# Maharaja Ganga Singh University

**Bachelor of Arts (B.A.) Honours**

# GEOGRAPHY

## (Semester) 2025-26

Choice Based Credit System (CBCS)

Undergraduate Programme

**(Effective from Academic Year 2025-26)**

# SYLLABUS

# SCHEME OF EXAMINATION AND

# COURSES OF STUDY


Submitted by:

Prof. Rajesh Bhakar

Convenor, Board of Studies for Geography
Maharaja Ganga Singh University, Bikaner

## Preamble

Considering the curricular reforms as instrumental for desired learning outcomes, Maharaja Ganga Singh University made a rigorous attempt to revise the curriculum of postgraduate and undergraduate programmes in alignment with National Education Policy-2020 and UGC Quality Mandate for Higher Education Institutions. The process of revising the curriculum could be prompted with the adoption of "Comprehensive Roadmap for Implementation of NEP". The roadmap identified the key features of the Policy and elucidated the Action Plan with well-defined responsibilities and indicative timeline for major academic reforms. The University Grants Commission (UGC) has devised a series of regulations and directives over time with the intention of enhancing the higher education system's quality and enforcing minimum standards in Higher Educational Institutions (HEIs) throughout India. The recent academic reforms suggested by the UGC have contributed to an overarching enhancement of the higher education system.

With NEP-2020 in background, the revised curricula articulate the spirit of the Policy by emphasizing upon- integrated approach to learning; innovative pedagogies and assessment strategies; multidisciplinary and cross-disciplinary education; creative and critical thinking; ethical and constitutional values through value-based courses; 21st century capabilities across the range of disciplines through life skills, entrepreneurial and professional skills; community and constructive public engagement; social, moral and environmental awareness; exposure to Indian knowledge system, cultural traditions and classical literature through relevant courses offering 'Knowledge of India'; fine blend of modern pedagogies with indigenous and traditional ways of learning; flexibility in course choices; student-centric participatory learning; imaginative and flexible curricular structures to enable creative combination of disciplines for study; offering multiple entry and exit points, integration of extracurricular and curricular aspects; exploring internships with local industry, businesses, artists and crafts persons; closer collaborations between industry and higher education institutions for technical, vocational and science programmes; and formative assessment tools to be aligned with the learning outcomes, capabilities, and dispositions as specified for each course.

## Choice Based Credit System (CBCS)

The Choice Based Credit System (CBCS), a part of academic reform process to enhance quality of education and facilitate transferability of students from one University/institution to another at the national and international level, provides substantive autonomy to teachers to formulate their own curricula and enable them to introduce innovations in teaching and learning process and upgrade overall quality of higher education. The CBCS provides scope for Comprehensive and Continuous Evaluation (CCE) of students and encourages them to learn. The CBCS provides a cafeteria type approach in which the students can take courses of their choice, learn at their own pace, undergo additional courses, acquire more than the required credits, and adopt an interdisciplinary approach to learning.

The grading system is widely regarded as an improvement over the traditional marks system, which is why leading institutions in India and abroad have adopted it. Thus, there's a strong rationale for establishing a consistent grading system. This would facilitate seamless student mobility among institutions within the country and abroad, while also allowing prospective employers to accurately assess students' performances. To achieve the desired standardization in the grading system and the method for calculating the Cumulative Grade Point Average (CGPA) based on students' examination results,the UGC has devised these comprehensive guidelines.

# Outline of Choice Based Credit System

**Core Course:** A course which should compulsorily be studied by a candidate as a core requirement is termed as a Core course.

- **Discipline Specific Core Course Theory (DCCT)**
- **Discipline Specific Core Course Practical (DCCP)**

**Elective Course:** Generally, a course which can be chosen from a pool of courses, and which maybe very specific or specialized or advanced or supportive to the discipline/ subject of study or which provides an extended scope, or which enables an exposure to some other discipline/subject/domain or nurtures the candidate's proficiency/skill is called an Elective Course.

**Discipline Specific Elective (DSE) Course:** Elective courses may be offered by the main discipline/subject of study is referred to as Discipline Specific Elective. The University/Institute may also offer discipline related Elective courses of interdisciplinary nature (to be offered by main discipline/subject of study).

**Dissertation/Project:** An elective course designed to acquire special/advanced knowledge, such as supplement study/support study to a project work, and a candidate studies such a course on his own with an advisory support by a teacher/faculty member is called dissertation/project.

**Generic Elective (GE) Course:** An elective course chosen generally from an unrelated discipline/subject, with an intention to seek exposure is called a Generic Elective.

**P.S.:** A core course offered in a discipline/subject may be treated as an elective by other discipline/subject and viceversa and such electives may also be referred to as Generic Elective.

**Ability Enhancement Courses (AEC):** The Ability Enhancement (AE) Courses may be of two kinds: Ability Enhancement Compulsory Courses (AECC) and Skill Enhancement Courses (SEC). **AECC** courses are the courses based upon the content that leads to Knowledge enhancement; i. Environmental Science and ii. English/MIL Communication. These are mandatory for all disciplines. **SEC** courses are value-based and/or skill-based and are aimed at providing hands-on-training, competencies, skills, etc.

**Ability Enhancement Compulsory Courses (AECC):** Environmental Science, English Communication/MIL Communication.

**Skill Enhancement Courses (SEC):** These courses may be chosen from a pool of courses designed to provide value-based and/or skill-based knowledge.

## Introducing Research Component in Under-Graduate Courses

Project work/Dissertation is considered as a special course involving application of knowledge in solving / analyzing /exploring a real-life situation / difficult problem. Project/Dissertation work would be of 6 credits. Project/Dissertation work may be given in lieu of a discipline specific elective paper.

# B.A. Honours Subject: Geography

## Program Outcome

The B.A. Honours Geography undergraduate program is designed to achieve the following outcomes-

1. To provide opportunities for the holistic development of the students and to enable them to make an effective contribution to the community, society, and nation.
2. To strive for scholastic excellence, instill moral values, create responsible citizens and to build global competencies.
3. To create a conducive environment for experiential learning.
4. To instill the core values of faith, integrity, accountability, and creativity.
5. To enable the students to contribute to building a more sustainable and equitable world.
6. To enhance historical, political, environmental, spiritual, moral, and ethical consciousness.
7. To develop analytical and critical thinking skills in the field of research.
8. To sensitize young minds through education towards social, cultural, psychological, and economic well-being and to reach out to the underprivileged.
9. To integrate and interlink knowledge, skills, values, and attitudes to action.
10. To provide a general understanding of the concepts and principles of selected areas of study thus enabling the students to decide upon specialized professional choices.

## Program Specific Outcome

On successful completion of the Program the studentshall be able to:

1. Demonstrate proficiency in knowledge of essential concepts of geography about man and environment; nature and society to exhibit their awareness and responsibility towards environment and society at large.
2. Identifying, interpret and analyze human and environmental issues from local to global scales by critically assessing their various perspectives to promote sustainable development of humanity.
3. Develop integrated geographical knowledge to avail yourself of a plethora of opportunities in the field of town planning, urban management, cartography, tourism, civil services, teaching, survey, wildlife, population studies, community development etc.

# Structure of Program: B.A. (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** | | |
| GEO4.5AECT11 | Compulsory Non – CGPA Paper | AEC | 2 | 0 | 0 | 2 | - | 50 | 50 | 36 Non-CGPAS / NS | |
| GEO4.5DCCT12 | Geomorphology | DCCT | 3 | 1 | 0 | 4 | 20 | 80 | 100 | 36 | 4 |
| GEO4.5DCCT13 | Geographical Information System | DCCT | 3 | 1 | 0 | 4 | 20 | 80 | 100 | 36 | 4 |
| GEO4.5DCCP14 | Practical ( Combined for both papers) | DCCP | 0 | 0 | 4 | 4 | 20 | 80 | 100 | 36 | 8 |
| GEO4.5DCCT15A | Subsidiary Economics* | DCCS | 5 | 1 | 0 | 6 | 30 | 120 | 150 | 36 | |
| | Or | | | | | | | | | | |
| GEO4.5DCCT15B | Subsidiary History* | DCCS | 5 | 1 | 0 | 6 | 30 | 120 | 150 | 36 | |
| **Total Credits** | | | | | | **20** | | | | | |
| **Total Marks** | | | | | | | | | | | |

*For Subsidiary paper of Economics or History refer to respective Semester and subject syllabus of B. A. Pass course.

## 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 | | |
| GEO4.5AECT21 | Compulsory Non – CGPA Paper | AEC | 2 | 0 | 0 | 2 | - | 50 | 50 | 36 Non-CGPA | |
| GEO4.5DCCT22 | Climatology | DCCT | 3 | 1 | 0 | 4 | 20 | 80 | 100 | 36 | 4 |
| GEO4.5DCCT23 | Remote Sensing | DCCT | 3 | 1 | 0 | 4 | 20 | 80 | 100 | 36 | 4 |
| GEO4.5DCCP24 | Practical ( Combined for both papers) | DCCP | 0 | 0 | 4 | 4 | 20 | 80 | 100 | 36 | 8 |
| GEO4.5DCCT25A | Subsidiary Economics* | DCCS | 5 | 1 | 0 | 6 | 30 | 120 | 150 | 36 | |
| | Or | | | | | | | | | | |
| GEO4.5DCCT25B | Subsidiary History* | DCCS | 5 | 1 | 0 | 6 | 30 | 120 | 150 | 36 | |
| **Total Credits** | | | | | | **20** | | | | | |
| **Total Marks** | | | | | | | | | | | |

*For Subsidiary paper of Economics or History refer to respective Semester and subject syllabus of B. A. Pass course.

***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.

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

## Semester-III

| 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 | | |
| GEO4.5AECT31 | Compulsory Non – CGPA Paper | AEC | 2 | 0 | 0 | 2 | - | 50 | 50 | 36 Non-CGPA S / NS | |
| GEO5DCCT32 | Human Geography | DCCT | 3 | 1 | 0 | 4 | 20 | 80 | 100 | 36 | 4 |
| GEO5DCCT33 | Settlement Geography | DCCT | 3 | 1 | 0 | 4 | 20 | 80 | 100 | 36 | 4 |
| GEO5DCCP34 | Practical ( Combined for both papers) | DCCP | 0 | 0 | 4 | 4 | 20 | 80 | 100 | 36 | 8 |
| GEO5DCCP35A | Subsidiary Economics * | DCCS | 5 | 1 | 0 | 6 | 30 | 120 | 150 | 36 | |
| | Or | | | | | | | | | | |
| GEO5DCCP35B | Subsidiary History* | DCCS | 5 | 1 | 0 | 6 | 30 | 120 | 150 | 36 | |
| **Total Credits** | | | | | | **20** | | | | | |
| **Total Marks** | | | | | | | | | | | |

*For Subsidiary paper of Economics or History refer to respective Semester and subject syllabus of B. A. Pass course.

## Semester-IV

| 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 | | |
| GEO4.5AECT41 | Compulsory Non – CGPA Paper | AEC | 2 | 0 | 0 | 2 | - | 50 | 50 | 36 Non-CGPA S / NS | |
| GEO5DCCT42 | Hydrology | DCC | 3 | 1 | 0 | 4 | 20 | 80 | 100 | 36 | 4 |
| GEO5DCCT43 | Environmental Geography | DCC | 3 | 1 | 0 | 4 | 20 | 80 | 100 | 36 | 4 |
| GEO5DCCP44 | Practical ( Combined for both papers) | DCC | 0 | 0 | 4 | 4 | 20 | 80 | 100 | 36 | 8 |
| GEO5DCCP45A | Subsidiary Economics* | DCC | 5 | 1 | 0 | 6 | 30 | 120 | 150 | 36 | |
| | Or | | | | | | | | | | |
| GEO5DCCP45B | Subsidiary History* | DCC | 5 | 1 | 0 | 6 | 30 | 120 | 150 | 36 | |
| **Total Credits** | | | | | | **20** | | | | | |
| **Total Marks** | | | | | | | | | | | |

*For Subsidiary paper of Economics or History refer to respective Semester and subject syllabus of B. A. Pass course.

**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.

## Semester-V

| 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 | | |
| GEO4.5AECT51 | Compulsory Non – CGPA Paper | AEC | 2 | 0 | 0 | 2 | - | 50 | 50 | 36 Non-CGPA S / NS | |
| GEO5DCCT52 | Economic Geography | DCCT | 3 | 1 | 0 | 4 | 20 | 80 | 100 | 36 | 4 |
| GEO5DCCT53 | Geography of India | DCCT | 3 | 1 | 0 | 4 | 20 | 80 | 100 | 36 | 4 |
| GEO5DCCP54 | Practical ( Combined for both papers) | DCCP | 0 | 0 | 4 | 4 | 20 | 80 | 100 | 36 | 8 |
| GEO5DCCP55A | Subsidiary Economics * | DCCS | 5 | 1 | 0 | 6 | 30 | 120 | 150 | 36 | |
| | Or | | | | | | | | | | |
| GEO5DCCP55B | Subsidiary History* | DCCS | 5 | 1 | 0 | 6 | 30 | 120 | 150 | 36 | |
| **Total Credits** | | | | | | **20** | | | | | |
| **Total Marks** | | | | | | | | | | | |

*For Subsidiary paper of Economics or History refer to respective Semester and subject syllabus of B. A. Pass course.

## Semester-VI

| 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 | | |
| GEO4.5AECT61 | Compulsory Non – CGPA Paper | AEC | 2 | 0 | 0 | 2 | - | 50 | 50 | 36 Non-CGPA S / NS | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GEO5DCCT62 | Regional Planning & Developme nt | DCC | 3 | 1 | 0 | 4 | 20 | 80 | 100 | 36 | 4 |
| GEO5DCCT63 | Geography of Rajasthan | | 3 | 1 | 0 | 4 | 20 | 80 | 100 | 36 | 4 |
| GEO5DCCP64 | Practical ( Combined for both papers) | DCC | 0 | 0 | 4 | 4 | 20 | 80 | 100 | 36 | 8 |
| GEO5DCCP65 A | Subsidiary Economics* | DCC | 5 | 1 | 0 | 6 | 30 | 120 | 150 | 36 | |
| | Or | | | | | | | | | | |
| GEO5DCCP65 B | Subsidiary History* | DCC | 5 | 1 | 0 | 6 | 30 | 120 | 150 | 36 | |
| **Total Credits** | | | | | | **20** | | | | | |
| **Total Marks** | | | | | | | | | | | |

*For Subsidiary paper of Economics or History refer to respective Semester and subject syllabus of B. A. Pass course.

**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.

## Scheme of End Semester DCCT (Theory) Paper Examination

1. English/Hindi shall be the medium of instructions and examination.
2. There will be semester end examination.
3. The evaluation scheme shall comprise external evaluation and internal evaluation. Each theory paper's internal evaluation will carry 20 marks. Each theory paper's external evaluation will carry 80 marks.

The evaluation scheme shall comprise external evaluation and internal evaluation. The internal evaluation will carry 30 (20T+10P) marks. Each theory paper will carry 80 marks. Practical paper will carry 40 marks.

4. The duration of the written examination for the theory papershall be three hours.
5. A course will contain 5 units.
6. The question papershall contain three sections.

**Maximum Marks : 80** **Duration:3 Hrs.**

**Section A**

**(**10 x 1 = 10 marks)

Section A (10 marks) shall contain 10 questions, two from each Unit. Each question shall be of 1 mark. All the questions are compulsory. Section A will be prepared such that questions (i) through (v) are multiple-choice questions, while questions (vi) through (x) will be fill-in-the-blank questions.

**Section B**

**(**5 x 5 = 25 marks)

Section B (25 marks) shall contain 5 questions (two from each unit with internal choice). Each questionshall be of 5 marks. The candidate is required to answer all 5 questions. The answers should not exceed 150 words.

**Section C**

**(**3 x 15 = 45 marks)

Section C (45 marks) shall contain 5 questions, one from each Unit. Each questionshall be of 15 marks. The candidate is required to answer any three questions by selecting these three questions from different units. The answers should not exceed 400 words.

## Scheme of End Semester DCCP (Practical) Paper Examination

1. Practical paper will carry 100 (80 + 20) marks.

2. The duration of the practical examinationshall be six hours.

3. **Distribution of marks:** **Marks**

| | | |
|---|---|---|
| 1. | Lab work/ Written work: 2 hrs duration | 30 |
| 2. | Record work & viva- voce: 2 hr duration | 20+10=30 |
| 3. | Field survey & viva-voce: 2 hr duration | 14+6=20 |
| | Total | 80 |

**Note:** The candidate is required to answer/attend any three exercises (10 marks each) out of five exercises during Lab Work/ Written work and 40 candidates shall be examined in one batch.

# Syllabus (Semester - I)

# BA Geography (Honors): Semester-I

## PAPER 1. GEOMORPHOLOGY

### Unit - I

Earth: Interior Structure; Isostasy; Earth Movements: Plate Tectonics, Earthquakes and Volcanoes; Folds and Faults.

### Unit - II

Rocks: Characteristics and Classification; Geomorphic Processes: Weathering, Mass Wasting, Cycle of Erosion (by Davis and Penck).

### Unit - III

Evolution of Landforms (Erosional and Depositional): Fluvial, Karst, Aeolian, Glacial, and Coastal.

### Unit - IV

Drainage Basin Morphometry: Drainage Types and Patterns, Stream Orders, Bifurcation Ratio, Stream Frequency, Relief Ratio, Drainage Texture and Density.

### Unit - V

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. 3Chorley 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 Punlications, 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

## Unit - I

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.

## Unit - II

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

## Unit - III

Spatial data import; Geo-referencing of analogue maps; applying reference spheroids, datums and projections; Coordinate System; Digitizing; Linking spatial and attribute data; Spatial Queries

## Unit - IV

Mapping - qualitative data; quantitative data; elevation data; time-series data; Element of map design; Color Symbology

**Unit - V**

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 (Combined for paper 1 and 2)

1. Scale- Plain, Comparative and Diagonal
2. Enlargement, Reduction and Combination of Maps
3. Mean, Median, Mode and Standard Deviation
4. Chain-Tape Survey

**Suggested Readings:**

• Monkhouse, F.J. & Wilkinson, H.R.: Maps and Diagrams, Methuen, London, 1994.

• Singh, R.L. and Singh, Rana P.B.: Elements of Practical Geography (Hindi and English), Kalyani Publishers, Ludhiana.

• Sharma, J.P.: Prayogatmak Bhoogol ki Rooprekha (Hindi), Rastogi Publications, Meerut.

• Mamoria C.B. & Jain S.M. : Prayogatmak Bhoogol, Sahitya Bhawan, Agra.

• Singh, L.R.: Fundamentals of Practical Geography (Hindi and English), Sharda Pustak Bhawan, Allahabad.

• Mishra, R.N. and Sharma, P.K.: Practical Geography (Hindi and English), Pareek Publications, Jaipur.

• Khullar, D.R.: Essentials of Practical Geography (Hindi & English).

• Singh, Gopal: Map Work and Practical Geography, Vikas Publishing House, Noida.

• Tiwari, R.C. and Tripathi, Sudhakar: Abhinav Prayogatmak Bhoogol, Pravalika Publication, Prayagraj.

Raisz, Erwin: General Cartography, McGraw-Hill, Inc., New York

# BA Geography (Honors): Semester-II

## PAPER 4: CLIMATOLOGY

### Unit - I

Atmospheric Composition and Structure – Variation with Altitude, Latitude and Season; Insolation and Temperature – Factors and Distribution, Heat Budget, Temperature Inversion.

### Unit - II

Atmospheric Pressure and Winds – Planetary Forces affecting Winds, General Circulation, Jet Streams; seasonal winds; local winds; Monsoon - Origin and Mechanism

### Unit - III

Atmospheric Moisture – Evaporation, Humidity, Condensation, Fog and Clouds, Precipitation Types, Stability and Instability; Tropical Cyclones, Extra Tropical Cyclones,

### Unit - IV

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

### Unit - V

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

### Unit - I

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,

### Unit - II

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.

### Unit - III

Image Processing and Interpretation (Digital and Manual): Pre-processing (Radiometric and Geometric Correction); Enhancement (Filtering); Image Fusion Indices- vegetation, tasseled cap,

### Unit - IV

Image Interpretation: Visual Interpretation, Digital Image Classification (Supervised and Un- supervised); Vegetation Indices; Tasseled-cap Indices, Principal Component Analysis

### Unit - V

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 SamvedanaAvam 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 paper 4 and 5)

1. Methods of representation of relief- Hachures, Hill shading, Layer tint, Contours etc

2. Relief features- Types of Slopes, Valleys, Waterfall, Gorge, Meanders, Plateaus, Conical Hill, Ridge, Saddle, Cliff, Spur, Col, Pass- to be drawn with the help of contours shown in topographical sheets of different physiographic regions.
3. Kinds of Profiles, Profile drawing.
4. Study of topographical sheets, scheme of Indian topographical sheets
5. **Geographical Field Excursion:** Study of a village, based on socio- economic field survey. Each student will have to submit a separate report

### Suggested Readings:


- Monkhouse, F.J. & Wilkinson, H.R.: Maps and Diagrams, Methuen, London, 1994.
- Singh, R.L. and Singh, Rana P.B.: Elements of Practical Geography (Hindi and English), Kalyani Publishers, Ludhiana.
- Sharma, J.P.: Prayogatmak Bhoogol ki Rooprekha (Hindi), Rastogi Publications, Meerut.
- Mamoria C.B. & Jain S.M. : Prayogatmak Bhoogol, Sahitya Bhawan, Agra.
- Singh, L.R.: Fundamentals of Practical Geography (Hindi and English), Sharda Pustak Bhawan, Allahabad.
- Mishra, R.N. and Sharma, P.K.: Practical Geography (Hindi and English), Pareek Publications, Jaipur.
- Khullar, D.R.: Essentials of Practical Geography (Hindi & English).
- Singh, Gopal: Map Work and Practical Geography, Vikas Publishing House, Noida.
- Tiwari, R.C. and Tripathi, Sudhakar: Abhinav Prayogatmak Bhoogol, Pravalika Publication, Prayagraj.
- Raisz, Erwin: General Cartography, McGraw-Hill, Inc., New York.


# BA/BSc Geography (Honors): Semester-III

## PAPER 7. HUMAN GEOGRAPHY

### Unit - I

Nature & Scope; Traditional and Contemporary Approaches; Fundamental Principles; Man- environment relationship: Determinism, Possibilism, Probabilism; Dichotomy in Physical & Human Geography.

### Unit - II

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.

### Unit - III

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.

**Unit - IV**

Classification and distribution of Religions; Major Linguistic families; Cultural Regions; Geographic elements of the State; Unitary & Federal States; Frontiers & Boundaries.

**Unit - V**

Malthusian and Boserupian models on relationship between: Population Explosion, Resources & Technology; 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 Developmentioned. National Book Trust 2015.*


## PAPER 8: SETTLEMENT GEOGRAPHY

### Unit - I

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.

### Unit - II

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.

### Unit - III

Urban Settlements- Census definition & categories in India; Urban Morphology- Models of Burgess, Homer Hoyt, Harris & Ullman; City Region and Conurbation; Metropolitan concept.

### Unit - IV

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.

### Unit - V

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 GSassen S., 2001: The Global City: New York, London and Tokyo, Princeton University Press.*

*8. Ramachandran R (1989): Urbanisation and Urban Systems of India, Oxford University Press, New Delhi*

*9. Ramachandran, R., 1992: The Study of Urbanisation, Oxford University Press, Delhi*

*10. 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.*

*11. Singh, R.B. (Ed.) (2015) Urban development, challenges, risks and resilience in Asian megacities.*


## PRACTICAL(Combined for paper 7 and 8)

1. Distribution Maps: Methods of Drawing Distribution maps, Qualitative Methods- Choro-chromatic, Simple Shade method, Pictorial Method, Choro-schematic method.Choropleth Method, Isopleth Method, Dot Method, Diagrammatic Method, Cartogram
2. Plane Table Survey- radiation, intersection, resection: two- & three-point problems- Llano's method, Bassel's method, Trial & error method, Mechanical method
3. Spearman's rank correlation and regression.

**Suggested Readings:**


- Monkhouse, F.J. & Wilkinson, H.R.: Maps and Diagrams, Methuen, London, 1994.
- Singh, R.L. and Singh, Rana P.B.: Elements of Practical Geography (Hindi and English), Kalyani Publishers, Ludhiana.
- Sharma, J.P.: Prayogatmak Bhoogol ki Rooprekha (Hindi), Rastogi Publications, Meerut.
- Mamoria C.B. & Jain S.M.: Prayogatmak Bhoogol, Sahitya Bhawan, Agra.
- Singh, L.R.: Fundamentals of Practical Geography (Hindi and English), Sharda Pustak Bhawan, Allahabad.
- Mishra, R.N. and Sharma, P.K.: Practical Geography (Hindi and English), Pareek Publications, Jaipur.
- Khullar, D.R.: Essentials of Practical Geography (Hindi & English).
- Singh, Gopal: Map Work and Practical Geography, Vikas Publishing House, Noida.

Tiwari, R.C. and Tripathi, Sudhakar: Abhinav Prayogatmak Bhoogol, Pravalika Publication, Prayagraj


Semester 3: Subsidiary Paper: (For the students enrolled in the BA/BSc Geography Honors 2023-24 Batch)

# BA Geography (Honors): Semester-IV

## PAPER 10: HYDROLOGY

### Unit - I

Definition and scope of Hydrology; Distribution of world's water resources; Global Hydrological Cycle; Man's interference in hydrological cycle.

### Unit - II

Elements of hydrological cycle: Precipitation- types, characteristics, variations; Interception; Evaporation- from water surfaces & soil; Evapotranspiration.

### Unit - III

Elements of hydrological cycle: Factors affecting Infiltration; Soil Moisture Storage; Runoff- sources, components, controlling factors.

### Unit - IV

Groundwater: Occurrence, Factors affecting Storage, Movement; Physical & chemical properties of groundwater; Groundwater resources in India- occurrence, exploitation.

### Unit - V

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 11: ENVIRONMENTAL GEOGRAPHY

### Unit - I

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).

### Unit - II

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.

### Unit - III

Environmental Problems in Tropical, Temperate and Polar Ecosystems; Emerging Environmental Issues- Food Security, Deforestation, Global Warming, Ozone Layer Depletion, Biodiversity Conservation.

1. **Unit - IV**

Concept of Environmental Management- Soil, Forest, Water & Energy Resource management; Concept of Sustainable Development- evolution, need &

characteristics.

## Unit - V

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. Cunninghum W. P. and Cunninghum M. A., 2004: Principals of EnvironmentalScience: 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)*


### PRACTICAL (Combined for papers 10 and 11)

1. Representation of Statistical Data: Diagrams and Graphs; Diagrams -One Dimensional Diagrams: Line, Bar- Simple, Multiple, Compound, Pyramid, Wind Rose Diagram; Two Dimensional Diagrams: Unit Square, Square Block, Rectangular, Wheel, Ring; Three Dimensional Diagrams- Spherical, Cube, Block Pile
2. Graphs: Simple Linear Graph, Polyline Graph, Climograph, Hythergraph
3. **Geographical Field Excursion:** Agricultural survey of a village. Each student will have to submit a separate report.

**Suggested Readings:**


- Lawrence, G R P: Cartographic Methods, Methuen, London.

- Mishra R P: Fundamentals of Cartography, McMilan, New Delhi.
- Monkhouse, F J & Wilkinson, H R: Maps and Diagrams, Methuen, London, 1994.
- Singh, R L: Elements of Practical Geography, Kalyani Publishers, New Delhi.
- J.P. Sharma: Prayogatmak Bhoogol ki Rooprekha, Rastogi, Meerut.
- Mamoria C B & Jain S M: Prayogatmak Bhoogol, Sahitya Bhavan Agra.
- S.M. Jain: Prayogatmak Bhoogol, Sahitya Bhavan, Agra


# BA Geography (Honors): Semester-V

## PAPER XIII: ECONOMIC GEOGRAPHY

### Unit - I

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.

### Unit - II

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).

### Unit - III

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, Kwanto Plain, Damodar Valley Industrial Regions.

### Unit - IV

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;

## Unit - V

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; Taafe'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: GEOGRAPHY OF INDIA

### Unit - I

Physical: Physiographic Divisions, soil and vegetation, climate (characteristics and classification)

### Unit - II

Population: Distribution and growth, Structure

### Unit - III

Economic: Mineral and power resources distribution and utilisation of iron ore, coal, petroleum, gas; agricultural production and distribution of rice and wheat, industrial development : automobile and Information technology

### Unit - IV

Social: Distribution of population by race, caste, religion, language, tribes and their correlates

### Unit - V

Regionalisation 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 Intenational 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 Publs., 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*

## PRACTICAL (Combined for paper 13 and 14)

1. Map Projection: Definition, Necessity, Classification, and Choice of Projections.
2. Construction, Properties, Limitations and Use of The Following Projections: 1. Cylindrical- Simple and Equal Area. 2. Conical- One Standard Parallel, Two Standard Parallel, Bone's and Polyconic. 3. Zenithal- Orthographic, Stereographic, Gnomonic and Equidistant (Polar Cases). 4. Conventional- Mollweide's Projection.
3. Prismatic Compass Survey- Required Instruments, Magnetic Bearing, Survey Methodology: Closed and Open Traverse, Corrections of Bearings and Removal of Closing Error.

**Suggested Readings:**


- Monkhouse, FG & Wilkinson, HR: Maps and Diagrams, Metheun, London,1994.
- Steers JA: Map Projections, University of London Press,London.
- Singh, RL: Elements of Practical Geography, Kalyani Publishers, New Delhi.
- Sharma JP: Prayogik Bhoogol, Rastogi, Meerut.
- S.M. Jain: Prayogatmak Bhoogol, Sahitya Bhavan, Agra. Lawrence, G R P: Cartographic Methods, Methuen, London.


# BA Geography (Honors): Semester-VI

### PAPER XVI: REGIONAL PLANNING AND DEVELOPMENT

#### Unit - I

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.

#### Unit - II

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.

#### Unit - III

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 Trickling Down & Polarisation Effect; Dispersal-based development models.

**Unit - IV**

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

**Unit - V**

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.*

## PAPER XVII: GEOGRAPHY OF RAJSTHAN

### Unit - I

Introduction: Formation and administrative setting of the state, Geological structure, Relief, Physiographic regions, Drainage, Climate, Soils, Natural vegetation.

### Unit - II

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.

### Unit - III

Power and energy resources: Hydro based, Thermal, Atomic, Solar, Biogas; Mineral resources and industries.

### Unit - IV

Demographic structure: growth, distribution, density, urban- rural, occupational structure, literacy and cultural heritage; Tribes of Rajasthn: Bhil and Grasia; Factors affecting the development of transportation and trade in the state.

### Unit - V

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 (Combined for paper 16 and 17)

1. Weather Maps, Recording of Weather Elements, Representation of Weather Elements on the Map, Interpretation of Indian Daily Weather Maps (January and July months).
2. Climatic Graphs: Climetograph, Ergograph
3. Elementary Remote Sensing and G.I.S., Global Positioning System
4. **Geographical Field Excursion:** One week's geographical survey outside the headquarters, based on the environmental problem of a particular area (Based on the survey, each student will have to submit a detailed report of 10-15 pages including Photographs and diagrams separately.)

### Suggested Readings:

- Singh, RL: Elements of Practical Geography, Kalyani Publishers, New Delhi.
- Sharma JP: Prayogik Bhoogol, Rastogi, Meerut.
- S.M. Jain: Prayogatmak Bhoogol, Sahitya Bhavan, Agra. Lawrence, G R P: Cartographic Methods, Methuen, London.
- Pradeep Kumar Guha: Remote Sensing for the Beginner, East-West Press
- Prithvish Nag: Thematic Cartography and Remote Sensing, Concept Publishing Company.