GOVERNMENT COLLEGE FOR WOMEN (A)

KUMBAKONAM – 612 001

B.Sc. Geography

Curriculum Structure
&
Syllabus

(under CBCS)

(Applicable to the candidates admitted from the academic year 2015-16 onwards)

GOVERNMENT COLLEGE FOR WOMEN (A) KUMBAKONAM

DEPARTMENT OF GEOGRAPHY

B.Sc. GEOGRAPHY – COURSE STRUCTURE UNDER CBCS
(For the candidates admitted from the academic year 2015-2016 onwards)

Eligibility: +2 pass with any group

Sem	Course	Title of the Paper	Ins.Hours	Credit	Marks
I	Part I –Language	Tamil	6	3	100
	Part II- Language	English	6	3	100
	Part III- Core Course I	Geomorphology	6	5	100
	Part III Core Course II	Practical I Representation of Relief and Map Making	3	-	-
	Allied Course I	Cartography	6	4	100
	Allied Course II	Practical I Cartography	3	-	-
	Total		*30*	*15*	*400*
II	Part I –Language	Tamil	6	3	100
	Part II- Language	English	6	3	100
	Part III Core Course II	Practical I Representation of Relief and Map Making	3	5	100
	Part III Core Course III	Climatology	5	5	100
	Allied Course II	Practical I Cartography	2	3	100
	Allied Course III	Geography of Tourism	4	3	100
	Part IV	Value Education	2	2	100
	Part IV	Environmental Studies	2	2	100
	Total		*30*	*26*	*800*
III	Part I –Language	Tamil	6	3	100
	Part II- Language	English	6	3	100
	Part III Core Course IV	Oceanography	6	5	100
	Part III Core Course V	Climatic Diagrams and Weather Report	3	-	-
	Allied Course IV	Statistics I	5	4	100
	Allied Course V	Practical II Statistics II	2	-	-
	Part IV Non Major Elective Course	Remote sensing and GIS	2	2	100
	Total		*30*	*17*	*500*

Sem	Course	Title of the Paper	Ins.Hours	Credit	Marks
IV	Part I –Language	Tamil	6	3	100
	Part II- Language	English	6	3	100
	Part III Core Course V	Climatic Diagrams and Weather Report	2	5	100
	Part III Core Course VI	Human Geography	5	4	100
	Allied Course V	Practical II Statistics II	3	4	100
	Allied Course VI	Statistics III	4	3	100
	Part IV Non Major Elective Course	Disaster Studies	2	2	100
	Part IV Skill Based Elective Course		2	2	100
	Total		*30*	*26*	*800*
V	Part III Core Course VII	World Regional Geography	6	6	100
	Part III Core Course VIII	Geography of Resources	5	5	100
	Part III Core Course IX	Geography of India	5	5	100
	Part III Core Course X	Biogeography	5	5	100
	EC I Major Based Elective Course	Geography For Competitive Examinations	5	5	100
	Part IV Skill Based Elective Course II		2	2	100
	Part IV Skill Based Elective Course III		2	2	100
	Total		*30*	*30*	*700*
VI	Part III Core Course XI	Practical III Map Projection and Surveying	6	5	100
	Part III Core Course XII	Geography of Tamilnadu	6	5	100
	Part III Core Course XIII	Practical IV Interpretation of Toposheets, Aerial Photos and Imageries	6	5	100
	EC II Major Based Elective Course	Geoinformatics	5	5	100
	EC III Major Based Elective Course	Agricultural Geography	6	4	100
	Extension Activities		-	1	
	Part IV	Gender Studies	1	1	100
	Total		*30*	*26*	*600*
GRAND TOTAL			*180*	*140*	*3800*

Total No. of Papers : 38
Total Hours : 180
Credit : 139
Extension Activities : 1
Total Marks : 3800

SEMESTER I **CORE COURSE I**

GEOMORPHOLOGY

UNIT I

Geomorphology – Nature, Scope and development of Geomorphology – The Solar system and Origin of the earth (Kant and Laplace) – Interior of the earth.

UNIT II

Geomorphic Processes: Internal and External Processes – Diastrophism – fold, faults, joints. Wegner's Continental Drift theory, Plate Tectonic Theory – Volcanism: Types, distribution and impacts- Earthquakes: Causes and effects.

UNIT III

Rocks – Origin and Types: Igneous, Sedimentary and Metamorphic. External Processes: Weathering: Physical, Chemical and Biological. Mass wasting: Soil creep, landslide, rock fall, rock slip and mud flow.

UNIT IV

Geomorphic agents and processes – Work of the River as an agent of erosion – Transportation – Deposition and related features. Davis concept of cycle of Erosion –Glacial erosion and its related features.

UNIT V

Aeolian landscapes in deserts – Coastal landscapes in submerged and emerged coast – Karst Topography – Work of Under Ground Water – Geysers and Springs.

REFERENCES

1.Monkhouse, F.J., (1960): Principles of Physical Geography,Hodder and Hodder and Stoughton, London.Sparks, B. W., (1960): Geomorphology, Longmans, London.
2. Sivamoorthy, A., (1964): Geomorphology (Tamil Edition), Tamil Nadu Text Book Society, Chennai.
3. Dayal,P.A., (1996): Text Book of Geomorphology, shukla Book Depot, Patna.
4. Singh, S., (1998): Geomorphology, Prayag Pustakalaya, Allahabad.

SEMESTER I **CORE COURSE II**

PRACTICAL I REPRESENTATION OF RELIEF AND MAP MAKING

UNIT I

Scales: Meaning – Conversion of Scales – Construction of Simple Linear Scale, Comparative Scale, Diagonal Scale and Time Scale.

UNIT II

Enlargement and Reduction of Maps – Square and Similar Triangular Methods. Combination of Maps.

UNIT III

Representation of Relief Features on Map: Spot Height, Bench Mark, Hachuring, Hill Shading and Layer Shading – Form Lines.

UNIT IV

Drawing of Contour Diagrams – Identification of Relief Features through Contour Map.

REFERNCES:

1. **S. Jayachantran. practical Geography (Tamil Edition) Tamil Nadu Text Book Society, Chennai.**
2. **Z.A .Khan (1998), Text Book of practical Geography, concept publishing Company.**
3. **B.S. Negi (1995) Text Book of practical Geography, Kedar Nath, Ramnath, Meerut.**
4. **Gopal Singh (1996) Map Work Practical Geography, Vikas Publishing House Pvt. Ltd., New Delhi**
5. **F.J. Monk house and H.R. Wilkinson, (1980) Maps and Diagrams, B.I. Publications, New Delhi.**

SEMESTER I **ALLIED COURSE I**

CARTOGRAPHY I

UNIT-1

Cartography – Definition , Nature, Scope and Significance of Cartography – Science and art of Cartography - Cartography as a Science of human communication - Major branches of Cartography - Development and modern trends in Cartography.

UNIT-2

Types of maps and Uses- Map Compilation and generalization – Enlargement and Reduction- Procedures of map compilation- layout pull – ups- Generalization of physical and cultural details- finalization.

UNIT-3

Map design and Layout: Principles of Map design – Constraints in map design – Symbolization : Point, Line and Area Symbols – Map Format – Lettering : Style.

UNIT-4

Map reproduction – Processes: Duplicating Processes and Printing Processes.

UNIT-5

Computer assisted Cartography – Data explosion and the need for computers in map making- Digital format of map- Information updating and Instant map. Merits and demerits of computer usage in Cartography.

REFERNCES:

1. **Gregory.S- Statistical Methods and the Geographer, Longman.S, London (1963)**
2. **Lawrence. G.R.P.- Cartographic Methods , Methuen, London (1968).**
3. **Singh, R.L. and Dutt.P.K.- Element of practical Geography, Kalyani publishers and New Delhi (1979)**
4. **Misra. R.P. and Ramesh. A- Fundamentals of Cartography, memillan co., New Delhi (1986).**
5. **Robinson. A.H.et al – Elements of cartography. John Wiley & Sons. U.S.A (1995).**
6. **Khan.Z.A. Text Book of pratical Geography Concept New Delhi (1998).**

SEMESTER I **ALLIED COURSE II**

PRACTICAL - CARTOGRAPHY II

UNIT I

Latitude and Longitude – International Date Line – Time Conversion – Direction and Bearings.

UNIT II

Measurement of Distance: Thread, Divider and Rotometer methods - Measurement of Area- Square and strip methods - Function of Planimeter.

UNIT III

Qualitative Distribution Maps – Types: Chorochromatic Maps, Simple Colour Maps, Choroschematic Maps with Pictorial.

UNIT IV

Quantitative Distribution Maps – Types: Dot Maps, Colour Dot Maps, Multiple Dot Maps – Maps with Located Diagrams – Bar Graph, Circle Sphere, Flow Maps, Volume Maps.

REFERNCES:

1. **S. Jayachantran. practical Geography (Tamil Edition) Tamil Nadu Text Book Society, Chennai.**
2. **Z.A .Khan (1998), Text Book of practical Geography, concept publishing Company.**
3. **B.S. Negi (1995) Text Book of practical Geography, Kedar Nath, Ramnath, Meerut.**
4. **Gopal Singh (1996) Map Work Practical Geography, Vikas Publishing House Pvt. Ltd., New Delhi**
5. **F.J. Monk house and H.R. Wilkinson, (1980) Maps and Diagrams, B.I. Publications, New Delhi.**

SEMESTER II **CORE COURSE III**

CLIMATOLOGY

UNIT I

Definition and Significance of Climatology – Climatic Elements – Weather and Climate – Composition and Structure of Atmosphere – Insolation.

UNIT II

Horizontal and Vertical Distribution of Temperature – Range of Temperature – Diurnal, Seasonal, and Annual – Heat Budget.

UNIT III

Atmospheric Pressure and Winds: Vertical, Horizontal Distribution of Pressure – Planetary & Local Winds – Jet stream.

UNIT IV

Atmospheric Moisture – Forms of Precipitation and Types of Rainfall – Clouds – Types – Air Masses- Classification – Fronts.

UNIT V

Cyclone – Types: Tropical, Temperate Cyclones and Anticyclones. Climatic Classifications of Koppen and its significance.

REFERENCES

1 .Lal,D.S.,(1989): Climatology, Chaitanya publisher's House, Allahabad.

2. Critchfield,H.,(1975): General Climatology, Prentice-Hall, New-York.

3. Das,R.K.,(1968): The Monsoons, National Book Trust, New Delhi.

4. Mather,J.R.,(1974): Climatology, McGraw Hill, New York.

5. Kumaraswamy.K.,et al.,(2003): Climatology (Tamil Edition), Grace Publishers, Kumbakonam.

SEMESTER II **ALLIED COURSE III**

GEOGRAPHY OF TOURISM

UNIT – I

Meaning & Nature of Tourism - Basic Concepts, Components –Types of Tourism – Hotel and Types – Motivation of Tourism.

UNIT –II

Historical growth – Prehistoric – Middle Ages – Modern Period. Causes and Consequences for growth – Technological Causes.

UNIT-III

Role of Travel Agency – Travel Agent – Tour Operators – Travel Organization Planning & development – Importance of Tourism Planning.

UNIT – IV

International Tourism Organizations: International Union of Official Travel Organization – World Tourism Organization – Pacific Asia Travel Association (PATA).

UNIT – V

Tourism Places in India & Tamil Nadu – Periyar - Mudumalai – Kovalam beach — Kanniyakumari beach – Shimla – Udagamandalam- Kodaikanal– Tirupati – Thanjavur – Madurai.

REFERENCES :

1. **Tourism Development – Principles and Principles and Practices, Bhatia A.K.**
2. **Dynamics of Tourism – T.N. Kaul.**
3. **An Introduction to Travel and Tourism – Preamnathsen.**
4. **Tourism and Development – Bryden and John M.**
5. **Tourism Past. Present and Future – Brykare. A.J. and Medliks.**
6. **The Social implication of Tourism Development – Buseller R.V**
7. **Tourism Management and Marketing A.K. Bhatia**

SEMESTER III **CORE COURSE IV**

OCEANOGRAPHY

UNIT – I

Oceanography: Nature, Scope and Significance – Distribution of Land and Sea – Surface configuration of the Ocean floor – Continental shelf, Continental slope – Deep sea plains and Oceanic Deeps.

UNIT – II

Major Relief Features of the Atlantic Ocean, Pacific Ocean and Indian Ocean. Horizontal and Vertical Distribution of Sea water Temperature – Salinity and Density of Sea water.

UNIT – III

a) Dynamics of Ocean Water: Currents – Factors Influencing Ocean Circulation, origin and Circulation of Ocean Currents in the Atlantic, Pacific and Indian Ocean.

b) Waves and Tides: Types and Effects.

c) Tsunami's: Origin and Effects.

UNIT – IV

Ocean Deposits: Classification and distribution – Coral reefs – Types - Conditions for the Growth.

UNIT – V

Marine Resources: Types – Distribution and Uses. Ocean as a Store House of Resources like food, energy and minerals.

REFERENCES:

1. **Ramasamy.G (1970): Oceanography (Tamil Edition), Text Book of Society, Chennai.**
2. **Nagi.B.S.(1995) Climatology and Oceanography Kedar Nath Ram Nath, Meerut.**
3. **Siddhartha.K (1998) The Oceans, CDER Delhi.**
4. **Tilkha R.N. (1999), Physical Geography, Kedar Nath Ram &co., Meerut.**
5. **Savindra singh (2002) Physical Geography.**
6. **Dr.Subbiah - Oceanography (Tamil Edition).**

SEMESTER III **CORE COURSE V**

PRACTICAL II CLIMATIC DIAGRAMS AND WEATHER REPORT

UNIT I

Diagrammatic representation of Climatic Data – Types of Line and Bar Diagrams. Drawing of Isopleth Maps (Isotherm, Isobar and Isohytes)

UNIT II

Simple Climatic Diagrams – Climatic Graphs, Taylor's and E.E. Foster's Climograph, Hythergraph, Ergograph, Rainfall Dispersion Diagram.

UNIT III

Wind Roses – Simple Wind Rose Diagram, Star Wind Rose Diagram, Superimposed Wind Rose Diagram and Octagonal Wind Rose Diagram.

UNIT IV

Weather Symbols – Beaufort Scale – Station Model – Interpretation of Indian Daily Weather Report(All Seasons) – Tracking of Cyclones.

REFERENCES:

1. **Gopal Singh, (1996): Map Work Practical Geography, Vikas Publishing House, New Delhi.**
2. **Jayachandran, (1964): Practical Geography (Tamil Edition) Tamil Nadu Text Book Society, Chennai.**
3. **Khan, Z.A., (1998): Text Book of Practical Geography, Concept Publishing Company, New Delhi.**
4. **Monkhouse, F.J. and H.R. Wilkinson, (1980): Maps and Diagrams, B.I Publications, New Delhi.**
5. **Negi, B.S., (1995): Text Book of Practical Geography, Kedar Nath publications, Meerut.**

SEMESTER III **ALLIED COURSE IV**

STATISTICS I

UNIT I

Fundamentals of Statistics and limitations of Statistics – Uses of Statistics in Geography, Collection of Data - Primary and secondary.

UNIT II

Classification – Different types – Objectives – Tabulation of Data – Frequency distributions – simple problems.

UNIT III

Diagrammatic and Graphic Representation – Difference – Bar Diagrams - Simple, Compound and Component – Histogram, Frequency Polygon and Ogive curve.

UNIT IV

Measures of Central Tendency – Properties – Mean, Types of Mean- Median, Mode. Geometric Mean and Harmonic Mean.

UNIT V

Measures of Dispersion – Range, Quartile Deviation, Mean Deviation, Standard Deviation and Coefficient of Variation.

REFERENCES:

1. **S.P. Gupta-Statistical Methods, Sultan chand & Sons. New Delhi. Dievairrakkam**
2. **Gregory. S Statistical Methods and the Geographer, London 1963.**
3. **Harmond and Megullah – Quantitative Techniques in Geography.**
4. **Aslam Mahmood – Statistical Methods in Geographical Studies.**

SEMESTER III **ALLIED COURSE V**

PRACTICAL - STATISTICS II

UNIT I

Analysis of frequency distribution – Frequency table – Graphs, Histogram, Polygon, Frequency Curve, Ogive or Cumulative Frequency Curves.

UNIT II

Time Series Analysis – Moving Average – Semilog and Log Log Graph.

UNIT III

Test of distribution in Space – Mean, Median, Mode – Correlation, Rank Correlation, Location Quotient, Index of Diversification, Index of Concentration.

UNIT IV

Hypothesis Testing – Chi-square Test, T-Test and F Test.

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REFERENCES:

1. **Gregory .S (1971) – Statistical Methods in Geography Orient Longmans Press**
2. **Hammond & Me Gullah – Quantitative Techniques in Geography**
3. **Mahmood & Aslam – Statistical Methods in Geographical Studies**
4. **Monkhouse F.J. – Maps and Diagrams**
5. **Smith D.M. – Patterns in Human Geography**

SEMESTER III **NON MAJOR ELECTIVE COURSE I**

REMOTESENSING AND GIS

UNIT I

Remote Sensing: Definition, Types, Historical Development, An Ideal Remote sensing system – Platforms – Satellite Remote sensing – Types of Satellite and Orbits, Uses of Remote Sensing.

UNIT II

Electro Magnetic Radiation: Electromagnetic Radiations, Scattering of EMR, Spectral signatures, Energy interaction with atmosphere, Earth Surface features (Water, Soil and Vegetation).

UNIT III

Remote Sensing Sensors: Types of Sensors & Platform Characteristics of LAND SAT, SPOT, IKONOS and IRS.

UNIT IV

Aerial Remote sensing: Definition – Aerial Photographs; Types, Photogrametry and Elements of visual interpretation.

UNIT V

Geographic Information System: Definition, Components of GIS, Input data for GIS – Types of Input products, Applications of GIS: Flood, Drought, Earthquake, Landslide and Volcanoes.

REFERENCES:

1. **Lillesand T.M. and R.W. Kiefer 1987 Remote Sensing and lmage Interpretation John Wiley & Sons. New York.**
2. **Arthur Carcknell Ladson Hayes September 1991, Introduction to Remote Sensing, Taylor & Francis.**
3. **Eric C.Barrett, Anton Micallef., October 1991, Remote Sensing for Hazard Monitoring and ;Disaster Assessment: Marine and Coastal Application in the Mediterranean Region, Gprdpm & Breach Science Publication.**
4. **Floyd F. Sabins August 1997, Remote Sensing: Principles of Interpretation. W. H.Freeman & Co.**

SEMESTER IV **CORE COURSE VI**

HUMAN GEOGRAPHY

UNIT I

Scope and Content of Human Geography, Concepts of Determinism, Possibilism, Neo-Determinism and Probabilism.

UNIT II

Population – Significance of studying the distribution of Population – Spatial pattern of distribution – Growth of Population – Factors of Population Growth Population in developed and developing countries – Migration Causes Types – Effects and Problems.

UNIT III

Origin of Settlements Types: Rural and Urban Settlements – Rural Settlement: Definition – Functions of Rural Settlements – Patterns of Rural Settlements.

UNIT IV

Urban Settlements – Definition of Urban Places – Site and Situation of Towns – Functional Classification of Towns.

UNIT V

Origin and Growth of Urbanization in the World – Problems associated with Urbanization – Urbanization in India – Indian Metropolitan Cities (Delhi, Calcutta, Mumbai and Chennai)

REFERENCES:

1. **Coh Cheng Leone Human and Economic Geography Oxford University Press Delhi.**
2. **Peripillou A.V.Human Geography Long man Group Pvt.Lid.,**
3. **G.T.Trewartha (1969) Geography of Population, World Patterns john Wiley and Sim lnc.**
4. **R.L.Singh (1972) Readings in Rural Settlement Geography. Benaras Hindu University, Varanasi.**
5. **K. Siddhartha and SD. Mukhanee(1998) Cities and Urbanisiation Syste**

SEMESTER IV **ALLIED COURSE VI**

STATISTICS III

UNIT –I

Skewness and Kurtosis – Definition, Coefficient of Skewness – Bowley's and Pearson's - Simple Problems.

UNIT – II

Correlation – Scatter diagram, Karl Pearson's Coefficient of correlation – Rank Correlation – Spearmen's Correlation.

UNIT – III

Regression – Difference between Correlation and Regression – Regression line (two variables only) – Regression Coefficient – Simple problems.

UNIT – IV

Curve fitting – Concept – Principles of Least Squares – Fitting of Straight line and Parabola.

UNIT – V

Probability – Definition, Probability Theorams – Addition Theoram, Multiplication Theoram – Probability Distribution – Binomial distribution, Normal distribution – Problems.

REFERENCES:

1. **S.P. Gupta –Statistical Methods, Sultan Chand & Sons, New Delhi.**
2. **Gregory .S. – Statistical Methods and the Geographer London 1963**
3. **Harmond and megullah – Quantitative Techniques in Geography.**
4. **Aslam Mahmood – Statistical Methods in Geographical Studies.**

SEMESTER IV **NON MAJOR ELECTIVE COURSE II**

DISASTER STUDIES

UNIT I

Principles of Disasters: Fundamentals of Disasters – Natural Disasters – Man-Made Disasters – Phases of Disaster.

UNIT II

Disaster Management: Definition of Disaster Management – Basic Concept and Methods used in Disaster Management – Models and Approaches.

UNIT III

Disaster Assessment: Risk and Vulnerabilities: Disaster Risk Management Process- Tools for assessing hazards, Vulnerability factors and analysis.

UNIT IV

Disaster Prevention: Need for Prevention of disaster risk, community based disaster management – role of public awareness – preparation of prevention and mitigation strategies.

UNIT V

Preparedness planning and policy initiatives: Key elements, issues and challenges in preparedness – Early Warning Systems – Damage Assessment – Policy for the reduction of disaster consequences.

REFERENCES:

1. **Comfort Louise K.(ed.) Managing Disasters: Strategies and policy perspectives, Durham. NC: Duke University Press.**
2. **Abbott, Patrick L., 1996, Natural Disasters, Wm. C. Brown Publishing Co., 438pp.**
3. **Coch. Nocholas K., 1995 Geohazards, Natural and Human, Prentice Hall, 481pp.**
4. **Murck, Barbara W., Brain J. Skinner, and Stephen C. Porter, 1997, Dangerous Earth. An Introduction to Geologic Hazards.**
5. **Skinner, Brain. J and Stephen C. Porter, 1995, The Dynamic Earth, An Introduction to Physical Geology, 3rd Ed., John Wiley & Sons, Inc.,**

SEMESTER V **CORE COURSE VII**

WORLD REGIONAL GEOGRAPHY

UNIT I

Meaning and Definition of Natural Regions – Major Natural Regions of the World – Location and Characteristics - Equatorial : Amazon and Ecuador.

UNIT II

Tropical Region: Monsoon Type, Tropical Grass lands, Tropical Desert Region and Caribbean Type.

UNIT III

Warm Temperate Region: Mediterranean Type, China Type and Temperate Desert Region.

UNIT IV

Cool Temperate Region: West European Type, St.Lawrence Type and Prairie Type.

UNIT V

Cool Temperate and Polar Regions: Coniferous and Tundra Type.

REFERENCES:

1. **Oliver H.Heintzelman, Richard M. Highsmith J.R (1965) – World Regional Geography, Printice Hall of India (P) Ltd, New Delhi.**
2. **Roger Minshull (1967) Regional Geography: Theory and Practice, Hutchinson University Library, London.**
3. **Khanna and Gupta – Economic and Commercial Geography.**

SEMESTER V **CORE COURSE VIII**

GEOGRAPHY OF RESOURCES

UNIT I

Resources –Definitions – Types: Renewable and non renewable Resources – Resources utilization – conservation of resources.

UNIT II

Agricultural: Production and Distribution of Rice, Wheat, Cotton , Jute, Sugarcane, Tea, Coffee and Rubber – Dairy Farming – Distribution and characteristics – Production and distribution of fisheries.

UNIT III

Power Resources – Types – Production and distribution of Coal, Oil, Hydroelectric Power and Atomic Power – Non-conventional energy resources – Mineral Resources – Iron ore, Bauxite, Gold and Manganese.

UNIT IV

Manufacturing Industries: Location factors of Industries – Distribution of Iron and Steel Industries – Cotton Textiles – Sugar Industries – Chemical, Aircraft, Automobiles and Ship Building.

UNIT V

Transportation and Trade: Importance – Different modes of Transport – Development of land, water and air transport – International Trade – Trade Balance – International Trading Organization – Recent Development .

REFERENCES:

1. **Coh Cheng Leong – Economic and Human Geography, Oxford University Press, New Delhi.**
2. **Clawson Marion (Ed) Natural Resources and International development. New York.**
3. **S.K. Sadhukhan (1994) Economic and Geography an Appraisal of Resources, S.Chand & Co., Chennai.**
4. **K.Khanna & V.K. Gupta (1998) Economic and Commercial Geography Sultan Chand & Sons, New Delhi.**

SEMESTER V **CORE COURSE IX**

GEOGRAPHY OF INDIA

UNIT I

Location – Major Physiographic Division – Drainage System – Climate – Soil and types – Natural Vegetation.

UNIT II

Irrigation: types – Multi Purpose Projects – Distribution, Characteristics and Problems of Indian Agriculture – Production of Major Crops: Rice, Wheat, Sugarcane, Cotton, Jute, Coffee and Tea.

UNIT III

Distribution and Production of Mineral Resources – Iron ore, Manganese, Bauxite, Mica and Copper. Fuel Resources – Coal, Petroleum, Natural Gas. Power Resources – Hydel, Thermal and Nuclear.

UNIT IV

Location and Distribution of Major Industries: Iron and Steel, Cotton Textiles, Sugar, Cement, Automobiles and Ship Building.

UNIT V

Population: Distribution, Density and Growth – Literacy Rate – Population Problems. Transport: Road, Rail and Air Transportation. Major Ports – Trade.

REFERENCES:

1. **Singh Gopal (1970) – Geography of India, Atmaram & Sons, New Delhi.**
2. **Spate, O.H.K and Learmonth A.T.A., 1954 – India and Pakistan – Methues & Co., India.**
3. **Arunachalam.B (1996) – Economic Geography of India – Bombay.**
4. **Sharma (1998) – Economic and Commercial Geography of India, Vikas Publishing House Private Limited – New Delhi.**
5. **Tiwari, (2002), Geography of India, Prayag Pustak Bhawan, Allahabad.**

SEMESTER V **CORE COURSE X**

BIOGEOGRAPHY

UNIT I

Definition , Scope and Significance of Biogeography – Basic Ecological Principles: Darwin's Theory of Evolution – Concepts of Biome, Ecotone and Community.

UNIT – II

Origin of Fauna and Flora – Plant and Animal evolution through Geological times – Distribution of Plant life on Earth and its relation to Soil types, Climates and Human Practices.

UNIT – III

Problems of extinction of plant and animal life – Habitat decay and their conservation – desertification, consequences and management. Industrial effluent and its effect on fresh water biology and management practices (Special Reference to India).

UNIT –IV

Major Biomes – Tropical Forest – Tropical Grassland – Temperate Grassland and Tropical Deserts.

UNIT – V

Study of Ecological regions of Himalayas and the Western Ghats in relation to their Plant and Animal life, their interrelations, Problems, Conservation and Management Measures.

REFERENCES:

1. **Robinson. H – Biogeography, ELBS: McDonald and Evana, London – 1982.**
2. **Nigel Pears – Basic Biogeography, Longman, London and New York – 1985.**
3. **Newbegin.I – Plant and Animal Geography – Retheran – U.K.**
4. **Saxena.H.M. – Environamantal Geography, Rawat, Jai**

SEMESTER V **MAJOR BASED ELECTIVE COURSE I**

GEOGRAPHY FOR COMPETITIVE EXAMINATIONS

UNIT – I

General Geography : Solar System – Rotation and Revolution of the Earth, Eclipses, Latitudes and Longitudes, Time zones and Facts of International Data Line Continents and Oceans.

UNIT – II

Physical Geography : Major Landforms – Mountains, Plateaus and Plains Erosional and Depositional Features : 1) River , 2) Glacier, 3)Wind.

UNIT – III

Climatology : Weather and Climate Elements of climate Atmosphere Composition & Structure – Temperature, Pressure, Wind, Humidity – Types of Precipitation.

UNIT – IV

Oceanography : Land and Sea Distribution Morphology of Ocean – Bottom Continental Shelf, Slope, Trenches and Deeps – Waves, Tides, Currents Relief features Deposits.

UNIT - V

Population of India: Density, Growth, Birth & Death Rate, Literacy.
Settlements: Site and Situation, Rural & Urban settlements, Urbanization Problems.

REFERENCES:

1. **N.Tikka(1998): Physical Geography, Kedar Nath, Ram Nath, Meerut.**
2. **P.Dayal(1995): Text book of Geographology, Shukla Book Depot, Patna.**
3. **Glen. T, Trewarthyaq and Hom.L.A. An Introduction to Climate, Megrow Hill Ltd, Looms New York.**
4. **D.S>Lal(1998): Climatology, Chaitanya Publishing House, Allahabad.**
5. **Dr.K.Kumarasamy er.al Climatology (Tamil Edition)**
6. **Critichfieldl. H: General Climatology – Prentice Hall of India Pvt., New Delhi.**

SEMESTER VI **CORE COURSE XI**

PRACTICAL III – MAP PROJECTION AND SURVEYING

UNIT I

Map Projection – General Principles – Classification – Identifications – Transformation – Choice of Projections.

UNIT II

Construction, Properties, Limitations and uses of the following projections: Conical : One Standard, Two Standard, Bonne's and Polyconic.

UNIT III

Construction, Properties, Limitations and uses of the following projections: Zenithal : Gnomonic, Stereography, Orthographic, Equidistant, Equal Area (Polar Cases only) Conventional : Sinusoidal, Mollweide's (Normal Cases only), Sinusoidal interrupted and Mollweide interrupted.

UNIT IV

Surveying : Simple exercises using

1. **Chain**
2. **Prismatic Compass**
3. **Plane Table**
4. **Dumpy Level**
5. **Indian Clinometer,**
6. **Abney Level.**

REFERENCES:

1. **Kellaway George. P: Map Projections – Methuen &Co. – London.**
2. **Streets,.J.A. – Map Projections, University London Press, London.**
3. **R.L. Singh – Practical Grohtsphy – Kalyani Publishers, New Delhi.**
4. **Jayachandran.S – Practical Geography (Tamil Edition).**
5. **Khan – Text Book of Practical Geography.**
6. **Khulla – Elements of Practical Geography – Kalyani Publications.**

SEMESTER VI **CORE COURSE XII**

GEOGRAPHY OF TAMIL NADU

UNIT I

Location – Major Physiographic Division – Drainage System – Climate – Soil and types – Natural Vegetation.

UNIT II

Irrigation: types – Agriculture: Production and Distribution of Rice and Sorghum – Bajra and Pulses – Groundnut and other Oil seeds – Sugarcane and Cotton. Fisheries – Livestock – Dairy development – Poultry development.

UNIT III

Distribution and Production of Mineral Resources – Iron ore, Manganese, Bauxite, Mica and Copper. Fuel Resources – Coal, Petroleum, Natural Gas. Power Resources – Hydel, Thermal and Nuclear.

UNIT IV

The industrial scene: Cotton textile – Handloom and Power Loom industry – Dyeing Industries – production of Silk Textiles – Chemical and Fertilizer industries – Production of two wheelers – Four Wheelers – Body building industries – Industrial locations.

UNIT V

Population: Distribution, Density and Growth – Literacy Rate – Population Problems. Transport: Road, Rail and Air Transportation. Major Ports – Trade.

REFERENCES:

1. **Basic resources Atlas of Tamil Nadu Pub: University of Madras**
2. **Tamil Nadu Economic Appraisal Pub: Finance Department Govt. of Tamil Nadu**
3. **A Geography of India – Gopal Singh**
4. **Publications of Tamil Nadu Text Book Society, Madras**

SEMESTER VI **CORE COURSE XIII**

PRACTICAL IV-INTERPRETATION OF TOPOSHEETS, AERIAL PHOTOS AND IAGERIES

UNIT – I

Study of conventional symbols used in Indian topographical maps – Marginal Information of India topographical maps – Interpretation of Indian topographical maps.

UNIT – II

Comparative study of Marginal Information of Topographical sheets, Aerial Photographs and Satellite Imageries.

UNIT – III

Aerial Photographs – Types – Elements of Photo Interpretation – Aerial Photo Interpretation of Physical and Cultural features.

UNIT – IV

Satellite Imageries – Image Interpretation of Physical and Cultural features.

REFERENCES:

1. **Raghunandar Singh (1965), Map Work and Practical Geography, Central Book Depot, Allahabad.**
2. **Singh R.L. and Rana P.B. Singh (1998) Elements of Practical Geography, Kalyani Publishers, New Delhi, Ludhians.**
3. **Negi B.S. (1998) Practical Geography Geography, Kedarnath and Ramnath, Meerut.**
4. **G.H. Dory – Map Interpretation – Sir Issue Pitman & Sons Ltd. – London.**

SEMESTER VI **MAJOR BASED ELECTIVE COURSE II**

GEOINFORMATICS

UNIT I

Remote Sensing : Definition, Types-Aerial, Satellite. Historical Development, Active and Passive Remote Sensing, Platforms, Geostationary and Sun Synchronous orbits, Uses of Remote Sensing.

UNIT II

Electro Magnetic Radiation: Electromagnetic Radiations, Scattering of EMR, Spectral signatures, Energy interaction with atmosphere, Earth Surface features (Water, Soil and Vegetation).

UNIT III

Remote Sensing Sensors: Classification of Sensors & Platform Characteristics of LAND SAT, SPOT, IKONOS, Active and Passive sensors, and IRS.

UNIT IV

GIS – Definition – Components – DBMS – Vector and Raster models – Spatial Data Input and Editing - GIS analysis – Queries, Buffering, Overlay and Neighbourhood functions.

UNIT V

Applications of RS, GIS and GPS - Resource Mapping – Land and Water Resources, Urban Studies, Disaster Management and Land use Planning.

REFERENCE BOOKS:

1. **Lillesand T.M. and R.W. Kiefer 1987 Remote Sensing and lmage Interpretation John Wiley & Sons. New York.**
2. **Arthur Carcknell Ladson Hayes September 1991, Introduction to Remote Sensing, Taylor & Francis.**
3. **Eric C.Barrett, Anton Micallef., October 1991, Remote Sensing for Hazard Monitoring and ;Disaster Assessment: Marine and Coastal Application in the Mediterranean Region, Gprdpm & Breach Science Publication.**
4. **Floyd F. Sabins August 1997, Remote Sensing: Principles of Interpretation. W. H.Freeman & Co.**

SEMESTER VI **MAJOR BASED ELECTIVE COURSE III**

AGRICULTURAL GEOGRAPHY

UNIT I

The origin of Agriculture – Geographical factors influencing Agriculture : Physical, Cultural, Social and Economic factors – Agriculture and soil: Soil Classification – Erosion and Conservation – Irrigation, Types and Methods and the need.

UNIT II

Global patterns of farming systems, simple subsistence farming – migratory, sedentary, intensive and extensive, mechanized grain farming – plantation – commercial.

UNIT III

Agricultural crops: Rice, Wheat. Beverage crops: Tea and Coffee – Industrial crops: Cotton and Jute. Cash crops: Sugar cane and Tobacco.

UNIT IV

Agricultural regions: Methods of Delineation – agricultural regions of the World – Agricultural region of India and their characteristic features.

UNIT V

Vonthunen's Theory of agricultural location and its recent modifications.

REFERENCES:

1. **Morgan W.B. and Munton R.Jc(1971) Agricultural Geography, Methuen, London.**
2. **Majid Hussain (1971) Agricultural Geography, Inter-India Publications, Delhi.**
3. **Coh Cheng Leong, Human and Economic Geography, Oxford University Press, Kolalumphur.**
4. **Misra. R.P.(1986) Agricultural Geography, Heritage Publishers, New Delhi.**
5. **Ali Mohammed (1978) Studies in Agricultural Geography, Rajesh Publications, New Delhi.**
6. **Gregor and Howard F (1979) Geography of Agriculture: Themes in Research Printice Hall, New Jersey.**