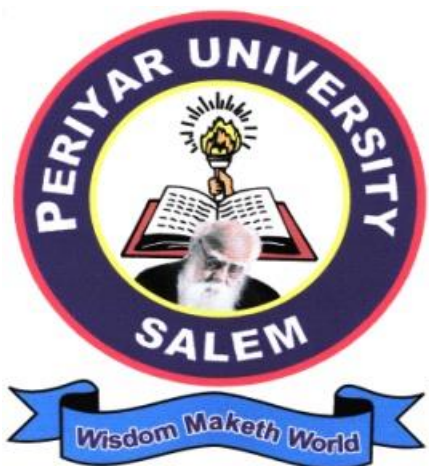


**PERIYAR UNIVERSITY**

**PERIYAR PALKALAI NAGAR**

**SALEM - 11**



**DEGREE OF BACHELOR OF SCIENCE  
CHOICE BASED CREDIT SYSTEM (CBCS)  
SYLLABUS FOR B.SC. GEOGRAPHY  
FOR THE STUDENTS ADMITTED FROM THE  
ACADEMIC YEAR 2021-2022 ONWARDS**

## **BOARD OF STUDIES**

1. **Dr. P. Thangavelu** Chairman  
Assistant Professor and Head  
Department of Geography  
A.A.Govt. Arts College  
Namakkal – 2
2. **Dr. A. Raja** Member  
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Department of Geography  
Govt. Arts College (Auto)  
Salem – 7
3. **Mrs. S. Bharathi** Member  
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Department of Geography  
J.K.K Nataraja College of Arts Science  
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4. **Dr. R. Vasanthi** Member  
Assistant Professor & Head  
Department of Geography  
Sri Vijaya Vidyalaya College of Arts Sciences,  
Nallampalli, Dharmapuri – 636807
5. **Dr. R. Jegankumar** University Nominee  
Associate Professor and Head  
Department of Geography  
Bharathidasan University  
Tiruchirappalli – 620024
6. **Dr. R. Jaganathan** Member External  
Professor and Head  
Department of Geography,  
University of Madras,  
Chepauk, Chennai - 5
7. **Thiru. M. Panneer Selvam** Member External  
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Department of Geography  
Govt. Arts College (Auto)  
Coimbatore – 641018
8. **Dr. P. Thangaraju** Industrial Personal  
Geo Exploration and Mining Solution  
(GEMS), 17, Advaita Ashram Road  
Fairlands, Salem – 636004
9. **Dr. M. Vijaya Prabhu** Alumni  
UGC Post Doctoral Fellow  
1/133, Ayampali Kattu Valavu,  
Sivasakthi Nagar, Pachanampatti (PO)  
Omalur (Tk), Salem (Dt) – 636455

## **REGULATIONS**

### **1. CONDITION FOR ADMISSION**

A candidate who has passed Higher Secondary Examination in academic or vocational stream with any subject under higher secondary board of examination, Tamil Nadu or an examination accepted as Equivalent there to by the syndicate subject to such conditions as may be prescribed thereto are permitted to appear and qualify for the B.Sc. degree examination of this university after a course of study of three academic years.

### **2. DURATION OF THE COURSE**

The course for the degree of Bachelor of Science shall consist of three academic years divided into six semesters. Each semester consists of 90 working days. Practical examinations will be conducted at the end of even semesters.

### **3. FEATURES OF CBCS**

Under Choice Based Credit System (CBCS), a set of papers consisting of core papers, Elective papers, Skill based elective papers and Non-Major elective papers are offered. Beside the core Papers, which are totally related to the major subject, the students have the advantage of studying supportive papers and non-major papers. This provides enough opportunity to the students to learn not only the major subject but also inter disciplinary and application oriented subjects.

### **4. CREDITS**

In CBCS, each paper is assigned with a certain number of credits depending upon the workload of the students. The total credits to be earned by a student to qualify for the degree is 140. The credit of the paper is fixed by giving due weightage to the syllabus content and contact hours per week.

### **5. PASSING MINIMUM**

#### **THEORY**

<b>University Examination (EA)</b>	<b>Internal Assessment (CIA)</b>
75 Marks	25 Marks

### Classification of Internal Assessment Structure

	Marks
Tests	: 15 Marks
Assignment	: 05 Marks
Attendance	: 05 Marks
<b>Total Marks</b>	<b>: 25 Marks</b>
Passing Minimum (CIA) 40%	: 10 Marks
Passing Minimum (EA) 40%	: 30 Marks
<b>Total Passing Minimum</b>	<b>: 40 Marks</b>

### PRACTICAL

University Examination (EA)	Internal Assessment (CIA)
60 Marks	40 Marks

### Classification of Internal Assessment Structure

	Marks
Submission	: 10 Marks
Test	: 10 Marks
Attendance	: 10 Marks
Continuous Assessment in Practical Class	: 10 Marks
<b>Total Marks</b>	<b>: 40 Marks</b>
Passing Minimum (CIA) 40%	: 16 Marks
Passing Minimum (EA) 40%	: 24 Marks
Attendance	: 05 Marks
<b>Total Passing Minimum</b>	<b>: 40 Marks</b>

For the theory paper, the candidates shall be declared to have passed the examination if he/she secures not less than 30 marks out of 75 marks in the University examination in each theory paper and 10 marks out of 25 marks in the Internal Assessment and in total not less than 40 marks.

For the practical paper, the candidates should get 24 marks (including the marks of record notebook) out of 60 marks in the University examination, 16 marks out of 40 marks in the Internal Assessment and in total not less than 40 marks to get passed the examination. There is no passing minimum for the record notebook. However submission of a record notebook is essential.

## **6. CLASSIFICATION OF SUCCESSFUL CANDIDATES**

Candidates who secure not less than 60% of the aggregate marks in the whole Examination shall be declared to have passed the examination First class.

All other successful candidates shall be declared to have passed in the Second class.

Candidates who obtain 75% of the marks in the aggregate shall be deemed to have passed the examination in First Class with Distinction provided they pass all the examinations prescribed for the course at the first appearance.

Other successful candidates who secure below 50% shall be declared to have passed the examination in Third class.

## **7. MAXIMUM DURATION FOR THE COMPLETION OF THE UG PROGRAMME**

The maximum duration for completion of the UG Programme shall not exceed twelve semesters.

## **8. COMMENCEMENT OF THIS REGULATION**

These regulations shall take effect from the academic year 2021-2022, i.e., for students who are to be admitted to the first year of the course during the academic year 2021-2022 and thereafter.

## **9. TRANSITORY PROVISION**

Candidates who were admitted to the UG course of study before 2021-2022 shall be permitted to appear for the examinations under those regulations for a period of three years i.e., up to and inclusive of the examination of April/May 2025. Thereafter, they will be permitted to appear for the examination only under the regulations then in force.

## SCHEME OF EXAMINATIONS

The scheme of examination for different semesters shall be as follows:

Course Structure under OBE (Semester-wise Details)

### Branch I Geography

(For the students admitted from the Academic year 2021-2022 onwards)

Part	Paper Code	Course	Title of the Paper	Hours	Credit
<b>SEMESTER - I</b>					
I		Language	Tamil – I	5	3
II		Language	English – I	5	3
III		Core Theory – I	Climatology	4	4
		Allied I: Theory – I	Statistics – I	4	4
		Allied Practical – I	Statistics Practical*	3	-
		Core Practical – I	Major Practical – I* Representation of Relief and Climatic Data	3	-
IV		Add-on Course	Professional English	4	4
		Common	Value Education (Yoga)	2	2
<b>NO. OF COURSES - 6</b>			<b>TOTAL</b>	<b>30</b>	<b>20</b>
<b>* Examination at the End of Second Semester</b>					
<b>SEMESTER - II</b>					
I		Language	Tamil – II	5	3
II		Language	English – II	5	3
III		Core Theory – II	Oceanography	4	4
		Allied I: Theory – II	Statistics –II	4	4
		Allied Practical – I	Statistics Practical	3	3
		Core Practical – I	Major Practical – I - Representation of Relief and Climatic Data	3	3
IV		Add-on Course	Professional English	4	4
		Common	Environmental Studies	2	-
<b>NO. OF COURSES – 8</b>			<b>TOTAL</b>	<b>30</b>	<b>24</b>
<b>SEMESTER - III</b>					
I		Language	Tamil – III	6	3
II		Language	English – III	6	3
III		Core Theory – III	Geomorphology	4	5
		Allied II: Theory – I	Botany - I	4	4
		Allied Practical – I	Botany Practical*	3	-
		Core Practical – II	Major Practical – II* Map Interpretation and Socio-Economic Data Representation	3	-
IV		SBEC - I	Fundamentals of Physical Geography	2	3
	<b>NMEC – I</b>			2	2
<b>NO. OF COURSES – 8</b>			<b>TOTAL</b>	<b>30</b>	<b>20</b>
<b>* Examination at the End of Fourth Semester</b>					
<b>SEMESTER - IV</b>					
I		Language	Tamil – IV	6	3
II		Language	English – IV	6	3
III		Core Theory – IV	Regional Geography of Tamil Nadu	4	5
		Allied II: Theory – II	Botany - II	4	4
		Allied Practical – I	Botany Practical	3	3
		Core Practical – II	Major Practical – II Map Interpretation and Socio-Economic Data Representation	3	3

IV		SBEC - II	Geography of Travel and Tourism	2	2
			<b>NMEC - II</b>	2	2
<b>NO. OF COURSES - 8</b>			<b>TOTAL</b>	<b>30</b>	<b>25</b>
<b>SEMESTER - V</b>					
III		Core Theory - V	Human Geography	5	5
		Core Theory - VI	Natural Regions of the World	4	5
		Core Theory - VII	Fundamentals of Cartography	5	5
		Core - Practical - III	Major Practical - III* Map Projections and Surveying	3	-
		Core - Practical - IV	Major Practical - IV* Remote Sensing Techniques in Geography	3	-
		Core Elective - I	Bio-geography	4	4
	Core Elective - II	Remote Sensing and GIS	4	4	
IV		SBEC - III	Physical Geography of India	2	2
		Add-on Course (Internship)	Field Visit and Report Preparation	-	-
<b>NO. OF COURSES - 8</b>			<b>TOTAL</b>	<b>30</b>	<b>25</b>
<b>* Examination at the End of Sixth Semester</b>					
<b>SEMESTER - VI</b>					
III		Core Theory - VIII	Geography of Resources	5	5
		Core Theory - IX	Regional Geography of Asia	5	5
		Core - Practical - III	Major Practical - III Map Projections and Surveying	3	3
		Core - Practical - IV	Major Practical - IV Remote Sensing Techniques in Geography	3	3
		Core Elective - III	Economic Geography of India	5	5
		Core Elective - IV	Geography of Population and Settlement	5	5
IV		SBEC - IV	Principles of Surveying	4	4
		Common	*Extension Activities	-	-
<b>NO. OF COURSES - 8</b>			<b>TOTAL</b>	<b>30</b>	<b>30</b>
<b>TOTAL NO. OF COURSES - 45</b>			<b>GRAND TOTAL</b>	<b>180</b>	<b>144</b>
<b>UE - University Examination</b>			<b>CIA - Continuous Internal Assessment</b>		
<b>SBEC - Skill Based Elective Course</b>			<b>NMEC - Non Major Elective Course</b>		

**QUESTION PATTERN**

**CORE, SKILL BASED, ELECTIVE AND NON-MAJOR ELECTIVE  
AND ALLIED COURSES**

**Max Marks = 75**  
**Internal Marks = 25**  
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**Total = 100**  
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**Part – A (15 X 1 = 15 Marks)**  
**Answer ALL the Questions**  
*Three questions from each section*

**Part – B (2 X 5 = 10 Marks)**  
**Answer ANY TWO Questions out of Five**  
*Answer should not exceed 300 words*

**PART-C (5X10=50 MARKS)**  
**Answer ALL the Questions**  
*One question from each section*  
*Answer should not exceed 1200 words*

**QUESTION PATTERN**

**MAJOR COURSE PRACTICALS**

**Internal Marks = 40**  
**University Examination + Record = 60**  
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**Total = 100**  
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**Answer ALL the Questions**  
**Each question carries 10 Marks (5X10=50 Marks)**  
**For Record Submission = 10 Marks**  
Total Marks (50+10) = 60



Semester - I  
**Core Theory – I**  
**CLIMATOLOGY**

**Paper Code: 21UGG01**

- Unit I: Definition of Climatology:** Rotation and Revolution of the Earth, Solstice, Equinox and Seasons, Elements of Weather and Climate, Composition and Structure of the Atmosphere, Insolation: factors affecting Insolation, Global energy budget, Horizontal and Vertical Distribution Inversion of Temperature and affecting factors.
- Unit II: Atmospheric Pressure:** Diurnal and Seasonal Variations – Vertical and Horizontal distribution and factors affecting – Pressure Gradient – Coriolis force and Deflection. Winds: Causes and Types - Jet stream, planetary winds, Monsoon and Local winds.
- Unit III: Atmospheric Moisture and Precipitation:** Humidity types - Condensation – Cloud types – Precipitation and Rainfall: Types.
- Unit IV: Air Masses and Fronts:** types, classification and properties – Atmospheric Disturbances: Tropical, Temperate Cyclones, Thunderstorms and Tornadoes – Origin, Development and associated weather conditions.
- Unit V: Climatic Classification:** Need and Basis of Climatic Classification – Koppen's Climatic Classification – Weather forecasting.

**Reference Books:**

1. Critchfield, H. (1975). *General Climatology*. Prentice-Hall, New York.
2. Das, P.K. (1968). *The Monsoons*. National Book Trust, New Delhi.
3. Mather, J.R. (1974). *Climatology: Fundamentals and Applications*. McGraw-Hill, New York.
4. Patterson, S. (1969). *Introduction of Meteorology*. McGraw-Hill Book Co., London.
5. Stringer, E.T. (1982). *Foundation of Climatology*. Surjeet Publications, New Delhi.
6. Trewartha, G.T. (1968). *An Introduction to Climate (4<sup>th</sup> Edition)*. McGraw-Hill Book Kogakushu Ltd., New York.

Semester - II  
**Core Theory – II**  
**OCEANOGRAPHY**

**Paper Code: 21UGG02**

- Unit I: Oceanography:** Scope, Content, Significance, Distribution of Land and Sea – Continental Shelf, Continental Slope, Deep Sea Plain, Oceanic Deeps and Submarine Canyons.
- Unit II: Relief Features of the Major Oceans:** Atlantic, Pacific and Indian Ocean – Horizontal and Vertical Distribution of Seawater Temperature, Salinity: Factors Affecting Salinity and Distribution.
- Unit III: Ocean Water Circulation:** Factors Influencing Ocean Circulation – General Circulation of Ocean Currents, Currents of the Atlantic, Pacific and Indian Ocean, Waves and Tides: Definition and Types, Tsunamis: Origin and Effects.
- Unit IV: Marine Sediments:** Types of Marine Sediments: Classification and Distribution – Coral Reefs types.
- Unit V: Marine Resources:** Types of Marine Resources – Distribution and Uses – Tidal Energy.

**Reference Books:**

1. Anikouchine, W.A. and Sternberg, R.W. (1973). *The World Oceans - An Introduction to Oceanography*. Prentice-Hall, Englewood Cliffs, New Jersey.
2. Garrison, T. (1998). *Oceanography: An Invitation to Marine Science (3<sup>rd</sup> Edition)*, Wadsworth Publishing Company, Belmont, California.
3. Gerald, S. (1980). *General Oceanography: An Introduction*. John Wiley & Sons, New York.
4. King, C.A.M. (1972). *Beaches and Coasts*. Edward Arnold, London.
5. King, C.A.M. (1975). *Oceanography for Geographers*. Edward Arnold, London.
6. Ramasamy, G. (1970). *Oceanography* (Tamil Edition). Tamil Nadu Text Book Society, Chennai.
7. Sharma, R.C. and Vatal, M. (1970). *Oceanography for Geographers*. Chaitanya Publishing House, Allahabad.

Semester - II  
**Core Practical - I**  
**REPRESENTATION OF RELIEF AND CLIMATIC DATA**

**Paper Code: 21UGGP01**

**Unit I: Map:** Definition and types – Geo-coordinate System: Latitude and Longitude - Time Zone and International date line.

**Unit II: Scales:** Meaning and types – Construction of Linear, Comparative and Diagonal Scales – Conversion of Scales.

**Unit III: Measurement of Distance:** Thread, Divider and Rotometer methods; Measurement of Area: Square and Strip methods. Enlargement and Reduction of Map: Square and Similar Triangle methods.

**Unit IV: Representation of Relief Features:** Interpolation of Contours – Contour diagrams with Cross-section.

**Unit V: Representation of Climatic Data:** Climatic Graphs, Climograph, Hythergraph and Ergograph – Windrose diagram.

**Reference Books:**

1. Singh, G. (1996). *Map Work and Practical Geography*. Vikas Publishing House Pvt. Ltd., New Delhi.
2. Khan Z.A. (1998). *Text Book of Practical Geography*. Concept Publishing Co., New Delhi.
3. Khullar, D.R. (2004). *Essentials of Practical Geography*. New Academic Publishing Co., Jalandhar.
4. Monkhouse, F.J. and Wilkinson, H.R. (1961). *Maps and Diagrams*. Methuen & Co., New York.
5. Negi, B.S. (1995). *Practical Geography*. Kedarnath, Meerut.

Semester - III  
**Core Theory - III**  
**GEOMORPHOLOGY**

**Paper Code: 21UGG03**

**Unit I: Meaning, Scope, Content and Significance of Geomorphology:** Universe – Solar system – Origin of the earth – Hypothesis of Kant, Laplace and James.

**Unit II: Internal Structure of the Earth:** Rock Types: Igneous, sedimentary and metamorphic. Geomorphic Processes: Internal and external processes – Faults, Folds and Cracks, Volcanism and Earthquakes: types and distribution.

**Unit III: External Processes:** Weathering: Physical, Chemical and Biological. Mass wasting: Soil creep, landslide, rock fall, rock slip and mud flow.

**Unit IV: Landforms produced due to Erosion and Deposition with reference to:** a. Running water, and b. Underground water.

**Unit V: Landforms produced due to Erosion and Deposition with reference to:** a) Glaciers, b) Winds, and c) Waves.

**Reference Books:**

1. Dayal, P.A. (1996). *Text book of Geomorphology*. Shukla Book Depot, Patna.
2. Kale, V.S. and Gupta, A. (2001). *Elements of Geomorphology*. Oxford University Press, Calcutta.
3. Monkhouse, F.J. (1974). *Principles of Physical Geography*. Hodder and Stoughton, London.
4. Pitty, A.F. (1974). *Introduction to Geomorphology*. Methuen, London.
5. Singh, S., (1998): *Geomorphology*, Prayag Pustakalay, Allahabad.
6. Sparks, B.W. (1960). *Geomorphology*. Longmans, London.
7. Strahler, A.N. and Strahler, A.H. (1987). *Modern Physical Geography (3<sup>rd</sup> Edition)*. John Wiley and Sons, New York.
8. Sivamoorthy, A. (1964). *Geomorphology* (Tamil Edition). Tamil Nadu Text Book Society, Chennai.

Semester-III  
**Skill-Based Elective Course - I (SBEC)**  
**FUNDAMENTALS OF PHYSICAL GEOGRAPHY**

**Paper Code: 21UGGS01**

- Unit-I      General Geography:** Nations and Capitals, Geographical locations - Latitude, Longitude and Time Zone, Solar system and Planets.
- Unit-II      Landforms:** Major Relief features, Earth's External and Internal forces and agents of Denudation-Features formed by them.
- Unit-III     Climatology:** Atmosphere, insolation-Temperature, Pressure-Wind-Humidity-Forms of condensation and Precipitation-Types and distribution of rainfall - Air mass- Front, Cyclones.
- Unit-IV     Oceanography:** Land and Sea distribution-Bottom Topography of Oceans-Temperature, Salinity, Current, Tide, Coral reefs, Ocean deposits and Resources.
- Unit-V      Biogeography:** Elements of biogeography - Environment, Habitat, Plants and animals - Distribution Groupings-Distribution of forests and major communities.

**Reference Books:**

1. Dayal, P.A. (1996). *Text book of Geomorphology*. Shukla Book Depot, Patna.
2. Sivamoorthy, A. (1964). *Geomorphology (Tamil Edition)*. Tamil Nadu Text Book Society, Chennai.
3. Lal, D.S. (1989). *Climatology*. Chaitanya Publisher's House, Allahabad.
4. Critchfield, H. (1975). *General Climatology*. Prentice-Hall, New York.
5. Christopherson, R.W. (2011). *Geosystems: An Introduction to Physical Geography (8<sup>th</sup> Edition)*. Prentice Hall, New Jersey.

Semester - III  
**NMEC – I - Non-Major Elective Courses**  
**GEOGRAPHY OF INDIA**

**Paper Code: 21UGGN01**

- Unit-I      General Aspect:** Location and Extent – Neighbouring Countries – Administrative Units – Major Physiographic Division.
- Unit-II      Climate:** Seasons and Monsoon - Major River system - Irrigation: Type and Distribution – Major Multipurpose Projects.
- Unit-III     Natural Vegetation:** Major Soil type; Agricultural: Distribution and Production of Major Crops – Rice, Wheat, Tea, Coffee, Rubber, Sugar cane and Cotton.
- Unit-IV     Mineral Resources and their Distribution:** Iron ore, Manganese, Bauxite - Power Resources and their Distribution - Hydel, Atomic, thermal and Wind energy.
- Unit-V      Major Industries:** Cotton Textiles, Iron and Steel – Population Distribution – Transport.

**Reference Books:**

1. Singh, G. (1976). *A Geography of India*. Atma Ram & Sons Pub., New Delhi.
2. NCERT (2002). *India Physical Environment (Class IX)*. NCERT Publications, New Delhi.
3. Siddhartha, K. and Mukherjee, S. (2013). *Geography through Maps (11<sup>th</sup> Edition)*. Kisalaya Publications Pvt. Ltd., New Delhi.
4. Husain, M. (2014). *Geography of India (5<sup>th</sup> Edition)*. McGraw Hill Education, New Delhi.
5. Sharma, T.C. and Coutinho, O. (1978). *Economic and Commercial Geography India (2<sup>nd</sup> Edition)*. Vikas Publishing House Pvt Ltd., New Delhi.
6. Mamoria, C.B. (1980). *Economic and Commercial Geography of India*. Shiva Lal Agarwala & Company, Agra.
7. Dubey, R.N. and Negi, B.S. (1968). *Economic and Commercial Geography of India*. Kitabmahal, Allahabad.
8. Tiwari, R.C. (2010). *Geography of India*. Prayag Pustak Bhawan, Allahabad.

Semester - IV  
**Core Theory – IV**  
**REGIONAL GEOGRAPHY OF TAMIL NADU**

**Paper Code: 21UGG04**

**Unit I: Location and Extent:** Administrative units – Major relief features – Major rivers – Climate: temperature, Seasonal and Annual rainfall – distribution, Soil: types and their distribution.

**Unit II: Irrigation and Agriculture:** types and distribution – canal, tank and well irrigation, Agriculture: distribution and production of rice, cotton, sugarcane, and rain fed crops, oil seeds, tea and coffee.

**Unit III: Forest, Livestock and Fisheries:** types and distribution, forest products, Livestock: cattle, sheep, dairying and fisheries-inland and deep-sea fishing.

**Unit IV: Mineral and Industrial Resources:** General distribution and production. Power resources: Hydel, thermal, atomic and wind power, Industries: distribution and production of – Iron and steel, cement, sugar, cotton, automobile and paper.

**Unit V: Transport and Population:** Roads, Railways, Air and Sea transportation - Important ports, Population – growth and distribution of rural and urban population.

**Reference Books:**

1. Kumaraswamy, S.V. (2002). *Geography of Tamil Nadu* (Tamil Edition), Sakthi Abirami Pathipagam, Kumbakonam.
2. *Statistical Hand Book of Tamil Nadu*. Department of Economics and Statistics (2004). Government of Tamil Nadu, Chennai.
3. *Tamil Nadu – An Economic Appraisal 2011-12 to 2013-14* (2014). Department of Evaluation and Applied Research, Chennai.
4. *Season and Crop Report of Tamil Nadu for the Agricultural Year 2003-2004* (2004). Department of Economics and Statistics, Chennai.

Semester - IV  
**Core Practical - II**  
**MAP INTERPRETATION AND**  
**SOCIO-ECONOMIC DATA REPRESENTATION**

**Paper Code: 21UGGP02**

**Unit I: Meteorological Signs and Symbols:** Station Model – Study and Interpretation of Weather Reports of India (January, July, May and November only).

**Unit II: Indian Topographical Maps:** Conventional Signs and Symbols - Interpretation of Indian Topographical maps (Plain, Plateaus, Hills and Mountains) Cultural features (Transportation and Settlements)

**Unit III: Representation of Economic Data:** One Dimensional Diagrams – Bars: Two Dimensional Diagrams: Rectangular, Squares and Circles – Three Dimensional Diagrams: Cubes and Spheres.

**Unit IV: Pyramidal Diagrams:** Pictorial – Flow – Line and Pie diagrams.

**Unit V: Methods of Representing Distribution of Data:** Drawing of Isopleths, Choropleths, Chorochromatic and Choroschematic Maps.

**Reference Books:**

1. Monkhouse, F.J. and Wilkinson, H.R. (1971). *Maps and Diagrams (3<sup>rd</sup> Edition)*. Methuen & Co., London.
2. Singh, G. (1995). *Map Work and Practical Geography (3<sup>rd</sup> Edition)*. Vikas Publishing House Pvt. Ltd., New Delhi.
3. Khan, M.Z.A. (1998). *Text Book of Practical Geography*. Concept Publishing Company, New Delhi.
4. Misra, R.P. and Ramesh, A. (1989). *Fundamentals of Cartography*. Concept Publishing Company, New Delhi.
5. Negi, B.S. (1998). *Practical Geography*. Kedarnath and Ramnath, Meerut.
6. Saha, P. and Basu, P. (2013). *Advanced Practical Geography*. Kolkata Books and Allied Publisher, Kolkata.



Semester-IV  
**Skill-Based Elective Course - II (SBEC)**  
**GEOGRAPHY OF TRAVEL AND TOURISM**

**Paper Code: 21UGGS02**

- Unit-I**     **Tourism:** Scope and Significance of Tourism – Basic components of tourism: Attraction, Accessibility and Accommodation – Factors affecting tourism activities – Types of tourism.
- Unit-II**     **Travel Documents:** Passport and Visa – types – Tourist facilities and services: Transport facilities – Accommodation, Catering and Hospitality – Entertainment, Trade, Fairs, Festival, Sports and Games.
- Unit-III**    **Accommodation:** Significance and role in tourism industry – Hotel types, Motels, Choultries, Guest Houses, Youth Hostels, Tour Operators.
- Unit-IV**     **Tourism and Travel Agencies:** Functions - Role of trade fairs and festivals - National and International sports and games as promoters - Tourism in Tamil Nadu - Impact on Economy.
- Unit-V**     **Major Tourist Centers of India:** Selected centers only (Jaipur, Agra, Shimla, Ajanta and Ellora) – A Geographical study of tourist centers: Udgamandalam, Kodaikanal, Yercaud, Bengaluru and Mysuru.

**Reference Books:**

1. Seth, P.N. and Bhat, S.S. (2012). *An Introduction to Travel and Tourism*. Sterling Publishers Private Ltd., New Delhi.
2. Ghosh, B. (2009). *Tourism and Travel Management (2<sup>nd</sup> Edition)*. Vikas Publishing House Pvt. Limited. New Delhi.
3. Singh, A.P. (1989). *Himalayan Environment and Tourism*. Chugh Publications, Allahabad.
4. Kaul, R.N. (1985). *Dynamics of Tourism: A Trilogy*. Sterling Publishers Pvt. Limited, New Delhi.
5. Bhatia, A.K. (2002). *Tourism Development: Principles and Practices*. Sterling Publishers Pvt. Limited, New Delhi.
6. Singh, S.N. (1985). *Geography of Tourism and Recreation with Special Reference to Varanasi*. Inter India Publication, New Delhi.
7. Das, M. (1983). *India, a Tourist Paradise: Introducing a Wonderful Land and a Wonderful People*. Sterling Publishers Pvt. Limited, New Delhi.

Semester – IV  
**NMEC – II - Non-Major Elective Courses**  
**GEOGRAPHY OF TAMIL NADU**

**Paper Code: 21UGGN02**

**Unit-I**      **Location and Extent:** Administrative units – Major relief features Major rivers – Climate: temperature, Seasonal and Annual rainfall - distribution, Soil: types and their distribution.

**Unit-II**      **Forest, Livestock and Fisheries:** types and distribution, forest products, Livestock: cattle, sheep, dairying and fisheries-inland and deep-sea fishing.

**Unit-III**     **Irrigation and Agriculture:** types and distribution – canal, tank and well irrigation, Agriculture: distribution and production of rice, cotton, sugarcane and oil seeds, tea and coffee.

**Unit-IV**     **Mineral and Industrial Resources:** General distribution and production. Power resources: Hydel, thermal, atomic and wind power, Industries: distribution and production of – Iron and steel, cement, sugar, cotton, automobile and paper.

**Unit-V**      **Transport:** Roads, Railways, Air and Sea transportation - Important ports, Population: growth and distribution of rural and urban population.

**Reference Books:**

1. Kumaraswamy, S.V. (2002). *Geography of Tamil Nadu* (Tamil Edition), Sakthi Abirami Pathipagam, Kumbakonam.
2. *Statistical Hand Book of Tamil Nadu*. Department of Economics and Statistics (2004). Government of Tamil Nadu, Chennai.
3. *Tamil Nadu – An Economic Appraisal 2011-12 to 2013-14* (2014). Department of Evaluation and Applied Research, Chennai.
4. *Season and Crop Report of Tamil Nadu for the Agricultural Year 2003-2004* (2004). Department of Economics and Statistics, Chennai.

Semester - V  
**Core Theory – V**  
**HUMAN GEOGRAPHY**

**Paper Code: 21UGG05**

- Unit I: Basics:** Scope and Content of Human Geography – Interrelationship between Man and Environment – Concepts – Determinism, Possibilism, Neo-determinism and Probabilism.
- Unit II: Race:** Major Races – Caucasoid, Mongoloid and Negroid; Distribution, Racial Conflicts and Racial Prejudice.
- Unit III: Religion:** Distribution of World Religion: Hinduism, Christianity, Islam, Buddhism and Judaism.
- Unit IV: Languages:** Major World Languages and their Distribution – Geographical Factors – Significances.
- Unit V: Cultural Diffusion:** Meaning and Elements – Types of Diffusion – Cultural Hearths: Major Cultural Hearths of the World – Cultural Realms: Meaning and Bases of Delimitation-Major Cultural Worlds.

**Reference Books:**

1. Husian, M. (2011). *Human Geography*. Rawat Publication, New Delhi.
2. Trewarta, G.T. (1969). *A Geography of Population: World Patterns*. John Wiley & Sons, New York.
3. Leong, G.C. and Morgan, G.C. (1982). *Human and Economic Geography*. Oxford University Press, London.
4. Chandna, R.C. (2010). *Population Geography*, Kalyani Publisher, New Delhi.
5. Hassan, M.I. (2005). *Population Geography*, Rawat Publications, Jaipur.
6. Daniel, P.A. and Hopkinson, M.F. (1989). *The Geography of Settlement*, Oliver & Boyd, London.

Semester - V  
**Core Theory – VI**  
**NATURAL REGIONS OF THE WORLD**

**Paper Code: 21UGG06**

**Unit I: Definition:** Natural Regions of the World – Equatorial Region: Situation and extent, Climate, Natural Vegetation, Animal life, Human life and Economic Activity.

**Unit II: Tropical Region:** Tropical Monsoon Region – Tropical Savanna – Climate – Soil – Vegetation – Life in Tropics – Economic Activity.

**Unit III: Arid Region:** World Deserts – Hot Deserts – Cold Deserts – Climate – Soil – Vegetation – Life in Deserts – Economic Activity.

**Unit IV: Temperate Region:** World Grasslands – (Prairies – Pampas – Downs – Valdes – Canterbury) Climate – Soils – Life in Temperate Regions – Economic activity.

**Unit V: Tundra Region:** Arctic Region – Climate – Vegetation – Life in Tundra Region – Economic Activity.

**Reference Books:**

1. Heintzelman, O.H. and Highsmith (Jr.), R.M. (1973). *World Regional Geography*, Prentice Hall Ltd., New Delhi.
2. Hussain, M. (2004). *World Geography*. Rawat Publication, New Delhi.
3. Robinson, H. (1977). *Monsoon Asia*. McDonald and Evans Ltd., Plymouth.
4. Stamp, L.D. (1967). *Asia: A Regional and Economic Geography*. B.I. Publication Ltd., New Delhi.
5. Tirtha, R. (2005). *Geography of Asia*. Rawat Publication, New Delhi.
6. Wheeler (Jr.), J., Kostabade, R. and Thoman, R.S. (1969). *Regional Geography of the World*. Holt Rinehart and Winston, New York.

Semester –V  
**Core Theory – VII**  
**FUNDAMENTALS OF CARTOGRAPHY**

**Paper Code: 21UGG07**

- Unit-I**      **Cartography:** Nature, Scope and Content of Cartography – Art and Science of Cartography – Cartography as a system of communication – Maps – Classification and their uses – Growth, development and modern trends in cartography.
- Unit-II**      **Map drawing and Measuring Techniques:** Map Setting – The Earth and System of Co-ordinates – Base Map – Compilation and Generalization of Maps.
- Unit-III**     **Symbolization:** Types of Cartographic symbols – Point, line, and Area symbols – Qualitative and Quantitative data generalization.
- Unit-IV**     **Map Design and Layout:** General design problems – Principles of Cartographic design and design of map symbols – Lettering – Lettering methods, Positioning of letters – Geographical names.
- Unit-V**      **Map Reproduction:** Process of Map production –Photographic systems – Multiple Reproduction Processes – Computer application in Cartography – Computer mapping – Remote Sensing and Cartography – Uses of Air photographs and Satellite images in Cartography.

**Reference Books:**

1. Misra, R.P. and Ramesh, A. (1989). *Fundamentals of Cartography*. Concept Publishing Company, New Delhi.
2. Monkhouse, F.J. and Wilkinson, H.R. (1971). *Maps and Diagrams (3<sup>rd</sup> Edition)*. Methuen & Co., London.
3. Robinson, H. (1995). *Elements of Cartography (6<sup>th</sup> Edition)*. John Wiley & Sons, New York.
4. Sethurakkayi, S. (2005). *Cartography (Tamil Edition)*. Shanmugam Publications, Madurai.
5. Keates, J.S. (1989). *Cartographic Design and Production (2<sup>nd</sup> Edition)*. Longman Scientific and Technical, Essex.
6. Raize, E. (1982). *Principles of Cartography*. McGraw Hill Publicatins, New York.

Semester – V  
**Core Elective – I**  
**BIO-GEOGRAPHY**

**Paper Code: 21UGGE01**

- Unit-I Bio – Geography:** Definition, Scope and significance Evolution of life on Earth : Origin of Fauna and Flora- plants and Animal evolution throughout the geological times- distribution of plant life on the earth.
- Unit-II Basic Ecological Principles:** Bio- Energy cycle in the Terrestrials Eco-system- Tropical level and food chain. concepts of Biome, Eco-tone and community.
- Unit-III Bio- Diversity:** Problems of Extinction of plant and animal life- Habitat decay and need for conservation- Process of Desertification and its Consequences- Industrial Effluents and their affects on fresh water Biology.
- Unit-IV World Biomes:** Major Biomes- Tropical forest- Tropical Grasslands- Temperate Grassland and Tropical Deserts.
- Unit-V Ecological and Environmental Managements:** Study of Ecological regions of Himalayas and the Western Ghats- Conservation and Management- Major Global Environmental Problems- International Co- Operation.

**Reference Books:**

1. Robinson, H. (1972). *Biogeography*. Macdonald and Evans Publication, London.
2. Singh, S. (1991). *Environmental Geography*. Prayag Pustak Bhawan, Allahabad.
3. Pears, N. (1993). *Basic Biogeography*. Longman Publications, London.
4. Newbiggin, M. (1968). *Plant and Animal Geography*. Geography. Egmont Books Ltd., London.
5. Saxena, H.M. (2004). *Environmental Geography (2<sup>nd</sup> Edition)*. Rawat Publications, Jaipur.

Semester-V  
**Core Elective – II**  
**REMOTE SENSING AND GIS**

**Paper Code: 21UGGE02**

- Unit-I Remote Sensing:** Definition and Types: Aerial, Satellite and Radar, Development of Space Programmes - History and Organization associated with Remote Sensing in India and other Countries.
- Unit-II Remote Sensing Processes:** Sources of Energy, Electromagnetic Radiations (EMR) Atmospheric Windows, Energy Interaction with Atmosphere and Earth, Types of Platforms, Active and Passive Remote Sensing Methods, Ideal Remote Sensing Systems.
- Unit-III Fundamentals of Aerial Remote Sensing:** Components of Aerial Camera, Types of Aerial Photographs, Marginal Information of Aerial Photographs, elements of Photo Interpretation.
- Unit-IV Fundamentals of Satellite Remote Sensing:** Types of Satellites: Geo-stationary and Sun-synchronous Satellites, Resolution: Spatial, Spectral, Radiometric and Temporal, Types of Data Products, Marginal Information of Satellite Images.
- Unit-V Geographic Information Systems (GIS)** Meaning-Developments-Raster and Vector data-Data integration-Global positioning system (GPS) - Advantages and Limitations of GIS and GPS – Field Visit and Industrial Visit.

**Reference Books:**

1. Barrett, E.C. and Curtis, L.F. (1992). *Introduction to Environmental Remote Sensing*. Chapman and Hall Publications, London.
2. Campbell, J.B. and Wynne, R.H. (1987). *Introduction to Remote Sensing*. The Guilford Press, New York.
3. Lillesand, T.M. and Kiefer, R.W. (1987). *Remote Sensing and Image Interpretation*. John Wiley and Sons, New York.
4. Lueder, D.R. (1959). *Aerial Photographic Interpretation – Principles and Applications*. McGraw Hill Book Co., New York.
5. Wolf, P.R. (1974). *Elements of Photogrammetry: with Air Photo Interpretation and Remote Sensing*. McGraw Hill Book Co., New York.

Semester - V  
**Skill-Based Elective Course – III (SBEC)**  
**PHYSICAL GEOGRAPPHY OF INDIA**

**Paper Code:17UGGS03**

- Unit-I**      **Location and Extent** – Structure and Relief – Physiographic Divisions.
- Unit-II**      **Climate of India-** Factors Determining – Mechanism of Indian Monsoon – The Rhythm of Seasons – Distribution of Rainfall – Climatic Regions of India.
- Unit-III**     **Drainage Systems of India** – Himalayan System – Peninsular System
- Unit-IV**     **Soils** – Major types and distribution – Soil degradation – Soil Conservation.
- Unit-V**      **Natural Vegetation** – Forest types and Distribution – Forest covers in India – Wild life and Biosphere reserves of India – Conservation of Wild life.

**Reference Books:**

1. Singh, G. (1976). *A Geography of India*. Atma Ram & Sons Pub., New Delhi.
2. NCERT (2002). *India Physical Environment (Class IX)*. NCERT Publications, New Delhi.
3. Siddhartha, K. and Mukherjee, S. (2013). *Geography through Maps (11<sup>th</sup> Edition)*. Kisalaya Publications Pvt. Ltd., New Delhi.
4. Husain, M. (2014). *Geography of India (5<sup>th</sup> Edition)*. McGraw Hill Education, New Delhi.
5. Tirtha, R. (2002). *Geography of India*. Rawat Publications, Jaipur.



Semester - VI  
**Core Theory – VIII**  
**GEOGRAPHY OF RESOURCES**

**Paper Code: 21UGG08**

- Unit I: Resources: Meaning:** Nature and Significance in Resources – Classification and Types – Need for Conservation and Sustainable Development.
- Unit II: Water Resources:** Importance – Classification – Continent wise Distribution and Utilization of Water Resources – Problems and Issues.
- Unit III: Biotic Resources:** Major Forest Types and Distribution – Livestock – Fisheries – Major Fishing Grounds of the World.
- Unit IV: Minerals Resources:** Classification and Distribution of Major Minerals: Iron and Copper – Energy Resources – Coal, Petroleum, Hydro Electric and Atomic Power – Major Industrial Zones of the World.
- Unit V: Transportation and Trade:** Different Modes of Transport – Trade – Types, Factors affecting Trade – Multilateral and Bilateral – Agreements of Trade – WTO – GATT.

**Reference Books:**

1. Alexander, J.W. (1964). *Economic Geography*. John Wiley & Sons Inc, New York.
2. Leong, C.H. and Morgan, G.C. (1982). *Economic and Human Geography (2<sup>nd</sup> Edition)*. Oxford University Press, Kuala Lumpur.
3. Bengtson, N.A. and Royen, W.V. (1935). *Fundamentals of Economic Geography*. Prentice Hall Inc, New York.
4. Thomas, R.S. (1962). *The Geography of Economic Activities*. McGraw Hill, New York.
5. Mather, A.S. and Chapman, K. (1995). *Environmental Resources*. John Wiley and Sons, New York.

Semester - VI  
**Core Theory – IX**  
**REGIONAL GEOGRAPHY OF ASIA**

**Paper Code: 21UGG09**

**Unit I: Location and extent:** Physiography – Climate – Drainage systems and Major Rivers.

**Unit II: Soil Types and Classification:** Agricultural Production – Rice and Wheat – Rubber, Tea and coffee, Sugar cane and Jute.

**Unit III: Mineral and Energy Resources:** Iron ore, Manganese, Tin, Bauxite, Coal, Petroleum and Natural Gas.

**Unit IV: Industrial Production and Distribution:** Iron and Steel, Cotton textiles, Sugarcane and Automobile.

**Unit V: Population:** Growth and Distribution; Transport: Road, Railway, Water transport and Airway; Trade.

**Reference Books:**

1. Leong, C.H. and Morgan, G.C. (1982). *Economic and Human Geography (2<sup>nd</sup> Edition)*. Oxford University Press, Kuala Lumpur.
2. Tirtha, R. (2001). *Geography of Asia*. Rawat Publications, New Delhi.
3. Manku, D.S. (2010). *A Regional Geography of the World*. Kalyani Publishers, New Delhi
4. Stamp, L.D. (1969). *Asia: A Regional and Economic Geography*. Methuen Publications, London.
5. Tiwari, S.K. (1975). *Geography of Asia*. Kedarnath and Ramnath, Meerut.
6. Shafi, M. (2000). *Geography of South Asia*. MacMillan and Co., Kolkata.

Semester - VI  
**Core Elective – III**  
**ECONOMIC GEOGRAPHY OF INDIA**

**Paper Code: 21UGGE03**

- Unit-I**     **India and its Neighbouring Countries:** Political Boundaries with Neighbouring Countries- Indian Agriculture : Importance – Suitable conditions for cultivation of major food crops.
- Unit-II**     **Production and Distribution of Major Commercial crops:** Sugar cane-Tea-Coffee – Cotton – Tobacco- Problems of Indian Agriculture – Green revolution.
- Unit-III**    **Mineral and Power Resources:** Iron ore, Bauxite, Manganese and their distribution – Power Resources: Hydel Power, Thermal Power, Atomic and wind power.
- Unit-IV**    **Industries:** Iron and Steel, Cotton textile – Petro-chemical, Automobile: Production and their distribution – Major Industrial Region of India- Transport: Road, Railway , Water way and Air ways - Major Trade in India.
- Unit-V**     **Population:** Spatial Distribution and Density- Population Growth, Urban and Rural Population – Urbanization - Smart Cities in India.

**Reference Books:**

1. Singh, G. (1976). *A Geography of India*. Atma Ram & Sons Pub., New Delhi.
2. NCERT (2002). *India Physical Environment (Class IX)*. NCERT Publications, New Delhi.
3. Siddhartha, K. and Mukherjee, S. (2013). *Geography through Maps (11<sup>th</sup> Edition)*. Kisalaya Publications Pvt. Ltd., New Delhi.
4. Husain, M. (2014). *Geography of India (5<sup>th</sup> Edition)*. McGraw Hill Education, New Delhi.
5. Sharma, T.C. and Coutinho, O. (1978). *Economic and Commercial Geography India (2<sup>nd</sup> Edition)*. Vikas Publishing House Pvt Ltd., New Delhi.
6. Mamoria, C.B. (1980). *Economic and Commercial Geography of India*. Shiva Lal Agarwala & Company, Agra.
7. Dubey, R.N. and Negi, B.S. (1968). *Economic and Commercial Geography of India*. Kitabmahal, Allahabad.
8. Tiwari, R.C. (2010). *Geography of India*. Prayag Pustak Bhawan, Allahabad.

Semester - VI  
**Core Elective – IV**  
**GEOGRAPHY OF POPULATION AND SETTLEMENT**

**Paper Code: 21UGGE04**

- Unit I: Population:** As a Resource and Constraints to Development – Factors affecting Distribution and Density of Population – World distribution of Population.
- Unit II: Migration:** Meaning - Types of Migration: National, International, Voluntary and Forced Migrations; Causes and Consequences of Migration.
- Unit III: Settlements:** Definition, Site and Situation of Rural Settlements, Factors Influencing Settlement Patterns, Classification of Settlements: Rural and Urban.
- Unit IV: Urban and Urbanization:** Meaning – Classification of Towns and Cities – Site, Situation and Functions – Urban Hierarchy and Hinterland – Pattern of Urbanization in India.
- Unit V: Urban Morphology:** Theories relating to the morphology of town - a) Concentric zone theory, b) Sector theory and c) Multiple Nuclei theory – Morphology of an Indian city: Allahabad.

**Reference Books:**

1. Trewartha, G.T. (1969). *A Geography of Population: World Patterns*. John Wiley & Sons Inc, New York.
2. Clarke, J.I. (1984). *Geography and Population: Approaches and Applications*. Pergamon Press, London.
3. Bogue, D.J. (1969). *Principle of Demography*. John Wiley & Sons Inc, New York.
4. Cole, J.P. and King, C.A.M. (1968). *Quantitative Geography: Techniques and Theories in Geography*. John Wiley & Sons Inc, New York.
5. Mayer, H. and Kohn, C. (1959). *Readings in Urban Geography*. University of Chicago Press, Chicago.
6. Singh, R.Y. (2002). *Geography of Settlements*. Rawat Publication, New Delhi.
7. Maurya, S.D. (2012). *Human Geography*. Prayag Publications, Allahabad.

Semester - VI  
**Core Practical - III**  
**MAP PROJECTIONS AND SURVEYING**

**Paper Code: 21UGGP03**

**Unit I: Map Projections:** Definition, Significance and Classification – Construction and Classification – Construction of Zenithal Projections: Equidistant, Equal Area, Gnomonic, Orthomorphic and Orthographic (or) Stereographic Projections.

**Unit II: Construction of Cylindrical Projection:** Equidistant, Equal Area and Mercator Projections – Simple Conical Projections with One and Two Standard Parallels – Bonne's and Polyconic Projections.

**Unit III: Surveying:** Chain Survey: Triangulation, Open and Closed Traverse – Prismatic Compass: Open and Closed Traverse.

**Unit IV: Plane Table Survey:** Open and Closed Traverse - Correction of Closing Errors - Bowditch Method - Finding of Resection Points: Trial and Error Methods and Tracing Paper methods (Three Points only).

**Unit V: Survey with Indian Clinometers and Abney Level:** Accessible and Inaccessible Methods - Dumpy Level - Collimation Method, Calculation of Heights.

**Reference Books:**

1. Jayachandaran, S. (1964). *Practical Geography (Tamil Edition)*. Tamil Nadu Text Book Society, Chennai.
2. Khan, M.Z.A. (1998). *Text Book of Practical Geography*. Concept Publishing Company, New Delhi.
3. Negi, B.S. (1998). *Practical Geography*. Kedarnath and Ramnath, Meerut.
4. Singh, G. (1995). *Map Work and Practical Geography (3<sup>rd</sup> Edition)*. Vikas Publishing House Pvt. Ltd., New Delhi.
5. Monkhouse, F.J. and Wilkinson, H.R. (1971). *Maps and Diagrams (3<sup>rd</sup> Edition)*. Methuen & Co., London.

Semester - VI  
**Core Practical - IV**  
**REMOTE SENSING TECHNIQUES IN GEOGRAPHY**

**Paper Code: 21UGGP04**

**Unit I: Remotely Sensed Data Product – Aerial Photos:** Types, Scale of Photos – Marginal Information of Aerial Photos – Stereo Vision Tests.

**Unit II: Satellite Imagery:** Data Acquiring Techniques – Marginal Information – Basic Elements of Image Interpretation – Interpreting Equipments: Viewing and Measuring Instruments.

**Unit III: Aerial Photo Interpretation:** Tracing and Interpreting the Aerial Photographs.

**Unit IV: Satellite Image Interpretation:** Tracing and Interpreting the Satellite Data.

**Unit V: Comparative Study of Map Information:**

- 1) Air Photos with Topographic Maps
- 2) Air Photos with Satellite Images.
- 3) Satellite Images with Topographic maps.

**Reference Books:**

1. Barrett, E.C. and Curtis, L.F. (1992). *Introduction to Environmental Remote Sensing*. Chapman and Hall Publications, London.
2. Campbell, J.B. and Wynne, R.H. (1987). *Introduction to Remote Sensing*. The Guilford Press, New York.
3. Lillesand, T.M. and Kiefer, R.W. (1987). *Remote Sensing and Image Interpretation*. John Willy and Sons, New York.
4. Lueder, D.R. (1959). *Aerial Photographic Interpretation – Principles and Applications*. McGraw Hill Book Co., New York.
5. Wolf, P.R. (1974). *Elements of Photogrammetry: with Air Photo Interpretation and Remote Sensing*. McGraw Hill Book Co., New York.

Semester – VI  
**Skill-Based Elective Course - IV (SBEC)**  
**PRINCIPLES OF SURVEYING**

**Paper Code: 21UGGS04**

**Unit-I      Surveying:** Definition – Scope and content – types of surveying – Area measurement – Height determination – Advantages of survey.

**Unit-II      Chain Survey:** Accessibility –FMB – Methods of chain survey – Triangulation – Open and Closed traverse – Plotting of chain survey and results.

**Unit-III    Prismatic Compass:** Parts of prismatic compass – Accessories – Traverse – Plotting of prismatic compass – Errors and its corrections - Bowditch's method of correction – calculation of bearings from included angles.

**Unit-IV    Plane Table:** Equipments – Methods of plane table survey – preparation work for the plane table survey – Leveling and Orientating the table - Resection points – Trial and Error Method – Tracing Paper Method – Advantages and Disadvantages of plane table survey.

**Unit-V      Height measurement:** Determination of height – Dumpy level – Parts and Methods of dumpy level survey – Height measurement - Indian Clinometer and Abney level.

**Reference Books:**

1. Singh, K.L.R. and Singh, R. (1970). *Map Work and Practical Geography*. Central Book Depot, Allahabad.
2. Jayachandaran, S. (1964). *Practical Geography (Tamil Edition)*. Tamil Nadu Text Book Society, Chennai.
3. Saha, P. and Basu, P. (2013). *Advanced Practical Geography*. Kolkata Books and Allied Publisher, Kolkata.
4. Alvi, Z. (1998). *A Text book of Practical Geography*. Sangam Books Limited, Hyderabad.
5. Herubin, C.A. (1991). *Principles of Surveying (4<sup>th</sup> Edition)*. Prentice Hall, New Jersey.

**PRACTICAL MODEL QUESTION PAPER**

**PERIYAR UNIVERSITY**  
**B.Sc., DEGREE EXAMINATION**  
(For the candidates admitted from 2021-2022 onwards)

Name of the course: **B.Sc., GEOGRAPHY**

Title of the Paper - **Practical-III: PROJECTIONS AND SURVEYING**

Paper Code: **21UGGP03**  
Semester – VI

Time: 3 Hours

Max. Marks: 60  
For Practical: (5 x 10) = 50  
For Record = 10

**Answer ALL Questions**  
(All Questions carry equal marks)

1. Draw a zenithal equal area projection for the reduced earth of 2 inches for northern hemisphere. The latitude and longitudinal interval is  $15^\circ$ .  
2 அங்குலம் ஆரமுள்ள சுருக்கப்பட்ட கோளத்தின் வடபகுதியைக் காட்டும் ஒரு சமபரப்பு உச்சிச்சட்டம் வரைக. அதில் அட்சக்கங்களும், தீர்க்கங்களும்  $15^\circ$  இடைவெளியில் இருக்குமாறு குறிக்க.
2. Measure and plot the distance between C<sub>1</sub>, C<sub>2</sub> and C<sub>3</sub> points of the given building with the use of chain survey.  
சங்கிலி அளவியைப் பயன்படுத்தி கொடுக்கப்பட்ட கட்டிடத்தின் C<sub>1</sub>, C<sub>2</sub> மற்றும் C<sub>3</sub> முனைகளுக்கு இடையேயுள்ள தூரத்தை அளந்து படம் வரைக.
3. Find the height of the given building through inaccessible method by using the Indian Clinometer.  
இந்திய கிளைனோமீட்டரைப் பயன்படுத்தி கொடுக்கப்பட்ட கட்டிடத்தின் உயரத்தை அணுகா முறையில் கண்டுபிடிக்கவும்.
4. By using the Dumpy level find out the elevation difference of given three points of A, B and C.  
மட்ட மாணியைப் பயன்படுத்தி கொடுக்கப்பட்டுள்ள A, B, மற்றும் C புள்ளிகளுக்கு இடையேயுள்ள உயர்வு மற்றும் தாழ்வினை கண்டுபிடிக்கவும்.
5. Write a short note on: சிறுகுறிப்பு எழுதுக.
  - a) Bowditch method of correction - பெளடிச் முறையில் பிழை நீக்குதல்
  - b) Alidade - நேர்கோல்
  - c) Abney Level. - அப்னே மட்டம்
  - d) Properties of Lambert Projection. - லாம்பர்ட் கோட்டுச்சட்டத்தின் பண்புகள்

**THEORY MODEL QUESTION PAPER**



Sl.No. 5320

Course Code: 21UGG01

**PERIYAR UNIVERSITY**  
**B.Sc., DEGREE EXAMINATION**

(For the candidates admitted from the year 2021-22 onwards)

MAJOR SUBJECT: GEOGRAPHY

**CLIMATOLOGY**

**Time: 3 Hours**

**Maximum Marks: 75**

**Part A - (15 X 1 = 15 Marks)**

**Answer ALL the Questions**

*Choose the correct answer*

1. When the earth's shadow falls on the moon a \_\_\_\_\_ eclipse is caused.  
(a) lunar eclipse  
(b) solar eclipse  
(c) both (a) and (b) .  
(d) None of the above

பூமியின் நிழல் நிலவில் விழும் போது ஒரு \_\_\_\_\_ கிரகணம் ஏற்படுகிறது.

- (அ) சந்திர கிரகணம்  
(ஆ) சூரிய கிரகணம்  
(இ) (அ) மற்றும் (ஆ) இரண்டும்  
(ஈ) எதுவுமில்லை
2. The layer in which radio waves are reflected  
(a) Ionosphere  
(b) Stratosphere  
(c) Troposphere  
(d) Mesosphere

ரேடியோ அலைகளை பிரதிபலிக்கும் அடுக்கு \_\_\_\_\_.

- (அ) அயனோஸ்பியர்  
(ஆ) அடுக்கு மண்டலம்  
(இ) வெப்ப மண்டலம்  
(ஈ) மீசோஸ்பியர்
3. Short wave energy from the sun \_\_\_\_\_.  
(a) Insolation  
(b) Lapse rate  
(c) Radiation  
(d) Inversion

சூரியனில் இருந்து குறுகிய அலை ஆற்றல் \_\_\_\_\_.

- (அ) இன்சோலேசன்
- (ஆ) குறைவு வீதம்
- (இ) கதிர்வீச்சு
- (ஈ) இன்வர்தன்

4. Wind is caused due to \_\_\_\_\_.
- (a) pressure differences
  - (b) revolution of the earth
  - (c) gravitational force
  - (d) centrifugal force

காற்று \_\_\_\_\_ காரணமாக ஏற்படுகிறது.

- (அ) அழுத்த வேறுபாடுகள்
- (ஆ) பூமியின் சுழற்சி
- (இ) ஈர்ப்பு விசை
- (ஈ) உயரம்

5. Doldrums refers to an area of \_\_\_\_\_ pressure.
- (a) high
  - (b) low
  - (c) intermediate
  - (d) very high

டொல்டிரம்ஸ் (மந்தமானவை) \_\_\_\_\_ அழுத்தத்தின் பகுதியைக் குறிக்கின்றன.

- (அ) உயர்ந்த
- (ஆ) குறைந்த
- (இ) இடைநிலை
- (ஈ) மிக அதிக

6. \_\_\_\_\_ is a local wind.
- (a) Trade wind
  - (b) Monsoons
  - (c) Westerlies
  - (d) Sea breeze

\_\_\_\_\_ ஒரு லோக்கல் (உள்ளூர்) காற்று

- (அ) வர்த்தக காற்று
- (ஆ) மழைக்காலம்
- (இ) வெஸ்டர்லிஸ்
- (ஈ) கடல் காற்று

7. The change of water from gaseous to liquid or solid state is
- (a) evaporation
  - (b) condensation
  - (c) radiation
  - (d) inversion

வாயு நிலையில் இருந்து திரவ அல்லது திட நிலைக்கு நீரை மாற்றுவது

- \_\_\_\_\_.
- (அ) ஆவியாதல்
  - (ஆ) ஒடுக்கம்
  - (இ) கதிர்வீச்சு
  - (ஈ) இன்வர்தன் (தலைகீழ் நிகழ்வு)

8. A light fog is called \_\_\_\_\_.
- (a) snow
  - (b) mist
  - (c) cloud
  - (d) temperate

ஒரு ஒளி மூடுபனி \_\_\_\_\_ என்று அழைக்கப்படுகிறது.

- (அ) பனி
- (ஆ) மூடுபனி
- (இ) மேகம்
- (ஈ) மிதவெப்ப

9. Cyclonic rainfall is common in \_\_\_\_\_ region.
- (a) Polar
  - (b) Tropical
  - (c) Equatorial
  - (d) Temperate

\_\_\_\_\_ மண்டலத்தில் சூறாவளி மழை பொதுவானது.

- (அ) துருவ மண்டலம்
- (ஆ) வெப்ப மண்டலம்
- (இ) பூமத்தியரேகை
- (ஈ) மிதவெப்ப மண்டலம்

10. The boundary separating two different air masses is called \_\_\_\_\_.
- (a) Anticyclone
  - (b) Cyclone
  - (c) Front
  - (d) Storm

இரண்டு வெவ்வேறு காற்று நிறையை பிரிக்கும் எல்லை \_\_\_\_\_ என அழைக்கப்படுகிறது.

- (அ) ஆண்டிசைக்ளோன்
- (ஆ) சூறாவளி
- (இ) முனை
- (ஈ) புயல்

11. Cyclones do not develop between \_\_\_\_\_ latitudes.
- (a) 5°N and 5°S
  - (b) 10° – 30° N
  - (c) 10 – 30° S

(d) 20 – 40° S

\_\_\_\_\_ அட்சரேகைகளுக்கு இடையில் தூறாவளிகள் உருவாவதில்லை.

(அ) 5°N and 5°S

(ஆ) 10° – 30° N

(இ) 10 – 30° S

(ஈ) 20 – 40° S

12. Air mass that originate over oceans \_\_\_\_\_.

(a) continental

(b) cold

(c) maritime

(d) warm

பெருங்கடல்களில் உருவாகும் காற்று நிறை \_\_\_\_\_.

அ) கண்டம்

(ஆ) குளிர்

(இ) கடல்

(ஈ) சூடான

13. In the \_\_\_\_\_ type of climate all months have above 18°C

(a) A

(b) B

(c) C

(d) D

\_\_\_\_\_ வகை காலநிலையில் எல்லா மாதங்களும் 18°C க்கு மேல்

இருக்கும்.

(அ) A

(ஆ) B

(இ) C

(ஈ) D

14. Koppens designates dry climate as \_\_\_\_\_.

(a) A

(b) B

(c) C

(d) D

கோப்பன் வறண்ட காலநிலையை \_\_\_\_\_ என குறிப்பிடுகிறார்.

அ) A

(ஆ) B

(இ) C

(ஈ) D

15. The application of Science and technology to predict the state of the atmosphere for a future time and a given location is called \_\_\_\_\_.

(a) prediction

- (b) weather forecast
- (c) astronomy
- (d) astrology

எதிர்கால் நேரம் மற்றும் கொடுக்கப்பட்ட இருப்பிடத்திற்கான வளிமண்டலத்தின் நிலையை கணிக்க அறிவியல் மற்றும் தொழில்நுட்பத்தின் பயன்பாடு \_\_\_\_\_ என அழைக்கப்படுகிறது.

- அ) கணிப்பு
- (ஆ) வானிலை முன்னறிவிப்பு
- (இ) வானியல்
- (ஈ) ஜோதிடம்

**Part B - (2 X 5 = 10 Marks)**  
**Answer ANY TWO Questions**  
*Answer should not exceed 300 words*

16. Draw and explain the structure of the atmosphere.  
வளிமண்டலத்தின் கட்டமைப்பை வரைந்து விளக்கு.
17. What is Coriolis force?  
கோரியாலிஸ் சக்தி என்றால் என்ன?
18. What are the different types of humidity?  
ஈரப்பதத்தின் பல்வேறு வகைகள் யாவை?
19. Give the conditions favorable for the development of tropical cyclones.  
வெப்ப மண்டல சூறாவளிகள் உருவாக சாதகமான நிலைகளை எழுதுக.
20. Write a brief note on meteorology.  
வானிலை பற்றிய சுருக்கமான குறிப்பை எழுதுக.

**PART C - (5 X 10=50 Marks)**  
**Answer ALL the Questions**  
*One question from each section*  
*Answer should not exceed 1200 words*

21. (a) Give a detailed account of the heat balance of the earth.  
பூமியின் வெப்ப சமநிலை குறித்து விரிவான விவரங்களை எழுதுக.  
Or  
(b) Describe the factors affecting horizontal distribution of temperature.  
வெப்பநிலையில் கிடைமட்ட பரவலை பாதிக்கும் காரணிகளை விவரி.
22. (a) Explain the planetary wind system of the world.  
உலகின் கிரகக்காற்று அமைப்புகளை விளக்கு.  
Or  
(b) Describe the major pressure belts.  
முக்கியமான அழுத்த மண்டலங்களைப் பற்றி விவரி.

23. (a) Classify clouds and describe their characteristics.  
மேகங்களை வகைப்படுத்தி அவற்றின் பண்புகளை விவரி.  
Or  
(b) Discuss the different types of rainfall with examples.  
பல்வேறு வகையான மழையை எடுத்துக்காட்டுகளுடன் வவரி.
24. (a) What are air masses? Elaborate.  
காற்று நிறை என்றால் என்ன? விரிவாக விவரி.  
Or  
(b) What are fronts? Elaborate.  
முனைகள் என்றால் என்ன? விரிவாக விவரி.
25. (a) What is the basis of Koppen's climatic classification? Explain.  
கோப்பனின் காலநிலை வகைப்பாட்டின் அடிப்படை என்ன? விரிவாக விவரி.  
Or  
(b) Write an essay on the tropical climate of Koppan.  
கோப்பனின் வெப்பமண்டல காலநிலையை குறித்து ஒரு கட்டுரை எழுதுக.

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