disciplinary science; Geography as social science; Geography as a synthesizing science; Explanations in Geography

**UNIT II:** Geography in Ancient period; Contributions of Greek, Roman, Indian and Chinese scholars; Geography in the Dark ages—contributions of Arab Geographers; Period of Renaissance, Explorations and Discoveries.



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**UNIT III:** Development of Geography in the Modern classical period; Rise of Philosophical and Scientific analysis in Geography; Contributions of German, French, British, American, and Russian schools of thought.

**UNIT IV:** Dichotomies in Geography: Physical vs Human, Systematic vs Regional, Approaches to the study of Geography - Areal differentiation, Landscape, Ecological and Locational. Development of Geography in Modern age.

**Suggested Readings:**

1. D. Harvey (1986): Explanations in Geography, Edward Arnold.
2. M. Hussain (2014): Evolution of Geographical Thought, Rawat Publication
3. P. Haggett: Geography (1984): A Modern Synthesis, Longman
4. R. Dickinson (1969): The Makers of Modern Geography, Routledge
5. R. D. Dixit (1994): Geographical Thought, Prentice Hall of India
6. R. J. Chorley & P. Haggett (1967): Models in Geography, SAGE Publication
7. R. Minshull (2014): The Changing Nature of Geography, Routledge
8. S. W. Wooldridge & W. G. East (2024): The Spirit and Purpose of Geography, Routledge
9. एम हुसैन (2015): भौगोलिक चिंतन का इतिहास, रावत प्रकाशन
10. एस. डी. मोर्य (2022): भौगोलिक चिंतन का इतिहास, प्रवालिका प्रकाशन



**B.A./B.Sc. Part III Geography  
Paper II: Earth Dynamic System**

**(Time: 3 Hours, Max Marks 50)**

The question paper will consist of 9 questions. The candidate will be required to attempt five questions in all. Question No. 1 will be short note type consisting of two topics from each unit out of which only five are to be attempted. Question No. 1 will be compulsory. The remaining eight questions will be from the four units (two from each unit). The candidate will be required to attempt one question from each unit.

**Course Outcomes (COs):**

**CO1:** Explain theories of plate tectonics, mountain building and erosion cycles.

**CO2:** Interpret landform processes (fluvial, glacial, aeolian, coastal).

**CO3:** Analyze atmospheric processes and circulation patterns.

**CO4:** Evaluate causes and impacts of past and present climate change.

**CO5:** Propose adaptation and mitigation strategies for environmental hazards.

**Mapping of Course Outcomes (COs) with Programme Specific Outcomes (PSOs) & Programme Outcomes (POs):**

| COs / POs | PSO1 | PSO2 | PSO3 | PSO4 | PO1 | PO2 | PO3 | PO6 | PO7 |
|-----------|------|------|------|------|-----|-----|-----|-----|-----|
| CO1       | 3    | —    | —    | —    | 3   | 3   | —   | 2   | —   |
| CO2       | 3    | —    | —    | 2    | 3   | 3   | 2   | —   | —   |
| CO3       | 3    | —    | —    | 2    | 3   | 3   | —   | —   | —   |
| CO4       | 2    | 3    | —    | —    | —   | —   | —   | 3   | 3   |
| CO5       | 2    | 3    | —    | 2    | —   | —   | —   | 3   | 3   |



## Course Content

**UNIT I:** Origin of Continents and Ocean, Basins; Theories of mountain building; Concept of Plate Tectonics, Cycle of erosion by W. M. Davis and W. Penck; Interruption in Normal Cycle of Erosion and Polycyclic relief.

**UNIT II:** Forces effecting the Earth's surface: Endogenetic and Exogenetic Forces, Mechanism of Fluvial, Aeolian, Glacial, Periglacial, Ground water and Coastal process and resultant landforms.

**UNIT III:** Earth's Global Energy Balance, Heat Budget of Earth, Stability and Instability of Atmosphere, Humidity and types of Precipitation, Theories of Precipitation, Air Masses, Tropical and Temperate Cyclones

**UNIT IV:** Climate Change: Climatic records; Evidence of past climatic changes; Causes - Natural and Anthropogenic; Causes of present Climate Change, Possible impacts; Prevention, Mitigation, and Adaptations

## Suggested Readings:

1. A. H. Strahler & A. N. Strahler (2013): Physical Geography: Science of the Human Environment, Wiley
2. E. Aguado & J. E. Burt (2018): Understanding Weather and Climate, Pearson
3. F. Press and R. Siever (2004): The Earth, W. H. Freeman and Co.
4. J. Petersen, D. Sack & R. Gabler (2016): Fundamentals of Physical Geography, Cengage Learning
5. L. R. Kump, J. F. Kasting & R. G. Crane (2009): The Earth System, Pearson
6. R. W. Christopherson (2017): Geosystems: An Introduction to Physical Geography, Pearson
7. S. G. David & Andrew Goudie (2013): The Dictionary of Physical Geography, Wiley-Blackwell
8. Savindra Singh (2020): Physical Geography, Pravalika Publication
9. डी एस लाल (2015): भौतिक भूगोल, शारदा पुस्तक भवन
10. सविन्द्र सिंह (2020): भौतिक भूगोल, प्रवालिका प्रकाशन



**B.A./B.Sc. Part III Geography  
Paper III: Economic Geography**

**(Time: 3 Hours, Max Marks 50)**

The question paper will consist of 9 questions. The candidate will be required to attempt five questions in all. Question No. 1 will be short note type consisting of two topics from each unit out of which only five are to be attempted. Question No. 1 will be compulsory. The remaining eight questions will be from the four units (two from each unit). The candidate will be required to attempt one question from each unit.

**Course Outcomes (COs):**

**CO1:** Explain concepts and approaches of resource utilisation.

**CO2:** Analyze agricultural systems, models and productivity.

**CO3:** Interpret energy resources, trends and geopolitics.

**CO4:** Evaluate industrial location theories and development issues.

**CO5:** Critically assess globalisation and sustainable economic development.

**Mapping of Course Outcomes (COs) with Programme Specific Outcomes (PSOs) & Programme Outcomes (POs):**

| COs / POs | PSO1 | PSO2 | PSO3 | PSO4 | PO1 | PO2 | PO3 | PO6 | PO7 | PO8 |
|-----------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| CO1       | 3    | 2    | –    | –    | 3   | 2   | –   | –   | 2   | –   |
| CO2       | 3    | –    | –    | 2    | 3   | 3   | 2   | –   | –   | –   |
| CO3       | 3    | 2    | –    | –    | 3   | –   | –   | 3   | 2   | –   |
| CO4       | 3    | –    | –    | 2    | 3   | 2   | –   | 3   | –   | –   |
| CO5       | –    | 3    | –    | 2    | –   | –   | –   | 3   | 3   | 2   |



## Course Content

**UNIT I:** Resource; Concept and Classification, Approaches to Resource Utilization; Utilitarian, Conservational, Community based adaptive, Limits to Growth and Sustainable Use of Resources.

**UNIT II:** Classification of world Agricultural system after Whittlesey, Von Thunen's model, Crop Combination and Crop Diversification, Agricultural Productivity and Efficiency.

**UNIT III:** Geographical perspectives on Energy, Global trends and patterns in energy, Energy resources of the World: Coal, Oil, Natural Gas, Nuclear, and Renewable energy, Energy security, Geo-Politics of energy.

**UNIT IV:** Factors influencing Industrial location, Resource based and Foot loose industries, Theories of Industrial Location - Weber and Losch, Gunnar Myrdal's Cumulative Causation Model of Economic Development

## Suggested Readings:

1. B. J. L. Berry & M. D. Ray (1976): The Geography of Economic Systems, Prentice Hall
2. D. Gregory, R. Johnston & G. Pratt (2009): The Dictionary of Human Geography, Wiley-Blackwell
3. G. C. Leong & G. C. Morgan (1975): Human & Economic Geography, Oxford University Press
4. J. M. Rubenstein (2018): Contemporary Human Geography, Pearson
5. J. R. Short (2021): Human Geography: A Short Introduction, Oxford University Press
6. R. S. Thomas & P. B. Corbin (1968): Geography of Economic Activity, McGraw Hill
7. T. A. Hartshorn & J. W. Alexander (1988): Economic Geography, Prentice Hall India
8. Wheeler, J. O. and Muller, P. O., (1986): Economic Geography, John Wiley
9. एम. हुसैन (2016): मानव भूगोल, रावत प्रकाशन
10. एस. डी. मोर्य (2013): मानव एवं आर्थिक भूगोल, शारदा पुस्तक भवन



**B.A./B.Sc. Part III Geography**  
**Paper IV: Practical (Lab Work and Local Area based Project)**  
**(Time: 3Hours + Project based Viva voce, Max Marks 75)**

The practical examination will be conducted by two examiners (One internal and one external examiners in University Centre) and two examiners in case of Constituent Colleges i.e., one examiner from the concerned Constituent College (Internal examiner) and one from University Centre. It is obligatory to pass in the aggregate marks of practical examinations separately. The practical examination will be of six hours duration (in two parts of three hours duration) and will carry 75 marks as the maximum marks. Lab Work examination shall be from Unit I & II and shall be of three hours duration. The candidate will be given four questions (Two questions from each Unit I & II) and will be required to attempt three questions in all. Question Paper preparation for Lab work Examination and evaluation of answer books for Lab Work examination will be carried out by the examiner from the University centre. Viva-voce evaluation will be based on Local area based Project Report and shall be carried out by both internal and external examiners. Evaluation of sessional record work will be carried out by the internal examiner.

**The division of marks in the practical shall be as follows:**

- Lab Work (Unit I & II) 50 marks
- Viva-voce based on Local Area based Project Report: 15 marks
- Evaluation of sessional record work: 10 marks.

**Course Outcomes (COs):**

**CO1:** Interpret geological maps and construct cross-sections.

**CO2:** Apply statistical hypothesis testing in geography.

**CO3:** Conduct local area-based projects with data collection and analysis.

**CO4:** Prepare project reports and present findings effectively.

**CO5:** Demonstrate teamwork, project management and professional ethics.

**Mapping of Course Outcomes (COs) with Programme Specific Outcomes (PSOs) & Programme Outcomes (POs):**

| COs / POs | PSO1 | PSO2 | PSO3 | PSO4 | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO9 |
|-----------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|
| CO1       | 3    | —    | —    | 3    | 3   | —   | 3   | 2   | —   | —   | —   |
| CO2       | 3    | —    | —    | 3    | —   | 3   | —   | 3   | —   | —   | —   |
| CO3       | —    | —    | —    | 3    | —   | —   | 3   | 2   | —   | 3   | 3   |
| CO4       | —    | —    | 3    | 3    | —   | —   | —   | 2   | 3   | —   | —   |
| CO5       | —    | 3    | —    | 3    | —   | —   | —   | —   | —   | —   | 3   |



**UNIT I:**

**Geological Maps:** Profile, Types of Profile and their construction; Representation of rock outcrops, bedding planes, dips and strikes, unconformity and faults. Drawing of cross sections and determination of dip angles and bed thickness. Interpretation of Geological Features.

**Unit II:**

Time Series Analysis: Type of Trend, Measurement of Trend, Free-Hand Method, Semi Average Method, Curve-fitting Method, Mapping Transition matrix.

Hypothesis Testing; Goodness of Fit; Significance and Confidence Levels; Testing Errors; One and Two Tailed Tests; Chi-square Test, Z Test, t Test, F Test

**Unit III:** Students will carry out a Local Area based Project (Prayagraj District) in group of not more than 10 students under supervision of a faculty members. There may be more than one groups working under same faculty member but on a different area or a different geographical aspect. Every student will have to prepare a separate project report upon which his/her viva voce evaluation will be carried out.

**Suggested Readings:**

1. F. F. Croxton and L. J. Cowden (1990): Applied General Statistics, Prentice Hall of India.
2. M. R. Spingel (2008): Theory and Problems of Statistics, McGraw Hill International.
3. F. J. Monkhouse and R. H. Williamson (1971): Maps and Diagrams, Methuen, London
4. N. M. Downie and R. W. Heath (1983): Basic Statistical Methods, Harper Row and Co.
5. P. K. Saha and P. Basu (2021): Advanced Practical Geography, Books and Allied (P) Ltd
6. A. Sarkar (2015): Practical Geography: A Systematic Approach, Orient Black Swan
7. R. L. Singh and R. P. B. Singh (2015): Elements of Practical Geography, Kalyani Publishers
8. T. P. Kanitkar and S.V. Kulkarni (2010): Surveying and Levelling, Part I, Ava Prakashan.
9. आर एल सिंह एवं आर. पी बी सिंह (2020): प्रायोगिक भूगोल के मूल तत्व, कल्याणी प्रकाशन
10. रामचन्द्र तिवारी एवं सुधाकर तिवारी, (2013): अभिनव प्रयोगात्मक भूगोल, प्रयाग पुस्तक भवन