



**MAHARAJA SURAJMAL BRIJ UNIVERSITY**  
**BHARATPUR (RAJASTHAN)**

**Three/Four Year Bachelor of Social Science/  
Science in Geography  
III & IV SEMESTER  
EXAMINATION-2024-25**

**डॉ फरबट सिंह**  
सहायक कुलसचिव

## SEMESTER WISE PAPER TITLES WITH DETAILS

Three / Four Year U.G. Programme in Social Science/ Science Subject: Geography									
S. No.	Level	Semester	Type	Title	Credi ts				Contact Hours
					L	T	P	Total	
1.	6	III	MJR	GEO- 10T- 301 Climatology ans Oceanography	4	0	0	4	4
2.	6	III	MJR	GEO-10P- 302 Practical-III	0	0	2	2	4
3.	6	IV	MJR	GEO-10T-401 Geography of India	4	0	0	4	4
4.	6	IV	MJR	GEO-10P-402 Practical-IV	0	0	2	2	4



  
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**Syllabus**  
**Semester III (2024-25)**  
**GEO- 10T- 301- Climatology & Oceanography**

Code of Course	Title of the Course	Level of the Course	Credits of the Course
GEO- 10T- 301	Climatology & Oceanography	6	4
Types of the Course	Delivery type of the Course		
Major	Lecture, 60 Lectures including diagnostic and formative assessments during lecture hours		
Prerequisites	Central Board of Secondary Education or Equivalent		
Objectives of the Course	To attain knowledge in detail about physical geography and associated branches.		

*\*Note:- There will be no internal Assessment and mid-term exam for Non-collegiate (NC) students. The main theory exam for NC Students will be out of 100 maximum marks.*

**Duration- 3 Hours**

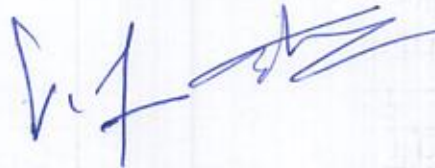
**Max. Marks- 20+80 (100)**

**Min. Marks- 8+32 (40)**

Pattern of Examination	Bifurcation of Marks	
	Regular Students	NC Students
Part A	10 × 2= 20	10 × 2= 20
Part B	15 × 4=60	20 × 4= 80
<b>Total</b>	<b>80</b>	<b>100</b>

*\*Note:*

- 1. Internal assessment will be as per University Norms.*
- 2. End Semester Examination question paper will comprise of two parts: Part A and Part B.*
- 3. Part A will comprise of TWO questions consisting Map Work and Multiple-Choice Questions (MCQs)/ Short Answer type questions.*



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4. Part B will comprise of FOUR descriptive questions with Internal choice from each unit.
5. In all student will have to attempt total 6 questions, 2 questions from Part A and 4 questions from Part B.

**Syllabus**  
**Climatology and Oceanography**  
**Unit – I**

Composition & Structure of the Atmosphere; Insolation & Heat budget of the Earth; Atmospheric Temperature: Horizontal and Vertical distribution; Inversion of Temperature; Atmosphere Pressure, Pressure belts & Planetary winds.

वायुमण्डल का संगठन एवं संरचना, सूर्यातप एवं पृथ्वी का ऊष्मा बजट, वायुमंडलीय तापमान का क्षैतिज और ऊर्ध्वाधर वितरण, तापमान की विलोमता, वायुदाब, वायुदाब पेटियाँ और ग्रहीय पवनें।

**Unit – II**

Mechanism of Indian monsoon and jet streams; Classification of Clouds and Precipitation; Types of Air Masses, Fronts & Cyclones; Classification of World Climate- Koppen's Thornthwaite's & General climatic classification.

भारतीय मानसून प्रणाली एवं जेट स्ट्रीम, बादलों और वर्षा का वर्गीकरण, वायुराशियाँ, वाताग्र एवं चक्रवातों के प्रकार, विष्व जलवायु का वर्गीकरण – कोपेन, थोर्नथ्वेट एवं सामान्य जलवायु वर्गीकरण।

**Unit – III**

Oceanography: Definition, nature and Scope; Hydrological Cycle; Surface Configuration of Pacific, Atlantic and Indian Ocean's bottom; Horizontal and Vertical distribution of Oceanic Temperature and Salinity.

महासागरीय विज्ञान: परिभाषा, प्रकृति और विषय क्षेत्र, जल चक्र, प्रशांत, अटलांटिक और हिंद महासागर के तलीय उच्चावच, महासागरीय तापमान एवं लवणता का क्षैतिज और ऊर्ध्वाधर वितरण।

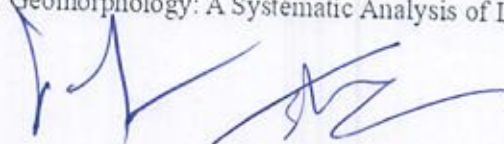
**Unit – IV**

Oceanic Movements- Tides, Waves and Oceanic Currents; Coral Reefs; Oceanic Deposits.

महासागरीय संचलन— ज्वारभाटा, लहरें एवं महासागरीय धाराएँ, प्रवाल भित्ति, महासागरीय निक्षेप।

**Recommended Readings:**

- Bloom, A. L. (2003). Geomorphology: A Systematic Analysis of Late Cenozoic Landforms.



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New Delhi: Prentice-Hall of India.

- Christopherson, Robert W. (2011). Geosystems: An Introduction to Physical Geography 8 Ed. England: Macmillan Publishing Company.
- Ernst, W.G. (2000). Earth systems: Process and Issues. Cambridge: Cambridge University Press. Gautam, A. (2010). Bhautik Bhugol. Meerut: Rastogi Publications.
- Kale, V and Gupta, A. (2001). Elements of Geomorphology. Calcutta: Oxford University Press.
- Kale, V. S. and Gupta, A. (2001). Introduction to Geomorphology. Hyderabad: Orient Longman.
- Selby, M.J. (2005). Earth's Changing Surface. United Kingdom: OUP.
- Singh, S. (2009). Bhautic Bhugol ka Swaroop. Allahabnad: Prayag Pustak.
- Skinner, Brian J. and Stephen, C. (2000). The Dynamic Earth: An Introduction to physical Geology, John Wiley and Sons.
- Strahler, A.N. and Strahler, A.H. (2005). Modern Physical Geography. John Wiley & Sons. Revised edition.
- Thornbury, W. D. (1968). Principles of Geomorphology. Wiley.

#### Course Learning Outcomes:

By the end of the course, students should be able to:

1. Identify the concepts of Origin of Earth and landforms
2. Illustrate the different forces acting over the Earth.
3. Compare and analyze the different cycles of landform erosion and their processes
4. Build competency and academic excellence for competitive exams

#### GEO-10P- 302- Practical-III

Code of Course	Title of the Course	Level of the Course	Credits of the Course
GEO-10P- 302	Practical-III	6	2
Types of the Course	Delivery type of the Course		
Major	60 contact hrs- Laboratory lectures and field study including diagnostic and formative assessments during lecture hours		
Prerequisites	Central Borad of Secondary Education or Equivalent		
Objectives of the Course	To make the students understand about the relief features through scale and relief representation techniques.		

\* Note: - 1. It is compulsory for the Non-collegiate students to attend 48 hours practical training camp. One batch of practical training camp will comprise of maximum 30 students per batch.

2. There will be no internal Assessment and mid-term exam for Non-collegiate (NC) students. The main practical exam for NC Students will be out of respectively 50 maximum marks and written test will be of 30 marks.

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Duration- 4 Hours

Max. Marks- 10+40 (50)

Min. Marks- 4+16 (20)

Pattern of Examination	Bifurcation of Marks		Time
	Regular Students	NC Students	
Written Test	4 × 5 = 20	4 × 7.5 = 30	2 Hours
Field Survey and Viva-Voce	7+3	7+3	2 Hours
Record Work and Viva-Voce	7+3	7+3	
<b>Total</b>	<b>40</b>	<b>50</b>	<b>4 Hours</b>

\*Note-

1. The students will have to prepare A3 Size Record Book which will be simultaneously checked by the Teacher in the class after teaching and evaluated during the examinations.
2. There will be 6 questions (3 questions from each unit) in written paper. The students have to attempt 4 questions in total (2 questions from each unit).
3. The student will have to prepare Survey Sheet **INDIVIDUALLY** during the examination.
4. Simple Calculator is permitted in practical examination.

#### Unit-I

One Dimension Diagram- Line Graph (Simple, Polyline); Bar Graph- (Simple, Compound, Superimposed, Multiple); Line and Bar Graph; Pyramid diagram- (Simple, Superimposed, Compound), Wheel / Pie Diagram; Two Dimension Diagrams- Square, Rectangle- (Simple, Compound), Circle, Ring.

एकविम आरेख-रेखीय आरेख (सरल, बहुरेखिक), दण्ड आरेख- (सरल,संयुक्त,अध्यारोपित,मिश्रित), रेखीय-दण्ड आरेख, पिरामिड, आरेख- (सरल, अध्यारोपित, मिश्रित), बकारेख/पाई आरेख, द्विविम आरेख- वगरेख, आयातारेख-(सरल, मिश्रित), वृत्तारेख, वलय आरेख।

#### Unit-II

Prismatic and Compass Survey- Introduction and Instruments, Magnetic Bearing, Method of Surveying (Radiation and Intersection), Traversing (Open and Close), Measure of Central Tendencies -Mean, Median, and Mode, Standard deviation.

प्रिज्मीय कम्पास सर्वेक्षण- परिचय और उपकरण, चुंबकीय दिक्मान, सर्वेक्षण की विध (विकिरण और प्रतिच्छेदन) मालाकार विधि, खुली और बन्द), केन्द्रीय प्रवृत्तियों के माप- माध्य, माध्यमिका एवं बहुलक, प्रमापविचलन।

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### Recommended Readings:

- Monkhouse, F. J. and Wilkinson, H. R. (1973). Maps and Diagrams. London: Methuen.
- Rhind, D. W. and Taylor, D. R. F. (2000). Cartography: Past, Present and Future. International Cartographic Association.
- Robinson, A. H., (2009). Elements of Cartography. New York: John Wiley and Sons.
- Robinson, A.H. (2000). Elements of Cartography. U.S.A.: John Wiley & Sons.
- Sarkar, A. K. (2005). Practical Geography: A Systematic Approach. Calcutta: Oriental Longman.
- Sharma, J. P. (2010). Prayogik Bhugol. Meerut: Rastogi Publishers.
- Singh, R.L. and Dutt, P.K. (2010). Elements of Practical Geography. New Delhi: Kalyani Publishers.

### Course Learning Outcomes:

By the end of the course, students should be able to:

1. To make students aware about various types of one and two dimensional diagrams.
2. To make students aware about the various surveying methods for area calculation.



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**Syllabus**  
**Semester IV (2024-25)**

**GEO-10T-401- Geography of India**

Code of Course	Title of the Course	Level of the Course	Credits of the Course
GEO-10T-401	Geography of India	6	4
<b>Types of the Course</b>	<b>Delivery type of the Course</b>		
<b>Major</b>	Lecture, 60 Lectures including diagnostic and formative assessments during lecture hours		
<b>Prerequisites</b>	Central Borad of Secondary Education or Equivalent		
<b>Objectives of the Course</b>	To describe various geographical aspects of land, people and economy of Indian sub-continent.		

*\*Note:- There will be no internal Assessment and mid-term exam for Non-collegiate (NC) students. The main theory exam for NC Students will be out of respectively 100 maximum marks.*

**Duration- 3 Hours**

**Max. Marks- 20+80 (100)**

**Min. Marks- 8+32 (40)**

Pattern of Examination	Bifurcation of Marks	
	Regular Students	NC Students
Part A	10 × 2= 20	10 × 2= 20
Part B	15 × 4=60	20 × 4= 80
<b>Total</b>	<b>80</b>	<b>100</b>

*\*Note:*

- 1. Internal assessment will be as per University Norms.*
- 2. End Semester Examination question paper will comprise of two parts: Part A and Part B.*
- 3. Part A will comprise of TWO questions consisting Map Work and Multiple-Choice Questions (MCQs)/ Short Answer type questions.*
- 4. Part B will comprise of FOUR descriptive questions with Internal choice from each unit.*
- 5. In all student will have to attempt total 6 questions, 2 questions from Part A and 4 questions from Part B.*



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## Syllabus

### **Unit-I**

India- Location & Extent; Physiographic division Climate: Factors Affecting Climate, Seasons, Mechanism of Indian Monsoon (Classical Theory, Air Mass Theory, EL-Nino, Southern Oscillation & Jet Stream).

भारत-स्थिति एवं विस्तार भूआकृतिक विभाग जलवायु: जलवायु को प्रभावित करने वाले कारक, ऋतुएँ, भारतीय मानसून प्रणाली (शास्त्रीय सिद्धान्त, वायुराशि सिद्धान्त, एल-नीनो, दक्षिणी दोलन व जेट स्ट्रीम)

### **Unit-II**

Drainage System; Types & Conservation of Soils; Natural Vegetation (Forests, Shrubs & Grasslands); Wildlife Sanctuaries (Jim Corbett, Periyar, Sunderban, Kaziranga & Ranthombore).

अपवाह तंत्र, मृदा के प्रकार और संरक्षण, प्राकृतिक वनस्पति (वन, झाड़ियाँ और घास के मैदान), वन्यजीव अभयारण्य (जिम कॉर्बेट पेरियार, सुंदरबन, काजीरंगा व रणथंभौर)

### **Unit-III**

Mineral Resources -Iron ore, Manganese, Copper, Tungsten, Bauxite, Gold, Silver, Zinc, lead; Non-metallic- Mica, Limestone, Dolomite, Asbestos, Gypsum.

Energy Resources- Coal, Petroleum, Natural Gas, Solar Energy, Wind Energy, Biomass Energy; Industries- Iron & Steel, Textile, (Cotton & Jute), Cement, Sugar, Resource regions.

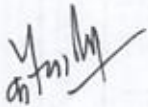
खनिज संसाधन – लौह अयस्क, मैंगनीज तांबा, टंगस्टन, बॉक्साइट, सोना, चांदी, जस्ता, सीसा, अघात्विक- अभ्रक, चूना पत्थर, डोलोमाइट, एस्बेस्टस, जिप्सम।

ऊर्जा संसाधन – कोयला, पेट्रोलियम, प्राकृतिक गैस, सौर ऊर्जा, पवन ऊर्जा, बायोमास ऊर्जा, उद्योग-लोहा और इस्पात, वस्त्र, (कपास और जूट) सीमेंट, चीनी, संसाधन प्रदेश।

### **Unit-IV**

Population- Growth, Distribution, Density, Literacy, Sex-ratio; Urbanization: Trends, Patterns, Problems & Solutions; Migration: Causes & Consequences; Agriculture: Green Revolution, Agricultural Regions, Problems & Solution.

जनसंख्या : वृद्धि, वितरण, घनत्व, साक्षरता, लिंगानुपात  
नगरीकरण की प्रवृत्तियाँ एवं प्रारूप, समस्याएँ और समाधान, प्रवासन के कारण और परिणाम।  
कृषि: हरितक्रांति, कृषि प्रदेश, समस्याएँ और समाधान।



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**Recommended Readings:**

- Spare, O.H.K. and A.T.A. Learmonth: Geography of India and Pakistan, Methuen London (first Indian Edition, 1984, Munshiram Manoharlal, New Delhi) 1967.
- Gautam A: Advanced Geography of India, Sharda Pustak bhawan, Allahabad, 2009.
- Sharma, T.C. and Coutinho, O: Economical and commercial Geography of India, Vikas publishing house Pvt. Ltd. New Delhi, 1988.
- Chandna, R.C.: Geography of Population, Kalyani Publishers, 1998.
- Tirtha, Ranji : Emerging India, Conpub. Ann Arbor, U.S.A. Michigan, 2006.

**Course Learning Outcomes:**

By the end of the course, students will be able to understand the relevance of geographical knowledge of India to understand the contemporary issues.

**GEO-10P-402 - Practical-IV**

Code of Course	Title of the Course	Level of the Course	Credits of the Course
GEO-10P-402	Practical-IV	6	2
Types of the Course	Delivery type of the Course		
Major	60 contact hrs- Laboratory lectures and field study including diagnostic and formative assessments during lecture hours		
Prerequisites	Central Board of Secondary Education or Equivalent		
Objectives of the Course	To make the students understand about the qualitative and quantitative maps and to read topographical sheets.		

- \* Note: - 1. It is compulsory for the Non-collegiate students to attend 48 hours practical training camp. One batch of practical training camp will comprise of maximum 30 students per batch.
2. There will be no internal Assessment and mid-term exam for Non-collegiate (NC) students. The main practical exam for NC Students will be out of 50 maximum marks.

Duration- 4 Hours

Max. Marks- 10+40 (50)

Min. Marks- 4+16 (20)

Pattern of Examination	Bifurcation of Marks		Time
	Regular Students	NC Students	
Written Test	4 × 5 = 20	4 × 7.5 = 30	2 Hours
Model/chart and Viva-Voce	7+3	7+3	2 Hours
Record Work and Viva-Voce	7+3	7+3	
<b>Total</b>	<b>40</b>	<b>50</b>	<b>4 Hours</b>

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**\*Note-**

1. The students will have to prepare A3 Size Record Book which will be simultaneously checked by the Teacher in the class after teaching and evaluated during the examinations.
2. There will be 6 questions (3 questions from each unit) in written paper. The students have to attempt 4 questions in total (2 questions from each unit).
3. The student will have to prepare Model/Chart **INDIVIDUALLY** form the practical syllabus of Geography and have to submit during the examination.
4. Simple Calculator is permitted in practical examination.

**Unit-I**

Map: Definition and Classification; Qualitative Maps- Chorochromatic / Colour- patch- (Simple, International, Layer Tint), Choro- Schematic (Symbol Method, Pictorial Method, Geometrical Method & Naming Method); Quantitative Maps: Isopleth (Isotherms & Isobars), Choropleth, Dot Method (Simple, Multiple, Color)

मानचित्र: परिभाषा और वर्गीकरण, मात्रात्मक मानचित्र- रंगारेख (सरल, अंतर्राष्ट्रीय, स्तर-रंजन विधि, सरल छाया विधि, चित्रीय विधि) प्रतीक विधि/चित्रात्मक विधि/ज्यामितीय विधि और नामांकित विधिय मात्रात्मक मानचित्र: समान मानचित्र (समताप और समदाव), वर्णमात्री, बिन्दु (सरल, मिश्रित, रंग)।

**Unit -II**

Topographical Sheet- Introduction, Importance, History of Topographical Mapping in India, Geographical Survey of India, Classification of Indian Topographical Sheet (Nomenclature and Numbering of Topographical Sheet), Conventional Signs / Symbols, Method of Studying and Interpretation of Topo Sheet; Measures of Dispersion- Standard Deviation, Quartiles Primatic compass surviying method and calculation of included angles and correction of bearings (Mathematically and Bowdich method)

स्थलाकृतिक मानचित्र- परिचय, महत्व, भारत में स्थलाकृतिक मानचित्रण का इतिहास, भारतीय भौगोलिक सर्वेक्षण, भारतीय स्थलाकृति शीट का वर्गीकरण (स्थलाकृतिक शीट का नामकरण) और कर्मांकन, पारंपरिक संकेत/प्रतीक, स्थलाकृतिक अंशचित्र का अध्ययन और व्याख्या। अपकिरण के माप-प्रमाप विचलन, चतुर्थक प्रिज्मीय कम्पास सर्वेक्षण विधियां, अन्तर्गत कोणों का परिकलन एवं दिक्मानों का संसोधन (गणितीय विधि एवं बाउदिच का नियम)

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**Recommended Readings:**

- Misra, R.P & Ramesh. (1986). A Fundamentals of Cartography. New Delhi: McMillan Co.
- Monkhouse, F. J. and Wilkinson, H. R. (1973). Maps and Diagrams. London: Methuen.
- Rhind, D. W. and Taylor, D. R. F. (2000). Cartography: Past, Present and Future. International Cartographic Association.
- Robinson, A. H., (2009). Elements of Cartography. New York: John Wiley and Sons.
- Robinson, A.H. (2000). Elements of Cartography. U.S.A.: John Wiley & Sons.
- Sarkar, A. K. (2005). Practical Geography: A Systematic Approach. Calcutta: Oriental Longman.
- Sharma, J. P. (2010). Prayogik Bhugol. Meerut: Rastogi Publishers.
- Singh, R.L. and Dutt, P.K. (2010). Elements of Practical Geography. New Delhi: Kalyani Publishers.

**Course Learning Outcomes:**

By the end of the course, students will be able to:

1. To make students aware about the various types of maps and their use in further studies.
2. To develop skills and competency regarding the topographical sheets and make them to read various physical and cultural features.



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