

# Syllabus Geography (Honours)

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— CBCS Syllabus for 3-Year Undergraduate  
Honours Course in GEOGRAPHY —



## BANKURA UNIVERSITY

Bankura, West Bengal, 722155



<b>1. Introduction</b> .....	4
<b>2. Scheme for CBCS Curriculum</b>	
2.1 Credit Distribution across Courses .....	5
2.2 Scheme for CBCS Curriculum .....	6
2.3 Choices for Discipline Specific Electives.....	8
2.4 Choices for Skill Enhancement Course .....	8
2.5 Choices for Generic Electives .....	8
<b>3. Core Subjects Syllabus</b>	
3.1 SHGEO/101/C-1T – Geo-Tectonics and Geomorphology .....	9
3.2 SHGEO/102/C-2P- Cartographic Techniques.....	11
3.3 SHGEO/201/C-3T– Human Geography.....	13
3.4 SHGEO/202/C-4P – Cartograms and Mapping Techniques .....	15
3.5 SHGEO/301/C-5T – Climatology .....	17
3.6 SHGEO/303/C-6T – Geography of India .....	18
3.7 SHGEO /302/C-7P – Statistical Methods in Geography .....	20
3.8 SHGEO/401/C-8T – Regional Planning and Development .....	22
3.9 SHGEO/402/C-9T – Geography of Economic Activities .....	24
3.10 SHGEO/403/C-10P – Analytical Techniques in Environmental Geography.....	26
3.11 SHGEO/501/C-11T – Evolution of Geographical Thought .....	28
3.12 SHGEO/502/C-12P – Remote Sensing Techniques.....	30
3.13 SHGEO/601/C-13T – Disaster Management .....	32
3.14 SHGEO/602/C-14P –Research Methodology and Field Work.....	33
<b>4. Discipline Specific Elective Subjects Syllabus</b>	
4.1 SHGEO /503/DSE-1 – Hydrology and Oceanography .....	36
4.2 SHGEO /504/DSE-2 – Cultural and Settlement Geography.....	38
4.3 SHGEO/504/DSE-2 –Urban Geography .....	40
4.4 SHGEO /603/DSE-3 – Soil and Biogeography.....	42
4.5 SHGEO/604/DSE-4 – Population Geography .....	44
4.6 SHGEO/604/DSE-4 – Geography of Tourism.....	46



**5. Skill Enhancement Subjects Syllabus**

5.1 SHGEO/305/SEC-1 – Computer Basics and Applications ..... 48  
5.2 SHGEO/405/SEC- 2 – GIS and GNSS ..... 50

**6. Generic Elective Subjects Syllabus**

6.1 SHGEO/103/GE-1 – Physical Basis of Earth ..... 51  
6.3 SHGEO/203/GE-2– Human Geography ..... 52  
6.5 SHGEO /304/GE-3 – Maps and Diagrams ..... 54  
6.7 SHGEO/404/GE-4–EconomicGeography ..... 56

**7. Semester-wise Structure in Honours ..... 58**

**8. Course Objective.....63**

**9. Course Outcome.....63**

**10. Course Specific Outcome..... 63**



## 1. Introduction

The syllabus for Geography at undergraduate level using the Choice Based Credit System (CBCS) has been framed in compliance with model syllabus given by the UGC. This is the second revision after its implementation in 2017. The revision has been made on the basis of the local issues as well as developments in different sectors during this time which demands for the inclusion and exclusion of some of the topics in the syllabus.

The main objective of framing this new syllabus is to give the students a holistic understanding of the subject giving substantial weightage to both the core contents and techniques used in Geography. The syllabus has given equal importance to both the two main branches of geography – Physical and Human.

The ultimate goal of the syllabus is that the students at the end are able to secure a job. Keeping in mind and in tune with the changing nature of the subject, adequate emphasis has been given on new techniques of mapping and understanding of the subject.

The syllabus has also been framed in such a way that the basic skills of subject are taught to the students, and everyone might not need to go for higher studies and the scope of securing a job after graduation will increase.

While the syllabus is in compliance with the UGC model curriculum, but since it did not offer much choice on electives in Physical Geography, one more elective “Soil and Biogeography” has been added.

This new syllabus will train undergraduates to get jobs in the information technology areas as there is great demand for preparation of digital maps and storage and retrieval of geospatial data.



## 2. Scheme for CBCS Curriculum

### 2.1 Credit Distribution across Courses

Course Type	Total Papers	Credits	
		Theory + Practical	Theory*
Core Courses	14	$14*4 = 56$	$14*5 = 70$
		$14*2 = 28$	$14*1 = 14$
Discipline Specific	4	$4*4 = 16$	$4*5 = 20$
Electives		$4*2 = 8$	$4*1 = 4$
Generic Electives	4	$4*4 = 16$	$4*5 = 20$
		$4*2 = 8$	$4*1 = 4$
Ability Enhancement Language Courses	2	$2*2 = 4$	$2*2 = 4$
Skill Enhancement Courses	2	$2*2 = 4$	$2*2 = 4$
<b>Totals</b>	<b>26</b>	<b>140</b>	<b>140</b>

\*Tutorials of 1 Credit will be conducted in case there is no practical component



## 2.2 Scheme for CBCS Curriculum

Semester	Course Name	Course Detail	Credits
I	Ability Enhancement Compulsory Course – I	English Communication / Environmental Science	2
	Core Course – I	Geotectonic and Geomorphology	6
	Core Course – II Practical	Cartographic Techniques	6
	Generic Elective – 1	TBD	4
	Generic Elective – 1 Practical	TBD	2
II	Ability Enhancement Compulsory Course – II	English Communication / Environmental Science	2
	Core Course – III	Human Geography	6
	Core Course – IV Practical	Cartograms and Mapping Techniques	6
	Generic Elective – 2	TBD	4
	Generic Elective – 2 Practical	TBD	2
III	Core Course – V	Climatology	6
	Core Course – VI	Geography of India	6
	Core Course – VII	Statistical Methods in Geography	6
	Skill Enhancement Course – 1	Computer Basics and Computer Applications	2



	Generic Elective – 3	TBD	4
	Generic Elective – 3 Practical	TBD	2
<b>IV</b>	Core Course – VIII	Regional Planning and Development	6
	Core Course – IX	Geography of Economic Activities	6
	Core Course – X Practical	Analytical Techniques in Environmental Geography	6
	Skill Enhancement Course-2	GIS and GNSS	2
	Generic Elective – 4	TBD	4
	Generic Elective – 4 Practical	TBD	2
<b>V</b>	Core Course – XI	Evolution of Geographical Thought	6
	Core Course – XII Practical	Remote Sensing Techniques	6
	Discipline Specific Elective – 1	Hydrology and Oceanography	6
	Discipline Specific Elective – 1 Practical	TBD	2
	Discipline Specific Elective – 2	Cultural and Settlement Geography / Urban Geography	6
	Discipline Specific Elective – 2 Practical	TBD	2
<b>VI</b>	Core Course – XIII	Disaster Management	6
	Core Course – XIV Practical	Research Methodology and Field Work	6
	Discipline Specific Elective – 3	Soil and Bio-Geography	6
	Discipline Specific Elective – 3 Practical	TBD	
	Discipline Specific Elective- 4	Population Geography /Geography of Tourism	6
	Discipline Specific Elective – 4 Practical	TBD	



## 2.3 Choices for Discipline Specific Electives

### Discipline Specific Elective – 1 to 4

SHGEO /503/DSE-1	SHGEO/504/DSE-2	SHGEO/603/DSE-3	SHGEO /604/DSE-4
Hydrology and Oceanography	Cultural and Settlement Geography	Soil and Biogeography	Population Geography
	Urban Geography		Geography of Tourism

## 2.4 Choices for Skill Enhancement Courses

### Skill Enhancement Courses

SHGEO /305/ SEC-1	SHGEO /405/SEC- 2
Computer Basics and Applications	GIS and GNSS

## 2.5 Choices for Generic Electives

### Generic Electives – 1 to 4

SHGEO /103/GE-1	SHGEO /203/GE-2	SHGEO /304/GE-3	SHGEO /404/GE-4
Physical Basis of Earth	Human Geography	Maps and Diagrams	Economic Geography





## 3. Syllabus for Core Subjects

### 3.1 SHGEO /101/C-1T: Geo-Tectonics and Geomorphology

<b>Geo-Tectonics and Geomorphology</b>		<b>6 Credits</b>
Total Marks:	50 (IA-10 Marks + ESE-40 Marks)	
Question Pattern:	Section-A Definition Oriented	(5x2=10)
	Section-B Short Answer Type	(5x4=20)
	Section-C Long Answer Type	(1x10=10)
<b>Unit 1: Earth: Origin and Evolution</b>		
1.1 Origin of Universe (Big Bang Model), Origin of Earth (Nebular Hypothesis of Laplace and Interstellar Dust Cloud Hypothesis of Schimdt) 1.2 Geological Time Scale and Geological History of the Earth 1.3 Isostasy: Origin of the concept, Theories of Airy and Pratt, Isostatic Adjustments, Gravity Anomalies 1.4 Internal Structure of the Earth: Seismological Evidences, physical, chemical and seismic properties of Earth layers.		
<b>Unit 2: Tectonic Theories and Processes</b>		
2.1 Continental Drift Theory of Alfred Wegener 2.2 Palaeo-Magnetism and Sea Floor Spreading 2.3 Plate Tectonic Theory; Plate Composition, Plate Movement, Plate Margins, Triple Junctions. 2.4 Tectonic Processes in relation to Plate Tectonics; Orogenesis, Earthquake, Vulcanicity		
<b>Unit 3: Process Geomorphology</b>		
3.1 Evolution of landforms on Uniclinal, Folded and Faulted Strata 3.2 Landscape Evolution Models: Davis, Penck and Hack 3.3 Climatic Geomorphology: Basic concepts, Morphoclimatic Zones of Peltier 3.4 Hillslopes: Genesis and Morphology		
<b>Reference Books</b>		
<ul style="list-style-type: none"> <li>▶ Bloom A. L., 2001: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, New Delhi.</li> <li>▶ Bridges E. M., 1990: World Geomorphology, Cambridge University Press, Cambridge.</li> <li>▶ Christopherson, Robert W., (2011), Geosystems: An Introduction to Physical Geography, 8 Ed., Macmillan Publishing Company</li> <li>▶ Kale V. S. and Gupta A., 2001: Introduction to Geomorphology, Orient Longman, Hyderabad.</li> <li>▶ Knighton A. D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.</li> </ul>		



- ▶ Selby, M.J., (2005), Earth's Changing Surface, Indian Edition, OUP
- ▶ Skinner, Brian J. and Stephen C. Porter (2000), The Dynamic Earth: An Introduction to physical Geology, 4th Edition, John Wiley and Sons
- ▶ Thornbury W. D., 1969: Principles of Geomorphology, Wiley.
- ▶ Khullar, D.R. (2012), Physical Geography, Kalyani Publishers, New Delhi
- ▶ Mukhopadhyay, S.; Mukhopadhyay, M.; Pal, S. (2010), Advanced River Geography, ACB Publications, Kolkata
- ▶ Choudhuri, S.K. (2018), Fundamentals of Geotectonics, New Central Book Agency, Kolkata
- ▶ Mukhopadhyay, S.; Das, R. (1994), Bhumirup: Udvab o Prakriti Vol-I & II in Bengali, Paschimbanga Rajya Pustak Parshad, Kolkata
- ▶ Basu, P. (2006), Bhugathonik Prakriya o Bhumirup in Bengali, Books and Allied, Kolkata
- ▶ Sil, A. (2012), Bhugathon o Bhumirupbidya in Bengali, The Himalayan Books, Kolkata
- ▶ Sil, A. (2013), Prakriya Bhumirupbidya in Bengali, The Himalayan Books, Kolkata
- ▶ Basu, P. (2014), Prakriya Sonkranta Bhumirupbidya o Sanshlishito Jalobigyan in Bengali, Books and Allied, Kolkata
- ▶ Das, C; Pramanick, T.K. (2018), Prakritik Bhugol in Bengali, Innova Publications, Kolkata
- ▶ Chattopadhyay, G. (2019), Mahajagotik Rahasyo in Bengali, Akshar Prakashan, Kolkata
- ▶ Sengupta, P.K. ( 2019), Bhumikampo in Bengali, Education Forum, Kolkata
- ▶ Saha, S; Roy, T. (2019), Bhugathonik Prakriya o Bhumirupbidya in Bengali, Kalyani Publishers, Kolkata
- ▶ Maity, A.K.; Manna, S. (2020), Bhugathonik o Bhumirupbidya Prosonge in Bengali, Deb Prakashani, Kolkata
- ▶ Tikadar, S. (2022), Prakritik Bhugol in Bengali, Book Syndicate, Kolkata



### 3.2 SHGEO /102/C-2P: Cartographic Techniques

Cartographic Techniques		6 Credits
<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Question-1</b>	<b>(1x10=10)</b>
	<b>Question-2</b>	<b>(1x10=10)</b>
	<b>Question-3</b>	<b>(1x10=10)</b>
	<b>Lab Note Book &amp; Viva-Voce</b>	<b>(5+5=10)</b>

#### Instruction for Laboratory Note Book

- Practical works are to be completed in the classroom.
- Works are to be done in pen/pencil and neatly hand written and signed by class teachers.
- Laboratory Note Books have to be submitted in the examination.

#### Unit-1: Scale

- 1.1 Scale: Definition and Types
- 1.2 Construction of Linear, Comparative (Unit), Diagonal and Vernier scales.
- 1.3 Scale Enlargement and Reduction (Computations)
- 1.4 Calculation of area from maps (Graphical Methods)

#### Unit-2: Map Projections

- 2.1 Map Projections: Nature, Classification and Uses
- 2.2 Basic Concepts: Parallels and Meridians, Datum, Geoid, Scale Factor, Deformation, Orthodrome and Loxodrome.
- 2.3 Principles, Theories, Construction and Properties of select Map Projections: Conical Case- Simple Conical with one and two standard parallels, Polyconic and Sinusoidal; Cylindrical Case- Equal Area, Mercator Zenithal Case- Gnomonic, Stereographic
- 2.4 UTM Grid System.

#### Unit-3: Surveying

- 3.1 Concepts and Principles: Angles, Bearing and Azimuths, Traversing, Radiation, Intersection
- 3.2 Prismatic Compass: Preparation of land use maps by open and closed traverse; computations of compass traverse- Included Angle, Area of traverse
- 3.3 Levelling by Dumpy Level: Profile and Contouring
- 3.4 Calculation of Height and Distance by Transit Theodolite (Base accessible and inaccessible)



### Reference Books

- ▶ Anson R. and Ormelling F. J., 1994: International Cartographic Association: Basic Cartographic Vol. Pergamon Press.
- ▶ Gupta K.K. and Tyagi, V. C., 1992: Working with Map, Survey of India, DST, New Delhi.
- ▶ Mishra R.P. and Ramesh, A., 1989: Fundamentals of Cartography, Concept, New Delhi.
- ▶ Monkhouse F. J. and Wilkinson H. R., 1973: Maps and Diagrams, Methuen, London.
- ▶ Rhind D. W. and Taylor D. R. F., (eds.), 1989: Cartography: Past, Present and Future, Elsevier, International Cartographic Association.
- ▶ Robinson A. H., 2009: Elements of Cartography, John Wiley and Sons, New York.
- ▶ Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
- ▶ Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi
- ▶ Agor, R. (1999), Textbook of Surveying and Levelling, Khanna Publishers, Delhi
- ▶ Venkatramaiah, C. (2011), Textbook of Surveying, Universities Press, Hyderabad
- ▶ Adhikari, S. (2005), Honours Byaboharik Bhugol, Vol-I, Dove Publishing House, Midnapore
- ▶ Das, N.; Khatun, S. (2021), Kartographi- Dharona o Prayog in Bengali, Kalyani Publishers, Kolkata



### 3.3 SHGEO /201/C-3T: Human Geography

#### Human Geography

6 Credits

**Total Marks:** 50 (IA-10 Marks + ESE-40 Marks)

**Question Pattern:** Section-A Definition Oriented (5x2=10)

Section-B Short Answer Type (5x4=20)

Section-C Long Answer Type (1x10=10)

#### Unit 1: Nature and Principles

- 1.1 Human Geography: Nature, scope and recent trends
- 1.2 Approaches to the study of Human Geography; Resource, Locational, Landscape, Environmental
- 1.3 Concept of Race and Ethnicity
- 1.4 Space, Society and Cultural regions, Language and Religion

#### Unit 2: Society and Demography

- 2.1 Evolution of human societies: Hunting and food gathering, pastoralnomadism, subsistence farming, industrial and urban societies
- 2.2 Population growth and distribution, population composition; Demographic Transition model
- 2.3 Population-Resource regions (Ackerman)
- 2.4 Trend of population growth (India)

#### Unit 3: Ekistics and Adaptation

- 3.1 Human adaptation to environment: Eskimo and Santhals
- 3.2 Human population and environment with special reference to development-environment conflict
- 3.3 Social morphology and rural house types in India
- 3.4 Types and patterns of Rural Settlements

#### Reference Books

- ▶ Bergman, E.F (1995): Human Geography-Culture, Connections and Landscape, Prentice Hall, New Jersey
- ▶ Chisholm. (1975): Human Geography, Penguin Books, Hermondsworth.
- ▶ Daniel, P.A. and Hopkinson, M.F. (1989): The Geography of Settlement, Oliver & Boyd, London.
- ▶ Johnston R, Gregory D, Pratt G. et al. (2008): The Dictionary of Human



Geography, Blackwell Publication.

- ▶ Jordan-Bychkov et al. (2006): The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.
  - ▶ Norton. W. (2001): Human Geography, 4th Edition Oxford University Press, Oxford
  - ▶ Pearce D. (1995): Tourism Today: A Geographical Analysis, 2nd edition, Longman Scientific & Technical, London
  - ▶ Pickering K. and Owen A. A. (1997): An Introduction to Global Environmental Issues, 2nd edition Rutledge, London.
  - ▶ Raw, M. (1986): Understanding Human Geography: A Practical Approach, Bell and Hyman. London
  - ▶ Rubenstein, J.M. (2002), The Cultural Landscape, 7th edition, Prentice Hall, Englewood Cliffs
  - ▶ Smith D M (1982): Human Geography: A Welfare Approach, Edward Arnold, London
- 
- ▶ Roy, T.; Mandal, B.; Maity, M.C. (2020), Manabiya Bhugol Anneswan in Bengali, Kalyani Publishers, Kolkata
  - ▶ Dhara, S. (2013), Janasonkhya o Basoti Bhugol in Bengali, Naboday Publications, Kolkata
  - ▶ Mandal, M. (2016), Samajik Bhugol in Bengali, Naboday Publications, Kolkata



### 3.4 SHGEO /202/C-4P: Cartograms and Mapping Techniques

#### Cartograms and Mapping Techniques

6 Credits

<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Question-1</b>	<b>(1x10=10)</b>
	<b>Question-2</b>	<b>(1x10=10)</b>
	<b>Question-3</b>	<b>(1x10=10)</b>
	<b>Lab Note Book &amp; Viva-Voce</b>	<b>(5+5=10)</b>

#### Instruction for Laboratory Note Book

- Practical works are to be completed in the classroom.
- Works are to be done in pen/pencil and neatly hand written and signed by class teachers.
- Laboratory Note Books have to be submitted in the examination.
- Topographical map interpretation has to be done on the basis of Survey of India OSM sheets on 1:50,000 scale.

#### Unit-1: Cartographic Representation of Geographical Data

- 1.1 Geographical Data: Nature, Characteristics and Management
- 1.2 Cartograms: Line Graph, Bar graph, Proportional Circles and Pie
- 1.3 Climatic Diagrams: Wind Rose, Ergo Graph, Ombrothermic Diagram
- 1.4 Age-Sex Pyramid, Dependency Ratio

#### Unit-2: Mapping Techniques

- 2.1 Population Maps and Diagrams: Choropleth method, Distribution by Dot and Sphere
- 2.2 Measures of Inequality: Location Quotient, Gini's Coefficient and Lorenz Curve
- 2.3 Measures of Interaction: Nearest Neighbour Analysis, Gravity Model
- 2.4 Combinational Analysis: Weaver's Crop Combination

#### Unit-3: Interpretation of Topographical Maps

- 3.1 Principles and Nomenclature of Topographical Map (OSM) of Survey of India
- 3.2 Topographic Profile and Broad Physiographic Divisions
- 3.3 Drainage Basin Morphometry: Relative Relief (Smith, 1935), Average Slope (Wentworth, 1930), Stream Frequency and Drainage Density (Horton, 1945)
- 3.4 Interpretation of Physical and Cultural features with the help of Transect Chart



### Reference Books

- ▶ Cuff J. D. and Mattson M. T., 1982: Thematic Maps: Their Design and Production, Methuen Young Books
- ▶ Dent B. D., Torguson J. S., and Holder T. W., 2008: Cartography: Thematic Map Design (6th Edition), McGraw-Hill Higher Education
- ▶ Gupta K. K. and Tyagi V. C., 1992: Working with Maps, Survey of India, DST, New Delhi.
- ▶ Kraak M.-J. and Ormeling F., 2003: Cartography: Visualization of Geo-Spatial Data, Prentice-Hall.
- ▶ Mishra R. P. and Ramesh A., 1989: Fundamentals of Cartography, Concept, New Delhi.
- ▶ Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
- ▶ Slocum T. A., McMaster R. B. and Kessler F. C., 2008: Thematic Cartography and Geovisualization (3rd Edition), Prentice Hall.
- ▶ Tyner J. A., 2010: Principles of Map Design, The Guilford Press.
- ▶ Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi
- ▶ Adhikari, S. (2005), Honours Byaboharik Bhugol, Vol-I, Dove Publishing House, Midnapore
- ▶ Das, N.; Khatun, S. (2021), Kartographi- Dharona o Prayog in Bengali, Kalyani Publishers, Kolkata





### 3.5 SHGEO /301/C-5T: Climatology

<b>Climatology</b>	<b>6 Credits</b>
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<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Section-A Definition Oriented</b>	<b>(5x2=10)</b>
	<b>Section-B Short Answer Type</b>	<b>(5x4=20)</b>
	<b>Section-C Long Answer Type</b>	<b>(1x10=10)</b>

#### Unit-1: Structure and Composition of Atmosphere

- 1.1 Insolation: Factors and Distribution, Global Heat Budget
- 1.2 Inversion of Temperature: Processes and Impact on Surface Weather
- 1.3 Atmospheric Stability and Instability
- 1.4 Forms and processes of Condensation; Mechanism of Precipitation: IceCrystal and Collision-Coalescence Theory

#### Unit-2: Atmospheric Circulation

- 2.1 Factors controlling Air Motion and resulting Flow Patterns
- 2.2 Planetary Wind system with special reference to Tricellular Model; Walker Circulation and ENSO
- 2.3 Jet Stream and Rossby Waves: Origin, Characteristics and Impact on Surface Weather
- 2.4 Genesis of Monsoon with particular reference to South Asia

#### Unit-3: Extreme Events and Climatic Classification

- 3.1 Origin and Classification Airmass; Frontogenesis and Frontolysis
- 3.2 Origin and Characteristics of Tropical and Temperate Cyclones
- 3.3 Classification of World Climates: Schemes of Koppen and Thornthwaite
- 3.4 Climate Change: Causes and Evidences

#### Reference Books

- ▶ Barry R. G. and Carleton A. M., 2001: Synoptic and Dynamic Climatology, Routledge, UK.
- ▶ Barry R. G. and Corley R. J., 1998: Atmosphere, Weather and Climate, Routledge, New York.
- ▶ Critchfield H. J., 1987: General Climatology, Prentice-Hall of India, New Delhi
- ▶ Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: The Atmosphere: An Introduction to Meteorology, Prentice-Hall, Englewood Cliffs, New Jersey.
- ▶ Oliver, J.E.; Hidore, J.J. (2011), Climatology: An Atmospheric Science, Second Edition, Pearson Education, New Delhi
- ▶ Siddhartha, K. (2002), Atmosphere, Weather and Climate, Kisalaya Publications, New Delhi
- ▶ Pramakik, B. (2021), Gotishil Jalabayubidya in Bengali, Santra Publications, Kolkata
- ▶ Bishai, D. (2019), Abohaya o Jalabayubigyan in Bengali, Kalyani Publishers, Kolkata



- ▶ Majumdar, S. (2014), Adhunik Abohaya o Jalabayubigyan in Bengali, Sandhya Prakashani, Kolkata
- ▶ Sil, A. (2009), Abohaya o Jalabayu in Bengali, The Himalayan Books, Kolkata

**3.6 SHGEO /302/C-6T: Geography of India**

<b>Geography of India</b>		<b>6 Credits</b>
<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Section-A Definition Oriented</b>	<b>(5x2=10)</b>
	<b>Section-B Short Answer Type</b>	<b>(5x4=20)</b>
	<b>Section-C Long Answer Type</b>	<b>(1x10=10)</b>
<b>Unit 1: Physical Setting</b>		
1.1 Tectonic and stratigraphic provinces, physiographic divisions 1.2 Drainage Characteristics: Peninsular and Extra-peninsular Drainage-origin and regime 1.3 Climate, soil and vegetation: Characteristics and classification 1.4 Mineral and power resources distribution and utilisation: Iron ore, Coal, Petroleum, Natural Gas		
<b>Unit 2: Cultural and Economic setting</b>		
2.1 Population: Distribution, growth, structure and policy 2.2 Distribution of population by race, caste, religion and language 2.3 Agricultural regions; Green Revolution and its consequences 2.4 Industrial development: Automobile and Information Technology		
<b>Unit 3: Geography of West Bengal</b>		
3.1 Physical perspectives: Physiographic divisions, forest and water resources 3.2 Population: Growth, distribution and human development 3.3 Resources: agriculture, mining and industries 3.4 Regional Problem: Water Scarcity and Irrigation Problem of Bankura Jangalmahal Area		
<b>Reference Books</b>		
<ul style="list-style-type: none"> <li>▶ Deshpande C. D., 1992: India: A Regional Interpretation, ICSSR, New Delhi.</li> <li>▶ Johnson, B. L. C., ed. 2001. Geographical Dictionary of India. Vision Books, New Delhi.</li> <li>▶ Mandal R. B. (ed.), 1990: Patterns of Regional Geography – An International Perspective. Vol. 3 – Indian Perspective.</li> <li>▶ Sdyasuk Galina and P Sengupta (1967): Economic Regionalisation of India, Census of India</li> <li>▶ Sharma, T. C. 2003: India - Economic and Commercial Geography. Vikas Publ., New Delhi.</li> <li>▶ Singh R. L., 1971: India: A Regional Geography, National Geographical Society of</li> </ul>		



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India.

- ▶ Singh, Jagdish 2003: India - A Comprehensive & Systematic Geography, Gyanodaya Prakashan, Gorakhpur.
- ▶ Spate O. H. K. and Learmonth A. T. A., 1967: India and Pakistan: A General and Regional Geography, Methuen.
- ▶ Tirtha, Ranjit 2002: Geography of India, Rawat Publs., Jaipur & New Delhi.
- ▶ Pathak, C. R. 2003: Spatial Structure and Processes of Development in India, Regional Science Assoc., Kolkata.
- ▶ Tiwari, R.C., 2007: Geography of India. Prayag Pustak Bhawan, Allahabad
- ▶ Sharma, T.C., 2013: Economic Geography of India. Rawat Publication, Jaipur
- ▶ Khullar, D. (2014), India: A Comprehensive Geography, 3<sup>rd</sup> Edition, Kalyani Publishers, New Delhi
- ▶ Pal, S.K. (1998), Physical Geography of India: A Study in Regional Earth Sciences, Orient Longman, Kolkata
- ▶ Rudra, K. (2008), Banglar Nadikatha in Bengali, Sahitya Sansad, Kolkata
- ▶ Rudra, K. (2021), Dui Banglar Nadikatha in Bengali, Sahitya Sansad, Kolkata
- ▶ Chattopadhyay, A. (2020), Bharat O Paschimbanger Bhugol in Bengali, Naboday Publications, Kolkata
- ▶ Sen, J. (2021), Bharat O Paschimbanger Bhugol in Bengali, Kalyani Publishers, Kolkata
- ▶ Sarkar, B.C. (2019), Bharater Bhugol in Bengali, Concept Publishing Company, New Delhi



### 3.7 SHGEO /303/C-7P: Statistical Methods in Geography

Statistical Methods in Geography		6 Credits
Total Marks:	50 (IA-10 Marks + ESE-40 Marks)	
Question Pattern:	Question-1	(1x10=10)
	Question-2	(1x10=10)
	Question-3	(1x10=10)
	Lab Note Book & Viva-Voce	(5+5=10)

#### **Instruction for Laboratory Note Book**

- Practical works are to be completed in the classroom.
- Works are to be done in pen/pencil and neatly hand written and signed by class teachers.
- Laboratory Note Books have to be submitted in the examination.

#### **Unit-1: Data Collection and Representation**

- 1.1 Geographical Data Management: Collection (Sampling Techniques- Significance and Types), Classification, Tabulation, Interpretation and Analysis of Geographical Data
- 1.2 Frequency Distribution: Attribute and Variable, Discrete and Continuous, Graphical Representation of Frequency Distribution (Histogram, Polygon, Curve and Ogives)
- 1.3 Measures of Central Tendency: Mean, Median and Mode; Skewness
- 1.4 Measures of Dispersion: Range, Quartile Deviation, Mean Deviation and Standard Deviation, Coefficient of Variation

#### **Unit-2: Data Analysis and Interpretation**

- 2.1 Simple Correlation and Linear Regression
- 2.2 Time Series Analysis: Actual Trend, Semi Average, Moving Average,
- 2.3 Standard Error of Estimate and Standard Scores (Computations and Graphical Representation)
- 2.4 Absolute Residual Mapping

#### **Unit-3: Analysis of Hypothesis**

- 3.1 Hypothesis: Concept and Types; Types of Error
- 3.2 Estimating Confidence Interval and Statistical Significance
- 3.3 Tests of Hypothesis: Chi Square Test; Student 't' Test
- 3.4 Degrees of Freedom; Rejection and Acceptance of Hypothesis



## Reference Books

- ▶ Berry B. J. L. and Marble D. F. (eds.): Spatial Analysis – A Reader in Geography.
- ▶ Ebdon D., 1977: Statistics in Geography: A Practical Approach.
- ▶ Hammond P. and McCullagh P. S., 1978: Quantitative Techniques in Geography: An Introduction, Oxford University Press.
- ▶ King L. S., 1969: Statistical Analysis in Geography, Prentice-Hall.
- ▶ Pal S. K., 1998: Statistics for Geoscientists, Tata McGraw Hill, New Delhi.
- ▶ Sarkar, A. (2013) Quantitative geography: techniques and presentations. Orient Black Swan Private Ltd., New Delhi
- ▶ Silk J., 1979: Statistical Concepts in Geography, Allen and Unwin, London.
- ▶ Spiegel M. R.: Statistics, Schaum's Outline Series.
- ▶ Yeats M., 1974: An Introduction to Quantitative Analysis in Human Geography, McGraw Hill, New York.
- ▶ Gupta, S.C. (2015), Fundamentals of Statistics, 7<sup>th</sup> Edition, Himalaya Publishing House, New Delhi
- ▶ Mahmood, A. (1977), Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi
- ▶ Adhikari, S. (2011), Honours Byaboharik Bhugol, Vol-III in Bengali, Dove Publishing House, Midnapore
- ▶ Moitra, A. (2011), Bhugole Parisonkhyan Poddhati in Bengali, Geo-observing Society, Kolkata
- ▶ Hazra, J.; Banik, G.C. (2020), Bhugole Rashitotter Prayog in Bengali, Naboday Publications, Kolkata



### 3.8 SHGEO/401/C-8T: Regional Planning and Development

Regional Planning and Development		6 Credits
<b>Total Marks:</b>	50 (IA-10 Marks + ESE-40 Marks)	
<b>Question Pattern:</b>	<b>Section-A Definition Oriented</b>	(5x2=10)
	<b>Section-B Short Answer Type</b>	(5x4=20)
	<b>Section-C Long Answer Type</b>	(1x10=10)
<b>Unit 1: Regional Planning</b>		
1.1	Concept of Regions: Types of regions and Methods of delineation.	
1.2	Types of Planning, principles and objectives of regional planning,	
1.3	Steps of Regional Planning, need for regional planning in India, multi- levelplanning in India	
1.4	Regionalisation of India: Physiographic Division of India after R. L. Singh, Planning Regions in India	
<b>Unit 2: Regional Development</b>		
2.1	Development: Meaning, growth versus development	
2.2	Concept of Growth Pole model of Perroux and Growth Centers model in Indian context	
2.3	Theories and models for regional development: Cumulative Causation (Myrdal), Core Periphery (Hirschman and Friedman) and Economic Growth Stage Model (Rostow)	
2.4	Indicators of development: Economic Development, Human Development.	
<b>Unit 3: Regional Planning &amp; Development in India</b>		
3.1	Concept and strategies of regional development in India	
3.2	Nature of regional inequalities and disparities in India	
3.3	Regional and Local Development Programmes: MGNREGA, PMGSY, JJM, JNNURM	
3.4	SEZ and EEZ: Methods of Delineation, Policies and Problems	
<b>Reference Books</b>		
▶	Berry, B.J.L. and Horton, F.F. (1970): Geographic Perspectives on Urban Systems. Prentice Hall, New Jersey.	
▶	Bhat L.S. (1972): Regional Planning In India, Statistical Publishing Society	
▶	Blij H. J. De, 1971: Geography: Regions and Concepts, John Wiley and Sons.	
▶	Chand ,M and Puri V.K. ( 1983) : Regional Planning In India , Allied publishers , New Delhi	
▶	Claval P.I, 1998: An Introduction to Regional Geography, Blackwell Publishers,	



Oxford and Massachusetts.

- ▶ Dickinson, R.E. (1964): City and Region, Rutledge, London.
- ▶ Friedmann J. and Alonso W. (1975): Regional Policy - Readings in Theory and Applications, MIT Press, Massachusetts.
- ▶ Gore C. G., 1984: Regions in Question: Space, Development Theory and Regional Policy, Methuen, London.
- ▶ Gore C. G., Köhler G., Reich U-P. and Ziesemer T., 1996: Questioning Development; Essays on the Theory, Policies and Practice of Development Intervention, Metropolis-Verlag, Marburg.
- ▶ Hall, P. (1992): Urban and Regional Planning, Routledge, London
- ▶ Haynes J., 2008: Development Studies, Polity Short Introduction Series.
- ▶ Johnson E. A. J., 1970: The Organization of Space in Developing Countries, MIT Press, Massachusetts.
- ▶ Kulshetra, S.K,( 2012) : Urban and Regional Planning in India : A Handbook for Professional Practitioners , Sage Publication , New Delhi
- ▶ Kundu, A. (1992): Urban Development Urban Research in India, Khanna Publ. New Delhi.
- ▶ Misra , R.P, Sundaram K.V, Prakash Rao , VLS( 1974): Regional Development Planning in India , Vikas Publication , New Delhi
- ▶ Misra, R.P (1992): Regional Planning: Concepts, Techniques, Policies and Case Studies , Concept , New Delhi
- ▶ Peet R., 1999: Theories of Development, The Guilford Press, New York.
- ▶ UNDP 2001-04: Human Development Report, Oxford University Press.
- ▶ World Bank 2001-05: World Development Report, Oxford University Press, New Delhi
- ▶ Sen, J. (2013), Anchoalik Porikalpona o Anchoalik Bhugol in Bengali, Naboday Publications, Kolkata
- ▶ Barman, N.K.; Maity, M.; Pahari, S. (2021), Anchal Prasongo in Bengali, Kalyani Publishers, Kolkata
- ▶ Sahoo, A.; Gayen, S. (2012), Anchal, Porikalpona o Bharater Anchalik Porikroma in Bengali, Deb Prakashani, Kolkata
- ▶ Mukherjee, B.; Mukherjee, D. (2010), Tiritiya Duniyai Arthonaitik Unnoyan o Manab Unnoyan in Bengali, New Central Book Agency, Kolkata





### 3.9 SHGEO/402/C-9T: Geography of Economic Activities

#### Geography of Economic Activities

6 Credits

<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>
<b>Question Pattern:</b>	<b>Section-A Definition Oriented (5x2=10)</b>
	<b>Section-B Short Answer Type (5x4=20)</b>
	<b>Section-C Long Answer Type (1x10=10)</b>

#### Unit-1: Economic Activity: Agriculture

- 1.1 Agricultural System: Plantation Agriculture & Mixed Farming.
- 1.2 Crop Combination and Crop Diversification.
- 1.3 Classification of World Agricultural Systems after Whittlessey
- 1.4 Models of Agricultural Land use: Von Thunen Model, Haggerstrand's Model on Diffusion of Innovations

#### Unit-2: Economic Activity: Industry

- 2.1 Location Factors; Role of transport in industrial location
- 2.2 Models of Industrial Location: Weber & Losch
- 2.3 Industrial Regions: Mumbai-Pune; Asansol-Durgapur, Haldia
- 2.4 Impact of Industrial Activities on Environment

#### Unit-3: Economic Activity: Trade, Transport and Tourism

- 3.1 Role of WTO in International Trade
- 3.2 Transport Network: Accessibility and Connectivity
- 3.3 Tourism Industry and its Components
- 3.4 Environmental issues related to tourism industry

#### Reference Books

- ▶ Alexander J. W., 1963: Economic Geography, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
- ▶ Coe N. M., Kelly P. F. and Yeung H. W., 2007: Economic Geography: A Contemporary Introduction, Wiley-Blackwell.
- ▶ Hodder B. W. and Lee Roger, 1974: Economic Geography, Taylor and Francis.
- ▶ Combes P., Mayer T. and Thisse J. F., 2008: Economic Geography: The Integration of Regions and Nations, Princeton University Press.
- ▶ Wheeler J. O., 1998: Economic Geography, Wiley..
- ▶ Durand L., 1961: Economic Geography, Crowell.



- ▶ Bagchi-Sen S. and Smith H. L., 2006: Economic Geography: Past, Present and Future, Taylor and Francis.  
Wellington D. E., 2008: Economic Geography, Husband Press.
- ▶ Clark, Gordon L.; Feldman, M.P. and Gertler, M.S., eds. 2000: The Oxford
- ▶ Baud-Bovy, M. and Lawson, F. (1977), "Tourism and Recreation Development", The Architectural Press Ltd, CBI Publishing Company, Boston
- ▶ Boniface, B.G. and Cooper, C.P. (1987), "The Geography of Travel & Tourism", Heinemann Professional Publishing, Oxford.
- ▶ Burton, R. (1991), "Travel Geography", Pitman Publishing, London.
- ▶ Butler, R.W. (2010), ed, "The Tourism Area Life Cycle: Applications and Modifications", Vol-1, Viva Books Private Limited, New Delhi.
- ▶ Butler, R.W. (2010), ed, "The Tourism Area Life Cycle: Conceptual and Theoretical Issues", Vol-2, Viva Books Private Limited, New Delhi.
- ▶ Cooper, C., Fletcher, J., Gilbert, D. and Wanhill, S. (1993), "Tourism : Principles and Practice", Pitman, London.
- ▶ Hall, M. and Stephen, P. (2006) Geography of Tourism and Recreation – Environment, Place and Space, Routledge, London.
- ▶ Mathison, A. and Wall, G. (1982), "Tourism: Economic, Physical and Social Impacts", Longman, Harlow.
- ▶ Mill, R. C. and Morrison, A. M. (1985), "The Tourism System: An Introductory Text", Prentice Hall, New Jersey.
- ▶ Pearce, D. (1989), "Tourism and Regional Development", Longman, London.
- ▶ Pearce, D. (1995), Tourism Today: A Geographical Analysis, Longman, London
- ▶ Siddhartha, K. (2006) Economic Geography: Theories, Processes and Patterns, Kisalaya Publications, New Delhi
- ▶ Chattopadhyay, A. (2006), Arthonaitik Bhugol o Sompad Sastrer Porichay, 7<sup>th</sup> Edition in Bengali, T.D. Publications, Kolkata
- ▶ Saha, S.; Roy, T. (2021), Adhunik Arthonaitik Bhugol in Bengali, Kalyani Publishers, Kolkata



### 3.10 SHGEO/403/C-10P: Analytical Techniques in Environmental Geography

#### Environmental Geography

6 Credits

<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Question-1</b>	<b>(1x10=10)</b>
	<b>Question-2</b>	<b>(1x10=10)</b>
	<b>Question-3</b>	<b>(1x10=10)</b>
	<b>Lab Note Book &amp; Viva-Voce</b>	<b>(5+5=10)</b>

#### Instruction for Laboratory Note Book

- Practical works are to be completed in the classroom.
- Works are to be done in pen/pencil and neatly hand written and signed by class teachers.
- Laboratory Note Books have to be submitted in the examination.

#### **Unit-1: Environmental Impact Assessment**

- 1.1 Basic concepts, EIS
- 1.2 EIA Methods: Adhoc, Matrix- simple and weighted
- 1.3 EIA Methods: Checklist and Leopold Matrix
- 1.4 Preparation of Questionnaire for Perception Survey on environmental problems

#### **Unit-2: Measurement of Environmental Parameters**

- 2.1 Quality Assessment of Soil: pH and Organic Carbon
- 2.2 Quality Assessment of Water: pH by pH Meter, Turbidity by Turbidity Meter
- 2.3 Quality Assessment of Air: calculation of API/AQI based on CPCB/WBPCB data; Measurement of Atmospheric Pressure by Fortin's Barometer
- 2.4 Identification and listing of different types of water and soil pollutants in the locality

#### **Unit-3: Environmental Project Report**

Each student will prepare an individual report based on a specific environmental issue in the neighbourhood (rural/urban) and may collect the following environmental data:

1. Quality of soil-pH and Organic Carbon
2. Quality of water- pH and Turbidity, presence of any contaminant
3. Collection of PM<sub>2.5</sub> data by Digital Pollution Meter (optional)
4. Solid waste disposal and management
5. Vehicular pollution, if any
6. Industrial/agricultural pollution, if any
7. Any other

The report should be hand written in A4 size paper and must not exceed 2000 words and must be placed before the external examiner in the examination along with the other lab copy.



## Reference Books

- ▶ Chandna R. C., 2002: Environmental Geography, Kalyani, Ludhiana.
- ▶ Cunningham W. P. and Cunningham M. A., 2004: Principles of Environmental Science: Inquiry and Applications, Tata MacGraw Hill, New Delhi.
- ▶ Goudie A., 2001: The Nature of the Environment, Blackwell, Oxford.
- ▶ Singh, R.B. (Eds.) (2009): Biogeography and Biodiversity. Rawat Publication, Jaipur
- ▶ Miller G. T., 2004: Environmental Science: Working with the Earth, ThomsonBrooksCole, Singapore.
- ▶ MoEF, 2006: National Environmental Policy-2006, Ministry of Environment and Forests, Government of India.
- ▶ Singh, R.B. and Hietala, R. (Eds.) (2014) Livelihood security in Northwestern Himalaya: Case studies from changing socio-economic environments in Himachal Pradesh, India. Advances in Geographical and Environmental Studies, Springer
- ▶ Odum, E. P. et al, 2005: Fundamentals of Ecology, Ceneage Learning India.
- ▶ Singh S., 1997: Environmental Geography, Prayag Pustak Bhawan. Allahabad.
- ▶ UNEP, 2007: Global Environment Outlook: GEO4: Environment for Development, United Nations Environment Programme.
- ▶ 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
- ▶ Das Chatterjee N. 2016: Man-Elephant Conflict: A Case Study from Forests in West Bengal, India, Springer
- ▶ Morgan R.K. 2002: Environmental Impact Assessment: A Methodological Perspective, Kluwer Academic Publishers, London
- ▶ Eccleston C.H. 2011: Environmental Impact Assessment: A Guide to Best Professional Practices, CRC Press, New York
- ▶ Gilpin.A ( 1994) Environmental Impact Assessment: Cutting Edge for the 21st Century (Eia : Cutting Edge for the Twenty-First Century, Cambridge University Press,
- ▶ Pan, S. (2018), Environmental Hazards, Kabitika Publications, Midnapore
- ▶ CPCB Reports, Ministry of Environment, Forest and Climate Change, Govt. Of India, <http://www.cpcb.nic.in/Publications.php>



### 3.11 SHGEO/501/C-11T: Evolution of Geographical Thought

#### Evolution of Geographical Thought

6 Credits

<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Section-A Definition Oriented</b>	<b>(5x2=10)</b>
	<b>Section-B Short Answer Type</b>	<b>(5x4=20)</b>
	<b>Section-C Long Answer Type</b>	<b>(1x10=10)</b>

#### Unit-1: Development of Geography

- 1.1 Definition, Scope and Content of Geography
- 1.2 Development of Geography in the Ancient and Mediaeval Periods: Contributions of Greek, Arabian and Indian geographers
- 1.3 Development of Modern Scientific Geography in the 19<sup>th</sup> Century with particular reference to the Contributions of Humboldt and Ritter
- 1.4 Development of Geography in the 20<sup>th</sup> Century: Quantitative Revolution and its impact

#### Unit-2: Development of Schools of Thought in Modern Geography

- 2.1 German School and French School
- 2.2 British School and American School
- 2.3 Indian School
- 2.4 Paradigm Shift in Geography

#### Unit-3: Concepts and Trends in Geography

- 3.1 Concepts of Determinism, Possibilism and Neo-Determinism
- 3.2 Concepts of Empiricism and Positivism
- 3.3 Approaches to Geographic Studies: Systematic vs. Regional approach
- 3.4 Recent trends in Geography: Post Modernism, Feminism

#### Reference Books

- ▶ Arentsen M., Stam R. and Thuijjs R., 2000: Post-modern Approaches to Space, ebook.
- ▶ Bhat, L.S. (2009): Geography in India (Selected Themes). Pearson
- ▶ Bonnett A., 2008: What is Geography? Sage.
- ▶ Dikshit R. D., 1997: Geographical Thought: A Contextual History of Ideas, Prentice– Hall India.
- ▶ Hartshorn R., 1959: Perspectives of Nature of Geography, Rand MacNally and Co.
- ▶ Holt-Jensen A., 2011: Geography: History and Its Concepts: A Students Guide, SAGE.
- ▶ Johnston R. J., (Ed.): Dictionary of Human Geography, Routledge.



- ▶ Johnston R. J., 1997: Geography and Geographers, Anglo-American Human Geography since 1945, Arnold, London.
- ▶ Kapur A., 2001: Indian Geography: Voice of Concern, Concept Publications.
- ▶ Martin Geoffrey J., 2005: All Possible Worlds: A History of Geographical Ideas, Oxford.
- ▶ Soja, Edward 1989. Post-Modern Geographies, Verso, London. Reprinted 1997: Rawat Publ., Jaipur and New Delhi.
- ▶ Adhikari, S. (2015), Fundamentals of Geographical Thought, Orient Blackswan, Kolkata
- ▶ Maity. R.; Moitramaity, M. (2013), Bhugol-Chinta o Darshan in Bengali, Naboday Publications, Kolkata
- ▶ Mukhopadhyay, J. (2009), Bhugol Darshan in Bengali, Mitram Publishers, Kolkata
- ▶ Sen, J. (2014), Bhugol Darshan in Bengali, Kalyani Publishers, Kolkata
- ▶ Mitra, K.; Sen, J.; Sengupta, P. (2008), Bhugol Darshan o Rajnaitik Chintadhara in Bengali, Kalyani Publishers, Kolkata



### 3.12 SHGEO/502/C-12P: Remote Sensing Techniques

Remote Sensing Techniques		6 Credits
Total Marks:	50 (IA-10 Marks + ESE-40 Marks)	
Question Pattern:	Question-1	(1x10=10)
	Question-2	(1x10=10)
	Question-3	(1x10=10)
	Lab Note Book & Viva-Voce	(5+5=10)

#### Instruction for Laboratory Note Book

- Practical works are to be completed in the classroom.
- Works are to be done in QGIS software and theoretical portions are to be neatly hand written/computer typed and signed by class teachers.
- Laboratory Note Books have to be submitted in the examination.

#### Unit-1: Basic Concepts

- 1.1 Energy Sources, Interactions with atmosphere, Interactions with Earth's surface
- 1.2 Sensing Systems: Types of RS satellites and sensors
- 1.3 Sensor Resolutions: Spatial, Spectral, Radiometric and Temporal
- 1.4 Principles of preparing Standard False Colour Composites

#### Unit-2: Data Acquisition and Classification

- 2.1 Free sources of Remote Sensing data: NRSC Bhuban and USGS
- 2.2 Principles of image interpretation and feature extraction
- 2.3 Image classification: Supervised and Unsupervised
- 2.4 Preparation of NDVI

#### Unit-3: Terrain Modelling

- 3.1 Introduction to DEM and its sources: CARTODEM, SRTM and ASTER DEM
- 3.2 DEM visualization: Hillshade
- 3.3 Preparation of Slope map
- 3.4 Contour extraction from DEM

#### Reference Books

- ▶ Campbell J. B., 2007: Introduction to Remote Sensing, Guildford Press.
- ▶ Jensen J. R., 2004: Introductory Digital Image Processing: A Remote Sensing Perspective, Prentice Hall.
- ▶ Joseph, G. 2005: Fundamentals of Remote Sensing, United Press India.
- ▶ Lillesand T. M., Kiefer R. W. and Chipman J. W., 2004: Remote Sensing and Image Interpretation, Wiley (Wiley Student Edition).
- ▶ Nag P. and Kudra, M., 1998: Digital Remote Sensing, Concept, New Delhi.
- ▶ Rees W. G., 2001: Physical Principles of Remote Sensing, Cambridge University Press.



- ▶ Singh R. B. and Murai S., 1998: Space-informatics for Sustainable Development, Oxford and IBH Pub.
- ▶ Wolf P. R. and Dewitt B. A., 2000: Elements of Photogrammetry: With Applications in GIS, McGraw- Hill.
- ▶ Sarkar, A. (2015) Practical Geography: A Systematic Approach. Orient Black Swan Private Ltd., New Delhi





### 3.13 SHGEO/601/C-13T: Disaster Management

<b>Disaster Management</b>		<b>6 Credits</b>
<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Section-A Definition Oriented</b>	<b>(5x2=10)</b>
	<b>Section-B Short Answer Type</b>	<b>(5x4=20)</b>
	<b>Section-C Long Answer Type</b>	<b>(1x10=10)</b>
<b>Unit 1: Concepts and Approaches</b>		
1.1 Meaning and concept of hazard and disaster		
1.2 Classification of hazards and disasters		
1.3 Approaches to hazard study: Risk perception and vulnerability assessment		
1.4 Hazard paradigms		
<b>Unit 2: Disaster Case Studies</b>		
2.1 Earthquake: Factors, consequences, vulnerability and management		
2.2 Landslide: Factors, consequences, vulnerability and management		
2.3 Cyclone: Factors, consequences, vulnerability and management		
2.4 Flood: Factors, consequences, vulnerability and management		
<b>Unit 3: Disaster Management in India</b>		
3.1 Disaster in Himalayan belt		
3.2 Disaster in lower Ganges plain		
3.3 Disaster in coastal region		
3.4 Hazard Mapping in India		
<b>Reference Books</b>		
▶ Government of India. (1997): Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.		
▶ Kapur, A. (2010): Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.		
▶ Modh, S. (2010): Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi		
▶ Singh, R.B. (2005): Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi. Chapter 1, 2 and 3		
▶ Singh, R. B. (ed.), (2006): Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.		
▶ Sinha, A. (2001): Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.		
▶ Smith, K. (2013), Environmental Hazards: Assessing Risks and Reducing Disaster, Fifth Edition, Routledge, London		
▶ Mandal, S. 2008), Prakritik Durjog: Sristi, Probhab, Pratirodh o Manchitrikaran in Bengali, Books and Allied, Kolkata		
▶ Chakraborty, N. (2021), Durjog o Biporjay Byabosthapona in Bengali, Naboday Publications, Kolkata		



### 3.14 SHGEO/602/C-14P: Research Methodology and Field Work

Research Methodology and Field Work		6 Credits
Total Marks:	50 (IA-10 Marks + ESE-40 Marks)	
Question Pattern:	Question-1 on Unit-1	(2x5=10)
	Field Report, Presentation & Viva-Voce	(15+10+5=30)

#### **Instruction for Field Report**

- Reports have to be computer typed with all relevant maps, diagrams and photographs.
- It must be submitted at the time of examination.
- All examinees have to present the report in power point slides before the external examiner.

#### **Unit 1: Research Methodology**

- 1.1 Research in Geography: Meaning, types and significance
- 1.2 Literature Review and formulation of research design
- 1.3 Defining research problem, objectives and hypothesis. Research materials and methods
- 1.4 Techniques of writing scientific reports: Preparing notes, references, bibliography, abstract and keywords

#### **Unit 2: Field Work**

- 2.1 Fieldwork in Geographical studies –Selection of study area and objectives. Pre- field preparations
- 2.2 Field Enquiry Techniques and Tools: Observation (participant, non-participant), questionnaires (open, closed, structured, non-structured). Interview with special reference to focused group discussions.
- 2.3 Field Techniques and Tools: Landscape survey using transects and quadrants, constructing a sketch, photo and video recording.
- 2.4 Preparation of inventory from field data. Post-field tasks.



## Instructions for Field Report Preparation

1. Each student will prepare an individual report based on primary data collected from field survey and secondary data collected from different sources for either a rural area (mouza), or an urban area (municipal ward), or a watershed based on cadastral, municipal or any other base maps to **study related specific problems**.
2. The duration of the field work shall not exceed 10 days.

### **Report writing with the following Tentative Chapter Schemes:**

#### **Preface & Acknowledgement**

#### **Executive Summary**

**Introduction:** Objectives, Extent and Space Relations, Data sources and Methodology

**Physical Environment:** Lithology, Relief/Topography, Drainage, Slope, Climate, Soil, Vegetation etc.

**Socio Economic Environment:** Population Characteristics, Occupational Structure, Ethnic and Religious Composition, Income and Expenditure, any other aspects which may be deemed fit.

#### **Results and Discussion/Presentation**

#### **Problems and Prospects**

#### **Conclusion**

#### **References (APA format)**

**Appendix:** Survey Questionnaire(s), Additional Tables if any

3. **Design & Word Limit:** Computer Typed, Line Spacing 1.5 Font-Arial/ Times New Roman/ Calibri, Size-12, Word Limit: 5000 (Excluding Tables and Appendix).

4. **Submission:** A copy of the bound report, duly signed by the concerned teacher/supervisor, must be submitted at the time of examination.

5. **Presentation**

Individual student has to submit one Power Point Presentation on the Report and has to present in front of External Examiner with the following slides:

- a) Title
- b) Aims and Objectives
- c) Data Sources and Methodology
- d) Important Diagrams and Maps included in the report
- e) Major Findings
- f) Suggestions

Time allotted for Presentation will be not more than 10 minutes followed by interactive session of not more than 5 minutes.

A CD/or any other soft form of the ppt file has to be submitted mentioning the UID Number of each student. The same has to be submitted by the Centre in Charge to the Chairperson of the said paper.



## Reference Books

- ▶ Creswell J., 1994: Research Design: Qualitative and Quantitative Approaches Sage Publications.
- ▶ Dikshit, R. D. 2003: The Art and Science of Geography: Integrated Readings. Prentice-Hall of India, New Delhi.
- ▶ Evans M., 1988: "Participant Observation: The Researcher as Research Tool" in Qualitative Methods in Human Geography, eds. J. Eyles and D. Smith, Polity.
- ▶ Mukherjee, Neela 2002. Participatory Learning and Action: with 100 Field Methods. Concept Publs. Co., New Delhi
- ▶ Robinson A., 1998: "Thinking Straight and Writing That Way", in Writing Empirical Research Reports: A Basic Guide for Students of the Social and Behavioural Sciences, eds. by F. Pryczak and R. Bruce Pryczak, Publishing: Los Angeles.
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- ▶ Sarkar, A. (2008): Practical Geography: A Systematic Approach, Orient Black Swan, Kolkata
- ▶ Narasinha Murthy, R.L. (2014) Research Methodology in Geography, Concept, New Delhi
- ▶ Saha, P.K. and Basu, P. (2009): Advanced Practical Geography, Books and Allied (P) Ltd., Kolkata
- ▶ Yeates M., (1974): An Introduction to Quantitative Analysis in Human Geography.
- ▶ Adhikari, S. (2012), Honours Byaboharik Bhugol, Vol-IV in Bengali, Dove Publishing House, Midnapore
- ▶ Roy, T.; Mandal, B.; Bandyopadhyay, C.; Maity, M.; Bishal, P. (2021), Bhougolik Gobeshana Paddhoti o Kshetra Somikha in Bengali, Kalyani Publishers, Kolkata



#### 4. Discipline Specific Electives Subjects Syllabus

##### 4.1 SHGEO/503/DSE-1T: Hydrology and Oceanography

<b>Hydrology and Oceanography</b>	<b>6 Credits</b>
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<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Section-A Definition Oriented</b>	<b>(5x2=10)</b>
	<b>Section-B Short Answer Type</b>	<b>(5x4=20)</b>
	<b>Section-C Long Answer Type</b>	<b>(1x10=10)</b>

##### Unit 1: Hydrology

- 1.1 Systems Approach in hydrology. Global hydrological cycle: Its physical and biological role
- 1.2 Run off: controlling factors. Infiltration and evapotranspiration. Run off cycle
- 1.3 Drainage basin as a hydrological unit. Principles of water harvesting and watershed management
- 1.4 Groundwater: Occurrence and storage. Factors controlling recharge, discharge and movement.

##### Unit 2: Oceanography

- 2.1 Major relief features of the ocean floor: characteristics and origin according to plate tectonics.
- 2.2 Physical and chemical properties of ocean water
- 2.3 Water mass, T-S diagram
- 2.4 Ocean temperature and salinity: Distribution and determinants.

##### Unit 3: Ocean Resources and Sea Level Change

- 3.1 Coral reefs: Formation, classification and threats
- 3.2 Marine resources: Classification and sustainable utilization
- 3.3 Concept of wave and tide
- 3.4 Sea level change: Types and causes

##### Reference Books

- ▶ Andrew. D. Ward and Stanley, Trimble (2004): Environmental Hydrology, 2nd edition, Lewis Publishers, CRC Press.
- ▶ Karanth, K.R., 1988: Ground Water: Exploration, Assessment and Development, Tata-McGraw Hill, New Delhi.



- ▶ Ramaswamy, C. (1985): Review of floods in India during the past 75 years: A Perspective. Indian National Science Academy, New Delhi.
- ▶ Rao, K.L., 1982: India's Water Wealth 2nd edition, Orient Longman, Delhi,
- ▶ Singh, Vijay P. (1995): Environmental Hydrology. Kluwer Academic Publications, the Netherlands.
- ▶ Anikouchine W. A. and Sternberg R. W., 1973: The World Oceans: An Introduction to Oceanography, Prentice-Hall.  
Garrison T., 1998: Oceanography, Wordsworth Company, Belmont.
- ▶ Kershaw S., 2000: Oceanography: An Earth Science Perspective, Stanley Thorne, And UK.
- ▶ Pinet P. R., 2008: Invitation to Oceanography (Fifth Edition), Jones and Barlett Publishers, USA, UK and Canada.
- ▶ Sverdrup K. A. and Armstrong, E. V., 2008: An Introduction to the World Ocean, McGraw Hill, Boston.
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- ▶ Gayen, S. (2010), Bhu-Jalobidya in Bengali, Deb Prakashani, Kolkata
- ▶ Sil, A. (2016), Jalobidya, 4<sup>th</sup> Edition in Bengali, The Himalayan Books, Kolkata
- ▶ Sengupta, D.; Goswami, P.; Rudra, K. (2014), Jal in Bengali, Avenel Press, Kolkata
- ▶ Sil, A. (2014), Samudrabidya in Bengali, 4<sup>th</sup> Edition, The Himalayan Books, Kolkata
- ▶ Choudhury, S.K. (2017), Samudra Bhugol in Bengali, Central Book Agency, Kolkata



## 4.2 SHGEO/504/DSE-2T: Cultural and Settlement Geography

<b>Cultural and Settlement Geography</b>	<b>6 Credits</b>
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<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>
<b>Question Pattern:</b>	<b>Section-A Definition Oriented (5x2=10)</b>
	<b>Section-B Short Answer Type (5x4=20)</b>
	<b>Section-C Long Answer Type (1x10=10)</b>

### Unit 1: Cultural Geography

- 1.1 Definition, scope and content of Cultural Geography, development of cultural geography in relation to allied disciplines
- 1.2 Cultural Hearth and Realm; Cultural Diffusion, Cultural Segregation and Cultural diversity  
Diffusion of major world religions and languages
- 1.3 Culture, Technology and Development.
- 1.4 Races and racial groups of the world

### Unit 2: Rural Settlement

- 2.1 Rural Settlement: Definition, nature and characteristics of rural settlements
- 2.2 Factors influencing site and situation of rural settlements
- 2.3 Rural house types with reference to India, Social segregation in rural areas;
- 2.4 Census categories of rural settlements.

### Unit-3: Urban Settlement

- 3.1 Urban Settlements: Census definition (Temporal) and categories in India
- 3.2 Urban morphology: Classical models-Burgess, Homer Hoyt, Harris and Ullman.
- 3.3 City-region and Conurbation; Concept of Smart City
- 3.4 Functional classification of cities: Harris, Nelson and Mackenzie

### Reference Books

- ▶ Banerjee Guha, S. ed (2004) Space, Society & Geography, Rawat Publication, Delhi
- ▶ Bardhan, P., 2003, Poverty, Age Structure & Political Economy in India, Oxford University Press
- ▶ Biswas, A.K., Jortajada, C., 2006, Appraising Sustainable Development, Oxford University
- ▶ Dhanagare, D.N., 2004, Themes and Perspectives in Indian Sociology, Rawat Publication, Delhi



- Fellmann, J.D., Getis, A., Getis, J., 2000, Human Geography- Landscape of Human Activity, McGraw Hill
- ▶ Fern, R.L., 2002, Nature, God and Humanity, Cambridge university Press
  - ▶ Gadgil, M., Guha, R., 2000, The Use and Abuse of Nature, Oxford University Press
  - ▶ Gregory, D., Urry, J., 1985, Social Relation and Spatial Structure, MacMillan
  - ▶ Herbert, D.T., Johnston, R.J., 1982, Geography and Urban Environment. John Wiley & Sons
  - ▶ Hussain, M., 2007, Models in Geography, Rawat Publication
  - ▶ Jordan, T., Rowntree, L., 1990, Human Mosaic, Harper Collins Publishers
  - ▶ Knox, P., Pinch, S., 2000, Urban Social Geography, Pearson Education
  - ▶ Mitchell, D. 2000, Cultural Geography-A Critical Introduction, Black Well.
  - ▶ Dhara, S. (2013), Janasonkhya o Basoti Bhugol in Bengali, Naboday Publications, Kolkata
  - ▶ Mandal, M. (2016), Samajik Bhugol in Bengali, Naboday Publications, Kolkata



**4.3 SHGEO/504/DSE-2T: Urban Geography**

<b>Urban Geography</b>		<b>6 Credits</b>
<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Section-A Definition Oriented</b>	<b>(5x2=10)</b>
	<b>Section-B Short Answer Type</b>	<b>(5x4=20)</b>
	<b>Section-C Long Answer Type</b>	<b>(1x10=10)</b>
<b>Unit -1: Basic Concepts</b>		
1.1 Urban Geography: nature and scope, different approaches and recent trends in urban geography		
1.2 Origin of urban places in Ancient, Medieval, Modern and Post-Modern periods- factors, stages, and characteristics.		
1.3 Theories of Urban Evolution and Growth: Hydraulic Theory, Economic Theory		
1.4 Urban Hierarchies : Central Place Theory;		
<b>Unit -2: Urban Processes</b>		
2.1 Ecological processes of urban growth; Urban fringe; City- Region		
2.2 Theories of city structure-concentric zone theory, sector theory, multiple nucleitheory		
2.3 Aspects of urban places: Location, site and situation, Size and Spacing of Cities:The Rank Size Rule, The Law of the Primate City		
2.4 Patterns of urbanization in developed and developing countries		
<b>Unit 3: Urbanization in India</b>		
3.1 Urban Issues: problems of housing, slums, civic amenities (water and transport)		
3.2 Patterns and trends of urbanization in India		
3.3 Policies on urbanization. Urban change/landscape in post-liberalized period in India		
3.4 Case studies of Delhi, Kolkata, and Chandigarh with reference to land use		
<b>Reference Books</b>		
▶	Fyfe N. R. and Kenny J. T., 2005: The Urban Geography Reader, Routledge.	
▶	Graham S. and Marvin S., 2001: Splintering Urbanism: Networked Infrastructures, Technological Mobility and the Urban Condition, Routledge.	
▶	Hall T., 2006: Urban Geography, Taylor and Francis.	
▶	Kaplan D. H., Wheeler J. O. and Holloway S. R., 2008: Urban Geography, John Wiley.	
▶	Knox P. L. and McCarthy L., 2005: Urbanization: An Introduction to Urban	



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Geography, Pearson Prentice Hall New York.

- ▶ Knox P. L. and Pinch S., 2006: Urban Social Geography: An Introduction, Prentice-Hall.
  - ▶ Pacione M., 2009: Urban Geography: A Global Perspective, Taylor and Francis.
  - ▶ Sassen S., 2001: The Global City: New York, London and Tokyo, Princeton University Press.
  - ▶ Ramachandran R (1989): Urbanisation and Urban Systems of India, Oxford University Press, New Delhi
  - ▶ Ramachandran, R., 1992: The Study of Urbanisation, Oxford University Press, Delhi
  - ▶ 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.
  - ▶ Singh, R.B. (Ed.) (2015) Urban development, challenges, risks and resilience in Asian megacities. Advances in Geographical and Environmental Studies, Springer
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- ▶ Dhara, S. (2013), Janasonkhya o Basoti Bhugol in Bengali, Naboday Publications, Kolkata
  - ▶ Mandal, M. (2016), Samajik Bhugol in Bengali, Naboday Publications, Kolkata



#### 4.4SHGEO/603/DSE-3T: Soil and Biogeography

Soil and Biogeography		6 Credits
<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Section-A Definition Oriented</b>	<b>(5x2=10)</b>
	<b>Section-B Short Answer Type</b>	<b>(5x4=20)</b>
	<b>Section-C Long Answer Type</b>	<b>(1x10=10)</b>
<b>Unit 1: Soil Geography</b>		
1.1 Factors of Soil formation.		
1.2 Soil profile. Origin and profile characteristics of Lateritic, Podzol and Chernozem soils		
1.3 Definition and significance of Soil properties: Physical - Texture, Structure and Moisture; Chemical - pH, Organic matter and NPK		
1.4 Principles of Soil classification: Genetic and USDA (Orders and Sub-orders). Concept of land capability and its classification.		
<b>Unit 2: Bio-Geography</b>		
2.1 Concepts of biosphere, ecosystem, biome, ecotone, community and ecology		
2.2 Concepts of trophic structure, food chain and food web. Energy flow in ecosystems		
2.3 Geographical extent and characteristic features of Tropical rain forest, Taiga and Grassland biomes		
2.4 Bio-geochemical cycles with special reference to carbon dioxide and nitrogen		
<b>Unit 3: Human Behavior and its impact on Soil and Biosphere</b>		
3.1 Soil Erosion and Degradation: Factors, processes and mitigation measures		
3.2 Deforestation: Causes, consequences and management		
3.3 Bio-diversity: Definition, types, threats and conservation measures		
3.4 Response of society to the management		
<b>Reference Books</b>		
▶	Biswas, T.D. and Mukherjee, S.K. 1997: Textbook of Soil Science, Tata McGraw Hill,	
▶	Brady, N.C. and Weil, R.R. 1996. The Nature and Properties of Soil, 11th edition, Longman, London:	
▶	Foth, H.D. 1990. Fundamentals of Soil science, 8th edition, John Wiley and Sons, New York.	



- ▶ Morgan, R.P.C. 1995. Soil Erosion and Conservation, 2nd edition, Longman, London
- ▶ Schwab, G.O., Fangmer, D.D. and Elliot, W.J. 1996. Soil and Water Management Systems, 4th edition, John Wiley and sons Inc., New York
- ▶ Young, A. 2000. Land Resource: Now and Future, Cambridge University Press, Cambridge: 332p.
- ▶ De, N. K. and Jana, N. C. (2016): The Land: Multifaceted Appraisal and Management, Sribhumi Publishing House, Kolkata, Reprint
- ▶ Chapman J.L. and Rens, M.J. 1993. Ecology: Principle and Applications, Cambridge University Press, Cambridge:
- ▶ Chairas, D.D. Reganold, J.P. and Owen, O.S. 2002. National Resource Conservation and management for a Sustainable Future, 8th edition, Prentice Hall, Englewood Cliffs
- ▶ Dash, M.C., 2001. Fundamental of Ecology, 2nd edition, Tata McGrawHill, New Delhi
- ▶ Haggett, R. 1998. Fundamentals of Biogeography, Routledge, London:
- ▶ Kormondy, E.J. 1996. Concept of Ecology, 4th edition, Prentice- Hall, India, New Delhi
- ▶ Myers, A. A. and Giller, P.S. (editors) 1988. Analytical Biogeography: An Integrated Approach to the Study of Animal and Plant Distribution. Chapman and Hall, London
- ▶ Choudhury, S.K. (2017), Bhugolik Bastubidya in Bengali, Central Book Agency, Kolkata
- ▶ Das, C.; Pramanik, T.K. (2020), Poribesh Bhugol in Bengali, Innova Publications, Kolkata
- ▶ Bera, B.; Bhattacharjee, S.; Sengupta, N. (2016), Jib Bhugol o Poribesh in Bengali, Naboday Publications, Kolkata
- ▶ Sil, A. (2015), Jib Bhugol in Bengali, The Himalayan Books, Kolkata
- ▶ Sil, A. (2015), Mritwika Bhugol in Bengali, The Himalayan Books, Kolkata
- ▶ Das, P.K. (2013), Adhunik Mritwika Bhugol in Bengali, Naboday Publications, Kolkata
- ▶ Basu, P. (2012), Mritwika Bigyan: Tathya o Abhigyota, Books and Allied, Kolkata



## 45 SHGEO/604/DSE-4T: Population Geography

Population Geography		6 Credits
<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Section-A Definition Oriented</b>	<b>(5x2=10)</b>
	<b>Section-B Short Answer Type</b>	<b>(5x4=20)</b>
	<b>Section-C Long Answer Type</b>	<b>(1x10=10)</b>
<b>Unit 1: Basic Concepts</b>		
1.1 Development of Population Geography as a field of specialization. Relation between Population Geography and Demography.		
1.2 Population Distribution and Density; Factors and Measures of Population Density		
1.3 Population Growth: Determinants and Measures of Fertility and Mortality		
1.4 World patterns of population distribution and growth. Concept of Optimum Population, population distribution in India.		
<b>Unit 2: Population Composition</b>		
2.1 Population Composition and Characteristics ; Age-sex composition of population in Developed and Developing countries		
2.2 Concept of Cohort and Life Table and their significance		
2.3 Population composition of India ( Age, Sex, Rural, Urban and occupational composition)		
2.4 Migration: Causes and types, consequences; Theories of Migration: Lee and Ravenstein		
<b>Unit 3: Population Policies</b>		
3.1 Population and Development: Population-Resource regions. Concept of Human Development Index (HDI) and its components.		
3.2 Population policies in developed and less developed countries		
3.3 India's population policies, population and environment, implication for the future.		
3.4 Contemporary Issues – Ageing of Population; Declining Sex Ratio; Population and Environment dichotomy, HIV/AIDS.		
<b>Reference Books</b>		
▶	Barrett H. R., 1995: Population Geography, Oliver and Boyd.	
▶	Bhende A. and Kanitkar T., 2000: Principles of Population Studies, Himalaya Publishing House.	
▶	Chandna R. C. and Sidhu M. S., 1980: An Introduction to Population Geography, Kalyani Publishers.	
▶		



- ▶ Clarke J. I., 1965: Population Geography, Pergamon Press, Oxford.
  - ▶ Jones, H. R., 2000: Population Geography, 3rd ed. Paul Chapman, London.
  - ▶ Lutz W., Warren C. S. and Scherbov S., 2004: The End of the World Population Growth in the 21st Century, Earthscan
  - ▶ Newbold K. B., 2009: Population Geography: Tools and Issues, Rowman and Littlefield Publishers.
  - ▶ Pacione M., 1986: Population Geography: Progress and Prospect, Taylor and Francis.
  - ▶ Wilson M. G. A., 1968: Population Geography, Nelson.
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- ▶ Premi, M.K. (2006), Population of India-In the New Millenium: Census, 2001, National Book Trust, New Delhi
  - ▶ Sen, J. (2016), Janasonkhya Bhugol in Bengali, 4<sup>th</sup> Edition, Books and Allied, Kolkata
  - ▶ Islam, M. (2019), Janasonkhya Bhugol Nirdeshika in Bengali, Deb Prakashani, Kolkata



#### 4.6 SHGEO/604/DSE-4T: Geography of Tourism

Geography of Tourism		6 Credits
<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Section-A Definition Oriented</b>	<b>(5x2=10)</b>
	<b>Section-B Short Answer Type</b>	<b>(5x4=20)</b>
	<b>Section-C Long Answer Type</b>	<b>(1x10=10)</b>
<b>Unit-1: Basic Concepts</b>		
1.1	Definition and economic importance of tourism; Tourism Types	
1.2	Components of Tourism; Push and Pull factors	
1.3	Leisure, recreation and tourism interrelations	
1.4	Factors affecting growth of tourism	
<b>Unit-2: Tourism Evolution and Impacts</b>		
2.1	Evolution of tourism: TALC model of R.W. Butler	
2.2	Socio-cultural impacts	
2.3	Economic impacts	
2.4	Environmental impacts	
<b>Unit-3: Tourism Planning and Management</b>		
3.1	National Tourism Policy, Concept of Passport and Visa	
3.2	Destination management practices	
3.3	Tourism marketing with special reference to West Bengal	
3.4	Appraisal of the role of tourism organisations: WTO, WTTC, ITDC, WBTDC	
<b>Reference Books</b>		
▶	Baud-Bovy, M. and Lawson, F. (1977), "Tourism and Recreation Development", The Architectural Press Ltd, CBI Publishing Company, Boston	
▶	Bhatia, A.K. (2002), "Tourism Development: Principles and Practices", Sterling Publishers Private Limited, New Delhi.	
▶	Boniface, B.G. and Cooper, C.P. (1987), "The Geography of Travel & Tourism", Heinemann Professional Publishing, Oxford.	
▶	Burton, R. (1991), "Travel Geography", Pitman Publishing, London.	
▶	Butler, R.W. (2010), ed, "The Tourism Area Life Cycle: Applications and Modifications", Vol-1, Viva Books Private Limited, New Delhi.	
▶	Butler, R.W. (2010), ed, "The Tourism Area Life Cycle: Conceptual and Theoretical Issues", Vol-2, Viva Books Private Limited, New Delhi.	
▶	Carter, E. and Lowman, G. (1994), eds, "Ecotourism: A Sustainable Option?", John Wiley and Sons, New York.	



- ▶ Cooper, C., Fletcher, J., Gilbert, D. and Wanhill, S. (1993), "Tourism : Principles and Practice", Pitman, London.
- ▶ Mathieson, A. and Wall, G. (1982), "Tourism: Economic, Physical and Social Impacts", Longman, Harlow.
- ▶ Mill, R. C. and Morrison, A. M. (1985), "The Tourism System: An Introductory Text", Prentice Hall, New Jersey.
- ▶ Pearce, D. (1989), "Tourism and Regional Development", Longman, London.
- ▶ Raina, A.K., Zhao, J. and Gupta, D. (2010), "Tourism Destination Management: Principles and Practices", Kanishka Publishers and Distributors, New Delhi.
- ▶ Rogers, H.A. and Slinn, J.A., (1993), "Tourism: Management of Facilities", Pitman Publishing, London.
- ▶ Ryan, C. (2006), "Recreational Tourism: Demand and Impacts", Viva Books Private Limited, New Delhi.
- ▶ Sharpley, R. and Telfer, D. J. (2006), eds. "Tourism and Development: Concepts and Issues", Viva Books Private Limited, New Delhi.
- ▶ Swarbrooke, J. (1999), "Sustainable Tourism Management", Rawat Publications, New Delhi.
- ▶ Timothy, D.J. (2006), "Shopping Tourism, Retailing and Leisure", Viva Books Private Limited, New Delhi.





## 5. Skill Enhancement Subjects Syllabus

### 5.1 SHGEO/305/SEC-1P: Computer Basics and Applications

#### Computer Basics and Applications 2 Credits

<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Question-1</b>	<b>(1x10=10)</b>
	<b>Question-2</b>	<b>(1x10=10)</b>
	<b>Question-3</b>	<b>(1x10=10)</b>
	<b>Lab Note Book &amp; Viva-Voce</b>	<b>(5+5=10)</b>

#### Instruction for Laboratory Note Book

- Practical works are to be completed in the classroom.
- Works to be done in computer and signed by class teachers.
- Laboratory Note Books have to be submitted in the examination.

#### Unit-1: Computer Basics

- 1.1 Components of Computer System: Hardware, Software
- 1.2 Concept of computing, Data and Information
- 1.3 Operating Systems, User Interface
- 1.4 File and Directory Management, Common utilities of computer in geography

#### Unit-2: Understanding Spreadsheets

- 2.1 Data Entry: Arrangement into ascending and descending order
- 2.2 Manipulation of cells, formulas and functions
- 2.3 Computation of Mean, Median, Mode, Standard Deviation using formula for ungrouped and grouped data
- 2.4 Graphical Representation: Line, Bar, Pie/Doughnut, Scatter Diagram, Fitting of Trend Lines

#### Unit-3: Internet Basics

- 3.1 Concept of Internet, World Wide Web, Search Engine, URLs
- 3.2 Internet Surfing: generation and extraction of information
- 3.3 Basics of Electronic Mails, Emails
- 3.4 Cloud Computing and Drive Sharing



## Reference Books

- ▶ Bartee, Thomas C. (1977): Digital Computer Fundamental; McGraw Hill.
- ▶ Chauhan, S.; Chauhan, A. and Gupta, K. (2006): Fundamental of Computer; Firewall Media.
- ▶ Flake, L.J.; McClintock, C.E. and Turner, S. (1989): Fundamental of Computer Education; Wordsworth Pub. Co.
- ▶ Leon, A. and Leon, M. (1999): Introduction to Computer, USB Publishers' Distributors Ltd.
- ▶ Malvino, A.P. and Leach, D.P. (1981): Digital Principles and Applications; Tata McGraw Hill.
- ▶ Mano, Moris M. and Kime, Charles R. (2004): Logic and Computer Design Fundamental; Prentice Hall.
- ▶ Rajaraman, V. (2003): Fundamentals of Computer, Prentice Hall Publisher
- ▶ Sarkar, A. and Gupta, S.K (2002): Elements of Computer Science, S Chand and Company, New Delhi
- ▶ Blissmer (1996): Working with MS Word; Houghton Mifflin Co.
- ▶ Johnson, Steve (2007): Microsoft Power Point 2007; Pearson Paravia Bruno.
- ▶ Leon, A. and Leon, M. (1999): Introduction to Computer, USB Publishers' Distributors Ltd.
- ▶ Leon, A. and Leon, M. (1999): A beginners Guide to Computers, Vikas
- ▶ Rajaraman, V. (2008): Computer Primer; Prentice Hall of India Pvt. Ltd.
  
- ▶ Sarkar, A. and Gupta, S.K (2002) Elements of Computer Science, S Chand and Company,  
New Delhi
- ▶ Shepard, Aaron (2007): Perfect Pages; Shepard Publications.
- ▶ Tyson, Herbert L. (2007): Microsoft Word 2007 Bible; John Wiley.
- ▶ Walkenbach, John (2007): Excel 2007 Bible; John Wiley

**5.2 SHGEO/405/SEC-1P: GIS and GNSS**

<b>GIS and GNSS</b>		<b>2 Credits</b>
<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Question-1</b>	<b>(1x10=10)</b>
	<b>Question-2</b>	<b>(1x10=10)</b>
	<b>Question-3</b>	<b>(1x10=10)</b>
	<b>Lab Note Book &amp; Viva-Voce</b>	<b>(5+5=10)</b>

**Instruction for Laboratory Note Book**

- Practical works are to be completed in the classroom.
- Works to be done in computer and signed by class teachers.
- Laboratory Note Books have to be submitted in the examination.

**Unit-1: Geographical Information System**

- 1.1 GIS: Basic Concepts
- 1.2 Components of GIS
- 1.3 Development of GIS Technology
- 1.4 GIS Data structure: Raster and Vector

**Unit-2: Introduction to GNSS**

- 2.1 Basic Concept: GNSS and GPS, Segments, PRN Code, Waypoints and Tracks
- 2.2 Distance Calculation, Open and Closed Traverse.
- 2.3 Plotting in Microsoft Excel
- 2.4 GNSS/GPS data downloading in software and mapping.

**Unit 3: Mapping in GIS**

- 3.1 Geo-referencing, Digitization
- 3.2 Attribute data creation and uses: Choropleth, Bar, Pie, Proportional circles, Dot Diagram
- 3.3 Map Composition
- 3.4 Layout

**References**

- Jatin Pandey and Darshana Pathak, 2013, Geographic Information System, TERI Publishing House.
- Chor Pang Lo, 2009, Concepts and Techniques of Geographic Information System, Prentice Hall.
- Michael N. Demers, 2012, Fundamentals of Geographic Information Systems, Willy.
- Chairsman, N. 1992. Exploring Geographical Information Systems, John
- Willey and Sons Inc., New York, 198p



## 6. Generic Elective Subjects Syllabus

### 6.1 SHGEO/304/GE-1: Physical Basis of Earth

Physical Basis of Earth		6 Credits
<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Section-A Definition Oriented</b>	<b>(5x2=10)</b>
	<b>Section-B Short Answer Type</b>	<b>(5x4=20)</b>
	<b>Section-C Long Answer Type</b>	<b>(1x10=10)</b>
<b>Unit 1: Earth: Origin and Evolution</b>		
1.1 Origin of Earth (Nebular Hypothesis of Laplace) 1.2 Geological Time Scale and Geological History of the Earth 1.3 Isostasy: Origin of the concept, Theories of Airy and Pratt, Isostatic Adjustments, 1.4 Internal Structure of the Earth: Seismological Evidences, Physical, chemical and seismic properties of Earth layers.		
<b>Unit 2: Tectonic Theories and Processes</b>		
2.1 Continental Drift Theory of Alfred Wegener 2.2 Palaeo-magnetism and Sea Floor Spreading 2.3 Plate Tectonic Theory; Plate Composition, Plate Movement, Plate Margins, Triple Junctions. 2.4 Tectonic Processes in relation to Plate Tectonics; Orogenesis, Earthquake, Vulcanicity		
<b>Unit 3: Process Geomorphology</b>		
3.1 Evolution of landforms on Uniclinal, Folded and Faulted Strata 3.2 Landscape Evolution Models: Davis, Penck and Hack 3.3 Climatic Geomorphology: Basic concepts, 3.4 Hillslopes: Genesis and Morphology		
<b>Reference Books</b>		
▶ Bloom A. L., 2001: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, New Delhi.		
▶ Bridges E. M., 1990: World Geomorphology, Cambridge University Press, Cambridge.		
▶ Christopherson, Robert W., (2011), Geosystems: An Introduction to Physical Geography, 8 Ed., Macmillan Publishing Company		
▶ Kale V. S. and Gupta A., 2001: Introduction to Geomorphology, Orient Longman, Hyderabad.		
▶ Knighton A. D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.		
▶ Selby, M.J., (2005), Earth's Changing Surface, Indian Edition, OUP		
▶ Skinner, Brian J. and Stephen C. Porter (2000), The Dynamic Earth: An Introduction to Physical Geology, 4th Edition, John Wiley and Sons		
▶ Thornburry W. D., 1969: Principles of Geomorphology, Wiley.		
▶ Khullar, D.R. (2012), Physical Geography, Kalyani Publishers, New Delhi		



- ▶ Mukhopadhyay, S.; Mukhopadhyay, M.; Pal, S. (2010), Advanced River Geography, ACB Publications, Kolkata
- ▶ Choudhuri, S.K. (2018), Fundamentals of Geotectonics, New Central Book Agency, Kolkata
- ▶ Mukhopadhyay, S.; Das, R. (1994), Bhumirup: Udvab o Prakriti Vol-I & II in Bengali, Paschimbanga Rajya Pustak Parshad, Kolkata
- ▶ Basu, P. (2006), Bhugathonik Prakriya o Bhumirup in Bengali, Books and Allied, Kolkata
- ▶ Sil, A. (2012), Bhugathon o Bhumirupbidya in Bengali, The Himalayan Books, Kolkata
- ▶ Sil, A. (2013), Prakriya Bhumirupbidya in Bengali, The Himalayan Books, Kolkata
- ▶ Basu, P. (2014), Prakriya Sonkranta Bhumirupbidya o Sanshlisho Jalobigyan in Bengali, Books and Allied, Kolkata
- ▶ Das, C; Pramanick, T.K. (2018), Prakritik Bhugol in Bengali, Innova Publications, Kolkata
- ▶ Chattopadhyay, G. (2019), Mahajagotik Rahasyo in Bengali, Akshar Prakashan, Kolkata
- ▶ Sengupta, P.K. ( 2019), Bhumikampo in Bengali, Education Forum, Kolkata
- ▶ Saha, S; Roy, T. (2019), Bhugathonik Prakriya o Bhumirupbidya in Bengali, Kalyani Publishers, Kolkata
- ▶ Maity, A.K.; Manna, S. (2020), Bhugathonik o Bhumirupbidya Prosonge in Bengali, Deb Prakashani, Kolkata
- ▶ Tikadar, S. (2022), Prakritik Bhugol in Bengali, Book Syndicate, Kolkata



## 6.2 SHGEO/404/GE-2: Human Geography

### Human Geography

6 Credits

<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Section-A Definition Oriented</b>	<b>(5x2=10)</b>
	<b>Section-B Short Answer Type</b>	<b>(5x4=20)</b>
	<b>Section-C Long Answer Type</b>	<b>(1x10=10)</b>

#### Unit 1: Nature and Principles

- 1.1 Nature and scope; Recent trends. Elements of Human Geography
- 1.2 Approaches to the study of Human Geography; Resource, Locational, Landscape, Environmental
- 1.3 Evolution of humans. Concept of race and ethnicity
- 1.4 Space, society and cultural regions (language and religion)

#### Unit 2: Society, Demography and Ekistics

- 2.1 Evolution of human societies: Hunting and food gathering, pastoral nomadism, subsistence farming, industrial and urban societies
- 2.2 Population growth and distribution
- 2.3 Population composition
- 2.4 Demographic Transition Model

#### Unit 3: Ekistics and Adaptation

- 3.1 Human adaptation to environment: Eskimo and Santhals
- 3.2 Population growth and environment change with special reference India.
- 3.3 Social morphology and rural house types in India
- 3.4 Types and patterns of Rural Settlements

#### Reference Books

- ▶ Bergman, E.F (1995): Human Geography-Culture, Connections and Landscape, Prentice Hall, New Jersey
- ▶ Chisholm. (1975): Human Geography, Penguin Books, Hermondsworth.
- ▶ Daniel, P.A. and Hopkinson, M.F. (1989) The Geography of Settlement, Oliver & Boyd, London.
- ▶ Johnston R; Gregory D, Pratt G. et al. (2008) The Dictionary of Human Geography, Blackwell Publication.



- ▶ Jordan-Bychkov et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.
- ▶ Norton. W. (2001): Human Geography, 4th Edition Oxford University press, Oxford
- ▶ Pearce D. (1995): Tourism Today: A Geographical Analysis, 2nd edition, Longman Scientific & Technical, London
- ▶ Pickering K. and Owen A. A. (1997): An Introduction to Global Environmental Issues, 2nd edition Rutledge, London.
- ▶ Raw, M. (1986): Understanding Human Geography: A Practical Approach, Bell and Hyman. London
- ▶ Rubenstein, J.M. (2002), The Cultural Landscape, 7th edition, Prentice Hall, Englewood Cliffs
- ▶ Smith D M (1982): Human Geography: A Welfare Approach, Edward Arnold, London
  
- ▶ Roy, T.; Mandal, B.; Maity, M.C. (2020), Manabiya Bhugol Annesswan in Bengali, Kalyani Publishers, Kolkata
- ▶ Dhara, S. (2013), Janasonkhya o Basoti Bhugol in Bengali, Naboday Publications, Kolkata
- ▶ Mandal, M. (2016), Samajik Bhugol in Bengali, Naboday Publications, Kolkata

**6.3 SHGEO/203/GE-3: Maps and Diagrams****Maps and Diagrams****6 Credits****Total Marks: 50 (IA-10 Marks + ESE-40 Marks)**

<b>Question Pattern:</b>	<b>Question-1</b>	<b>(1x10=10)</b>
	<b>Question-2</b>	<b>(1x10=10)</b>
	<b>Question-3</b>	<b>(1x10=10)</b>
	<b>Lab Note Book &amp; Viva-Voce</b>	<b>(5+5=10)</b>

**Instruction for Laboratory Note Book**

- **Practical works are to be completed in the classroom.**
- **Works are to be done in pen/pencil and neatly hand written and signed by class teachers.**
- **Laboratory Note Books have to be submitted in the examination.**

**Unit-1: Scale and Cartograms**

- 1.1 Construction of Linear and Comparative (Unit)
- 1.2 Cartograms: Circle, Square and Pie graph
- 1.3 Age-Sex Pyramid, Dependency Ratio
- 1.4 Population Maps and Diagrams: Choropleth and Dot methods

**Unit-2: Map Projections and Surveying**

- 2.1 Map Projections: Nature and Classification
- 2.2 Principles, Theories, Construction and Properties of select Map Projections: Simple Conical with one standard parallel, Cylindrical Equal Area, Polar Zenithal Stereographic
- 2.3 Surveying: Concepts and Principles- Angles, Bearing and Azimuths, Traversing, Radiation, Intersection by Prismatic Compass: Preparation of Land Use maps by open and closed traverse; computations of compass traverse- Included Angle, Area of traverse
- 2.4 Levelling by Dumpy Level: Profile

**Unit-3: Field Report**

Each student will prepare an individual report based on primary data collected from field survey and secondary data collected from different sources for either a rural area (mouza) or an urban area (municipal ward) or watershed based on cadastral, municipal or any base maps to study **related specific problems**.

The duration of the field work shall not exceed 3 days.

Report should be hand written with the following Tentative Chapter Schemes:

**Preface & Acknowledgement**

**Introduction:** Objective, Extent and Space Relations, Data sources and Methodology

**Physical Environment:** Lithology, Drainage, Slope, Climate, Soil, Vegetation etc.

**Socio Economic Environment:** Population Characteristics, Occupational Structure, Ethnic and Religions Composition, Per-Capita Income, any other aspects.

**Problems and Prospects**

**Conclusion**





### **Bibliography/References if any**

**Appendix:** Survey Questionnaire(s), Additional Tables if any if any  
Word Limit: 3000 (Excluding Tables and Appendix).

2. A copy of the bound report, duly signed by the concerned teacher, must be submitted at the time of examination.

### **Reference Books**

- ▶ Anson R. and Ormelling F. J., 1994: International Cartographic Association: Basic Cartographic Vol. Pregmen Press.
- ▶ Gupta K.K. and Tyagi, V. C., 1992: Working with Map, Survey of India, DST, New Delhi.
- ▶ Mishra R.P. and Ramesh, A., 1989: Fundamentals of Cartography, Concept, New Delhi.
- ▶ Monkhouse F. J. and Wilkinson H. R., 1973: Maps and Diagrams, Methuen, London.
- ▶ Rhind D. W. and Taylor D. R. F., (eds.), 1989: Cartography: Past, Present and Future, Elsevier, International Cartographic Association.
- ▶ Robinson A. H., 2009: Elements of Cartography, John Wiley and Sons, New York.
- ▶ Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
- ▶ Sarkar, A. (2015). Practical Geography: A Systematic Approach. Orient Black Swan Private Ltd., New Delhi
- ▶ Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi
- ▶ Adhikari, S. (2005), Honours Byaboharik Bhugol, Vol-I, Dove Publishing House, Midnapore
- ▶ Das, N.; Khatun, S. (2021), Kartographi- Dharona o Prayog in Bengali, Kalyani Publishers, Kolkata
- ▶ Roy, T.; Mandal, B.; Bandyopadhyay, C.; Maity, M.; Bishal, P. (2021), Bhougolik Gobeshana Paddhoti o Kshetra Somikha in Bengali, Kalyani Publishers, Kolkata



## 6.4 SHGEO/404/GE-4: Economic Geography

### Economic Geography

6 Credits

<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>
<b>Question Pattern:</b>	<b>Section-A Definition Oriented (5x2=10)</b>
	<b>Section-B Short Answer Type (5x4=20)</b>
	<b>Section-C Long Answer Type (1x10=10)</b>

#### Unit 1: Agriculture: Systems and Models

- 1.1 Concept of Agricultural Systems
- 1.2 Plantation Agriculture
- 1.3 Mixed Farming
- 1.4 Model of Agricultural landuse: Von Thunen Model

#### Unit 2: Industry: Models and Regions

- 2.1 Location Factors; Role of transport in industrial location
- 2.2 Models of Industrial Location: Weber & Losch
- 2.3 Industrial Regions: Asansol-Durgapur, Haldia
- 2.4 Problems of De-industrialization in West Bengal

#### Unit 3: Trade and Transport System

- 2.5 Role of WTO, EEC, SAARC in International Trade
- 2.6 Role of OPEC in Petroleum Industry
- 2.7 Transport Network: Accessibility and Connectivity
- 2.8 Major transport problems in India

#### Reference Books

- ▶ Alexander J. W., 1963: Economic Geography, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
- ▶ Coe N. M., Kelly P. F. and Yeung H. W., 2007: Economic Geography: A Contemporary Introduction, Wiley-Blackwell.
- ▶ Hodder B. W. and Lee Roger, 1974: Economic Geography, Taylor and Francis.
- ▶ Combes P., Mayer T. and Thisse J. F., 2008: Economic Geography: The Integration of Regions and Nations, Princeton University Press.
- ▶ Wheeler J. O., 1998: Economic Geography, Wiley..
- ▶ Durand L., 1961: Economic Geography, Crowell.
- ▶ Bagchi-Sen S. and Smith H. L., 2006: Economic Geography: Past, Present and Future, Taylor and Francis.
- ▶ Willington D. E., 2008: Economic Geography, Husband Press.
- ▶ Clark, Gordon L.; Feldman, M.P. and Gertler, M.S., eds. 2000: The Oxford
- ▶ Baud-Bovy, M. and Lawson, F. (1977), "Tourism and Recreation Development", The Architectural Press Ltd, CBI Publishing Company, Boston



- ▶ Boniface, B.G. and Cooper, C.P. (1987), "The Geography of Travel & Tourism", Heinemann Professional Publishing, Oxford.
- ▶ Burton, R. (1991), "Travel Geography", Pitman Publishing, London.
- ▶ Butler, R.W. (2010), ed, "The Tourism Area Life Cycle: Applications and Modifications", Vol-1, Viva Books Private Limited, New Delhi.
- ▶ Butler, R.W. (2010), ed, "The Tourism Area Life Cycle: Conceptual and Theoretical Issues", Vol-2, Viva Books Private Limited, New Delhi.
- ▶ Cooper, C., Fletcher, J., Gilbert, D. and Wanhill, S. (1993), "Tourism: Principles and Practice", Pitman, London.
- ▶ Hall, M. and Stephen, P. (2006) Geography of Tourism and Recreation –Environment, Place and Space, Routledge, London.
- ▶ Mathison, A. and Wall, G. (1982), "Tourism: Economic, Physical and Social Impacts", Longman, Harlow.
- ▶ Mill, R. C. and Morrison, A. M. (1985), "The Tourism System: An Introductory Text", Prentice Hall, New Jersey.
- ▶ Pearce, D. (1989), "Tourism and Regional Development", Longman, London.
- ▶ Pearce, D. (1995), Tourism Today: A Geographical Analysis, Longman, London



## 7. Semester-wise Structure in Honours

### SEMESTER –I

Course ID	Course Code	Course Title	Credit	Marks			No. of Hours			
				I.A.	ESE		Total	Lec	Tu.	Pr.
					T	P				
11901 11911	SH/GEO/ 101/C-1	Geotectonics and Geomorphology	6	10	40	0	50	5	1	-
11902 11922	SH/GEO/ 102/C-2P	Cartographic Techniques	6	10	0	40	50	4	-	4
11904 11914	SH/GEO/ 103/GE-1	Other than Geography Students C-1: Physical Basis of Earth	6	10	40	0	50	5	1	-
11800 11810	ACSHP/104 / AECC-1	Environmental Studies	4	10	40	0	50			
<b>Total in Semester - I</b>			<b>22</b>	<b>40</b>	<b>120</b>	<b>40</b>	<b>200</b>			

### SEMESTER –II

Course ID	Course Code	Course Title	Credit	Marks			No. of Hours			
				I.A.	ESE		Total	Lec.	Tu.	Pr.
					T	P				
21901 21911	SH/GEO/ 201/C-3	Human Geography	6	10	40	0	50	5	1	-
21902 21922	SH/GEO/ 202/C-4P	Cartograms and Mapping Techniques	6	10	0	40	50	4	-	4
21904 21914	SH/GEO/ 203/GE-2	Other than Geography Students C-2: Human Geography	6	10	40	0	50	5	1	-
	ACSHP/204 / AECC-2	English/Hindi/MIL	2	10	40	0	50			
<b>Total in Semester - II</b>			<b>20</b>	<b>40</b>	<b>120</b>	<b>40</b>	<b>200</b>			

**SEMESTER –III**

Course ID	Course Code	Course Title	Credit	Marks				No. of Hours		
				I.A.	ESE		Total	Lec.	Tu.	Pr.
					T	P				
31901 31911	SH/GEO/ 301/C-5	Climatology	6	10	40	0	50	5	1	-
31902 31912	SH/GEO/ 302/ C-6	Geography of India	6	10	40	0	50	5	1	-
31903 31923	SH/GEO/303/ C-7	Statistical Methods in Geography	6	10	0	40	50	4	-	4
31904 31924	SH/GEO/ 304/GE-3	Other than Geography Students C-3: Maps & Diagrams	6	10	0	40	50	4	-	4
31905 31915	SH/GEO/ 305/SEC-1	Computer Basics and Applications	2	10	0	40	50	-	-	4
<b>Total in Semester - III</b>			<b>26</b>	<b>50</b>	<b>80</b>	<b>120</b>	<b>250</b>			

**SEMESTER –IV**

Course ID	Course Code	Course Title	Credit	Marks				No. of Hours		
				I.A.	ESE		Total	Lec.	Tu.	Pr.
					T	P				
41901 41911	SH/GEO/401/ C-8	Regional Planning and Development	6	10	40	0	50	5	1	-
41902 41912	SH/GEO/402/ C-9	Geography of Economic Activities	6	10	40	0	50	5	1	-
41903 41923	SH/GEO/403/ C-10	Analytical Techniques in Environmental Geography	6	10	0	40	50	4	-	4
41904 41914	SH/GEO /404/GE-4	Other than Geography Students C-4: Economic Geography	6	10	40	0	50	6		
41905 41925	SH/GEO/ 405/SEC-2	GIS and GNSS	2	10	0	40	50	-	-	4
<b>Total in Semester - IV</b>			<b>26</b>	<b>50</b>	<b>120</b>	<b>80</b>	<b>250</b>			

**SEMESTER –V**

Course ID	Course Code	Course Title	Credit	Marks				No. of Hours		
				I.A.	ESE		Total	Lec.	Tu	Pr.
					T	P				
51901 51911	SH/GEO/ 501/C-11	Evolution of Geographical Thought	6	10	40	0	50	5	1	-
51902 51922	SH/GEO/ 502/C-12	Remote Sensing Techniques	6	10	0	40	50	4	-	4
51906 51916	SH/GEO/ 503/DSE-1	Hydrology and Oceanography	6	10	40	0	50	5	1	-
51907 51917	SH/GEO/ 504/DSE-2	Cultural and Settlement Geography	6	10	40	0	50	5	1	-
		Urban Geography								
<b>Total in Semester – V</b>			<b>24</b>	<b>40</b>	<b>120</b>	<b>40</b>	<b>200</b>			

**SEMESTER – VI**

Course ID	Course Code	Course Title	Credit	Marks				No. of Hours		
				I.A.	ESE		Total	Lec.	Tu.	Pr.
					T	P				
61901 61911	SH/GEO/ 601/C-13	Disaster Management	6	10	40	0	50	5	1	-
61902 61922	SH/GEO/ 602/C-14	Research Methodology and Field Work	6	10	0	40	50	4	-	4
61906 61916	SH/GEO/ 603/DSE-3	Soil and Biogeography	6	10	40	0	50	5	1	-
61907 61917	SH/GEO/ 604/DSE-4	Population Geography	6	10	40	0	50	5	1	-
		Geography of Tourism								
<b>Total in Semester – VI</b>			<b>24</b>	<b>40</b>	<b>120</b>	<b>40</b>	<b>200</b>			

SH=Science Honours, GEO = Geography, ACSHP= Arts Commerce Science Honours Pass, C= Core Course, AECC= Ability Enhancement Compulsory Course, SEC= Skill Enhancement Course, GE= Generic Elective, DSE= Discipline Specific Elective IA= Internal Assessment, ESE= End-Semester Examination, Lec.=Lecture, Tu.= Tutorial, and Prc.=Practical



## 8. Course Objective

The principal objectives of this undergraduate course in Geography are:

- i. To understand the core content and techniques particularly modern techniques in geography.
- ii. To explore the theories and techniques used in regional planning and development.
- iii. The syllabus also aims to develop basic skills of the subject to prepare students to pursue higher studies in geography and to make them successful in search of suitable employment.

## 9. Course Outcome

The Geography is the study of distribution of elements over space as well as the mutual and reciprocal relationship between man and environment. It also studies different activities of man in different milieu of life in changing the face of the earth, how 'space' turns into 'place' with different values added to it by man's varied modes of life with due emphasis on major empirical questions of 'what', 'why', 'how' and 'where'. Therefore, the study of this discipline at undergraduate level would have the following learning outcomes in general:

- i. It helps to develop a holistic understanding of the earth as the home of man.
- ii. Student can understand what Geography really is. They shall come to know that geography is not merely a 'science of placenames', rather it is true science of distribution with expertise in various modern skills and techniques.
- iii. Students will be to find their place in job market both in academic as well as corporate sector.
- iv. Students also can explore the engineering aspects of the discipline particularly Geoinformatics, Geoinformation Science, Geomatics Engineering etc.
- v. At the end of the course, students will be capable of segmenting the whole discipline in three different components- physical, human and applied.

## 10. Course Specific Outcome

Geography is widely accepted as the most emerging science in recent years due to its versatile character to include contents of both science and humanities. Therefore, students from both the streams can choose the subject at their undergraduate level. Bankura University offers B.Sc, degree in Geography keeping in view the demand of the students as well as towards making it more suitable for higher education where stiff competition is prevailed from other science students. Since its inception, the university follows CBCS curriculum based on UGC guidelines with slight modification in view of the local aspects. Geography basically deals with space. The spatial aspects of the earth, their guiding laws and theories, nature and evolution are recorded and represented through a number of instrumental and mechanical ways. A holistic view of the Earth as an entity and the features within the earth are taught to students. The evolution of natural landscape to cultural landscape is illustrated. The mapping techniques are guides to represent all the physical, social, cultural features through proper scaling and elaborative description. The project based studies and analysis are very helpful in building up a research outlook among the students. They learn about the sample drawing procedures and detailed idea about the important issues around them. The course is intersected into several small sections and put under expert faculties of that field to provide the students the desired benefit of the course. The course outcome/learning outcome along with the broad divisions of the syllabus are represented as under:



Course Code	Course Title	Course Outcome/Learning Outcome
<b>UG (Semester I)</b>		
SHGEO/101/C-1T	Geotectonics and Geomorphology	<ol style="list-style-type: none"> <li>1. Understanding origin and evolution of Earth with special reference to cross-cutting approach like Big Bang Model</li> <li>2. To have an idea of our dynamic earth and its geological make up.</li> <li>3. Understanding major processes that are responsible for its surface features.</li> </ol>
SHGEO/102/C-2P	Cartographic Techniques	<ol style="list-style-type: none"> <li>1. Learning measurement of the various features of the earth by developing expertise on cartographic methods and techniques</li> <li>2. Developing concepts in projecting the earth as a planet.</li> <li>3. Measuring the earth's surface features on horizontal and vertical planes through learning of different surveying and levelling operations.</li> </ol>
<b>UG (Semester II)</b>		
SHGEO/201/C-3T	Human Geography	<ol style="list-style-type: none"> <li>1. Understanding the nature and principles of human geography with special emphasis on cultural aspects of man.</li> <li>2. Developing concepts on the evolution of mankind and spatial population characters</li> <li>3. Students will learn to analyse man-environment interrelations.</li> </ol>
SHGEO/ 202/C-4P	Cartograms and Thematic Mapping	<ol style="list-style-type: none"> <li>1. Students would learn graphical representation of statistical data.</li> <li>2. Develop skills of map making and basics of cartography.</li> <li>3. Understanding topographical map (OSM)- its nomenclature and develop practical skills of interpreting man-environment interrelations.</li> </ol>
<b>UG Semester III</b>		
SHGEO/ 301/C-5T	Climatology	<ol style="list-style-type: none"> <li>1. Ability to apply various laws of physics learnt at school level to understand atmospheric processes particularly monsoon circulation.</li> <li>2. Capable of understanding day to day changes of weather and their impacts.</li> <li>3. Understanding the origin and trajectory of tropical cyclone is pertinent to real life as the region falls within the most devastating cyclone regime.</li> </ol>
SHGEO/ 302/C-6T	Geography of India	<ol style="list-style-type: none"> <li>1. Able to understand the geological and climatic makeup of the country in general and the state of West Bengal in particular.</li> <li>2. Will learn the socio-economic profiles of India as well as West Bengal.</li> </ol>
SHGEO/ 303/C-7P	Statistical Methods in Geography	<ol style="list-style-type: none"> <li>1. Students will learn various quantitative techniques to supplement regular qualitative interpretation.</li> <li>2. Statistics as a tool of geography provides strong scientific footing to geographical interpretation and it helps students to make any geographical study and empirical base.</li> </ol>





SHGEO/ 305/SEC-1P	Computer Basics and Applications	<ol style="list-style-type: none"> <li>1. Students will learn basics of computer architecture— hardware and software components, operating systems, input and output devices etc.</li> <li>2. They will be made capable of handling MS-EXCEL particularly statistical calculations, formula making and graphical representation of data which has immense application in higher studies.</li> </ol>
<b>UG Semester IV</b>		
SHGEO/401/C- 8T	Regional planning & Development	<ol style="list-style-type: none"> <li>1. Students will learn processes and methods of planning for regional economic development.</li> <li>2. Have an understanding on various theoretical perspectives of regional planning at different levels.</li> <li>3. Have an idea of the present status of a number regional development programmes and policies taken at national and regional level.</li> </ol>
SHGEO/402/C-9T	Geography of Economic Activities	<ol style="list-style-type: none"> <li>1. Would learn theoretical background of agriculture which is very pertinent to the country like India where nearly two-thirds of population is dependent on agriculture in the country.</li> <li>2. It also aims to develop students' knowledge on the tourism as an alternative means of economic development.</li> </ol>
SHGEO/403/C- 10P	Environmental Geography	<ol style="list-style-type: none"> <li>1. The world is going through environmental crisis. In this backdrop the curriculum is very relevant where students will have practical experience on various impact assessment methods.</li> <li>2. Students will also learn various techniques of measurements of environmental parameters.</li> <li>3. The project based learning will have deeper understanding of the techniques and concepts.</li> </ol>
SHGEO/405/SEC- 2P	GIS and GNSS	<ol style="list-style-type: none"> <li>1. Students will have practical experience on handling GIS softwares and its theoretical background.</li> <li>2. They will also be able to handle GPS/GNSS devices, collect waypoints and working with them in MS-EXCEL as well as GIS platforms.</li> <li>3. At the UG level, students will also be able to make their own maps in GIS software and they will have hands on experience on Digital Cartography.</li> </ol>
<b>UG Semester V</b>		
SHGEO/501/C- 11T	Evolution of Geographical Thought	<ol style="list-style-type: none"> <li>1. Students will learn the growth and development of the discipline during its entire course of journey.</li> <li>2. It helps to understand the basic philosophy of geography which is broadly considered as "Areal Differentiation".</li> <li>3. It highlights various schools of thought evolved in different areas of the world with a thrust into the paradigm shift in the discipline during its making.</li> </ol>
SHGEO/502/C- 12P	Remote Sensing Techniques	<ol style="list-style-type: none"> <li>1. Students will learn to understand basic concepts of remote sensing as a modern data acquisition tool.</li> <li>2. It will give practical idea of data downloading, classification and further analysis of georeferenced earth data which they can further use in various research endeavours.</li> </ol>



SHGEO/503/DSE-1T	Hydrology and Oceanography	<ol style="list-style-type: none"> <li>4. Have an understanding of the controlling factors and flow pattern of surface runoff as well as underground water- its recharge and discharge.</li> <li>5. Students will be able to understand various air-sea interaction processes by studying oceanography.</li> </ol>
SHGEO/504/DSE-2T	Cultural and Settlement Geography	<ol style="list-style-type: none"> <li>1. Students will be able to correlate different cultural traits with their own and the cultural transformation with time.</li> <li>2. Understanding of the patterns of rural as well as urban settlements and their distribution over space.</li> </ol>
SHGEO/504/DSE-2T	Urban Geography	<ol style="list-style-type: none"> <li>1. During recent phase of unprecedented urbanization, students will learn concepts and theories of urbanization.</li> <li>2. They will also learn different aspects and problems of urbanization with special reference to India.</li> </ol>
<b>UG Semester VI</b>		
SHGEO/601/C-13T	Disaster Management	<ol style="list-style-type: none"> <li>1. In the present context, it is pertinent to study disaster preparedness, techniques of mitigation and management.</li> <li>2. Will develop concepts of disaster risk perception and will have an idea of various types of disasters in the country in its different geographical regions.</li> <li>3. Will develop knowledge on various kinds of environmental hazards, management techniques particularly earthquake, landslide, cyclone, floods etc.</li> </ol>
SHGEO/602/C-14P	Research Methodology and Field Work	<ol style="list-style-type: none"> <li>1. Geography is basically a field based science. Students can enhance their understanding level of field observation and interpretation skill along with report writing and presentation skill in front of experts.</li> <li>2. Students will be empowered to do their research work right at the UG level.</li> <li>3. They will get practical experience in undertaking research projects on their own which will ultimately build confidence among them in their higher studies and research.</li> </ol>
SHGEO/603/DSE-3T	Soil and Biogeography	<ol style="list-style-type: none"> <li>1. Students will learn the factors and processes of soil formation and their physical and chemical properties.</li> <li>2. Have an understanding on the role of man in changing the face of the earth particularly the biosphere.</li> </ol>
SHGEO/604/DSE-4T	Population Geography	<ol style="list-style-type: none"> <li>1. Have an idea on the concepts of different aspects of population and students will be able to understand the reasons behind population problems in different regions of the country.</li> <li>2. They will also build concepts on population policies and different contemporary issues on population geography.</li> </ol>



SHGEO/604/DSE-4T	Geography of Health and Well Being	<ol style="list-style-type: none"><li>1. Students will be made well aware of different types of health risks and diseases and their impact on society.</li><li>2. They will develop concepts on how climatic change impacts on the distribution of diseases and spread of new types of vector borne diseases around the world.</li></ol>
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