

**RADHA GOVIND UNIVERSITY, RAMGARH**

**DEPARTMENT OF GEOGRAPHY**

**UNDERGRADUATE (B.A Hons.) COURSES OF STUDY**

*UNDER  
CHOICE BASED CREDIT SYSTEM (CBCS)  
INTRODUCED FROM SESSION 2018-21*

**ESTD. 2018**

**SYLLABUS FOR B.A GEOGRAPHY  
UNDER CHOICE BASE CREDIT SYSTEM  
UNDER RADHA GOVIND UNIVERSITY,  
RAMGARH**

<p style="text-align: center;"><b><u>SEMESTER I</u></b></p> <p><b>CORE I- INTRODUCTION TO GEOGRAPHY</b>  <b>CORE II- GEO-TECTONICS AND GEOMORPHOLOGY</b>  <b>CORE I &amp; II- PRACTICAL</b>  <b>GENERIC</b>  <b>AECC-ENGLISH/HINDI</b></p>	<p style="text-align: center;"><b><u>SEMESTER II</u></b></p> <p><b>CORE III- CONTEMPORARY ISSUES IN GEOGRAPHY</b>  <b>CORE IV- CLIMATOLOGY AND OCEANOGRAPHY</b>  <b>CORE III &amp; IV-PRACTICAL</b>  <b>GENERIC-</b>  <b>AECC-</b></p>
<p style="text-align: center;"><b><u>SEMESTER III</u></b></p> <p><b>CORE V- BIOGEOGRAPHY</b>  <b>CORE VI- GEOGRAPHY OF INDIA</b>  <b>CORE VII- GEOGRAPHY OF JHARKHAND</b>  <b>CORE V,VI&amp;VII-PRACTICAL</b>  <b>GENERIC-</b>  <b>SEC I-</b></p>	<p style="text-align: center;"><b><u>SEMESTER IV</u></b></p> <p><b>CORE VIII- GEOGRAPHY OF THREE NORTHERN CONTINENTS</b>  <b>CORE IX- GEOGRAPHY OF THREE SOUTHERN CONTINENTS</b>  <b>CORE X- GEOGRAPHY OF TRAVEL AND TOURISM</b>  <b>CORE VIII,IX&amp;X- PRACTICAL</b>  <b>GENERIC</b>  <b>SEC II-</b></p>
<p style="text-align: center;"><b><u>SEMESTER V</u></b></p> <p><b>CORE XI- HUMAN GEOGRAPHY-</b>  <b>CORE XII- ECONOMIC GEOGRAPHY</b>  <b>CORE XI &amp; XII-PRACTICAL,</b>  <b>DSE I- POPULATION GEOGRAPHY</b>  <b>DSE II- AGRICULTURAL GEOGRAPHY</b>  <b>DSE I &amp; II-PRACTICAL</b></p>	<p style="text-align: center;"><b><u>SEMESTER VI</u></b></p> <p><b>CORE XIII- ENVIRONMENTAL GEOGRAPHY</b>  <b>CORE XIV- REGIONAL DEVELOPMENT AND PLANNING</b>  <b>CORE XIII &amp; XIV-PRACTICAL,</b>  <b>DSE III- SOCIAL GEOGRAPHY</b>  <b>DSE IV- POLITICAL GEOGRAPHY</b>  <b>DSE III &amp; IV – PRACTICAL</b></p>

## **Part I- First Semester-Total 20 credits**

**Paper -1, CORE 1 (Theory) – Introduction to Geography - 5 Credits** (Teaching 5 hours per week and minimum 60 teaching hours). FM: 75

**Module-I:** Nature and Scope of Geography; Geography as a science; place of Geography in classification of Sciences, concept of space and concept of landscape (Regional & cultural)

**Module-II:** Geography in Ancient (Greek, Rome and India) and Medieval Period; Development of Geography in Modern Period (German School, French School, British School and American School), Contribution of Humboldt, Ritter, Ratzel, Blache and Hartshorne to Geography.

**Module-III:** Methods and Technique in Geography- Quantitative, Behaviourial, Radical, Humanistic, and Environmental; Remote sensing, GIS, GPS and Computer Cartography, Trends in Geography in Renaissance Period.

**Module-IV:** Geographical Knowledge and people-Career in Geography, Noted Indian Geographers who contributed to Development of India, Man-Environment Relationship, welfare Geography, Gender Geography in Modern Times in Indian context.

**Paper -2, CORE 2 (Theory) GEO-TECTONICS AND GEOMORPHOLOGY -5 Credits** (Teaching 5 hours per week and minimum 60 teaching hours). FM: 75

### **Unit I: Geo-tectonics**

Origin of the Earth with particular reference to Big Bang Theory; Geological time scale and related topographic and structural evolution; Isostasy: Airy and Pratt; Folds and Faults—origin, types and their topographic expressions; Plate Tectonics: plate tectonic processes--sea floor spreading, subduction, orogenesis, earthquake and vulcanicity.

### **Unit II: Geomorphology**

General Degradational Processes: Processes of rock weathering and their effects on landform; Fluvial processes and landforms; Glacial processes and landforms; fluvio-glacial landforms; Aeolian processes and landforms; fluvio-aeolian processes

### **Unit III: Geomorphology and Structure**

Basic concepts of Geomorphology; Landforms on granite and basalt; Landforms on limestone; Development of river network and landforms on uniclinal and folded structures.

### **Unit IV: Theories of Geomorphology**

Normal cycle of erosion by W.M.Davis; Views of W. Penck on normal cycle of erosion; Cycle of Pediplanation by L.C.King; Dynamic Equilibrium theory by J.T. Hack

**Paper 3, CORE 1 & 2 Practical, 2 Credits** (Teaching 4 hours per week and minimum 48 teaching hours). F.M. 50

**Practical**

(A) Construction of scale: simple, diagonal and comparative; 10 - Marks

(B) Isopleth, Slope Analysis-Smith; drainage density, drainage hierarchy.

10-Marks

(C) Bloc diagram, sinuosity index, river profile, interpretation of topographical maps (relief, drainage). 10-Marks

(D) Village Survey with the help of village map allotted by HOD.

10-Marks

(E) PNB+Viva-Voce.

10- Marks

**Paper 4, Generic Elective (GE-1) Theory , 5 Credit, FM 75 (to be opted by candidates from disciplines other than Geography)**

**Disaster Management**

Module - I. Disasters: Definition and Concepts: Hazards, Disasters; Risk and Vulnerability; Classification

Module- II

Disaster in India: (a) Flood: Causes, Impact, Distribution and Mapping; Landslide: Causes, Impact, Distribution and Mapping; Drought: Causes, Impact, Distribution and Mapping

Module-III

Disaster in India: (b) Earthquake and Tsunami: Causes, Impact, Distribution and Mapping; Cyclone: Causes, Impact, Distribution and Mapping; Manmade disasters: Causes, Impact, Distribution and Mapping

Module -IV

Response and Mitigation to Disasters: Mitigation and Preparedness, NDMA and NIDM; Indigenous Knowledge and Community-Based Disaster Management; Do's and Don'ts During Disasters

**Paper 5, Generic Elective (GE-1) Practical, 1 Credit, FM 25 (to be opted by candidates from disciplines other than Geography)**

Project Work/Report on relevant topics pertaining to Disaster Management, preferably on any Major Disaster in World (Natural or Man Made). **15 Marks**

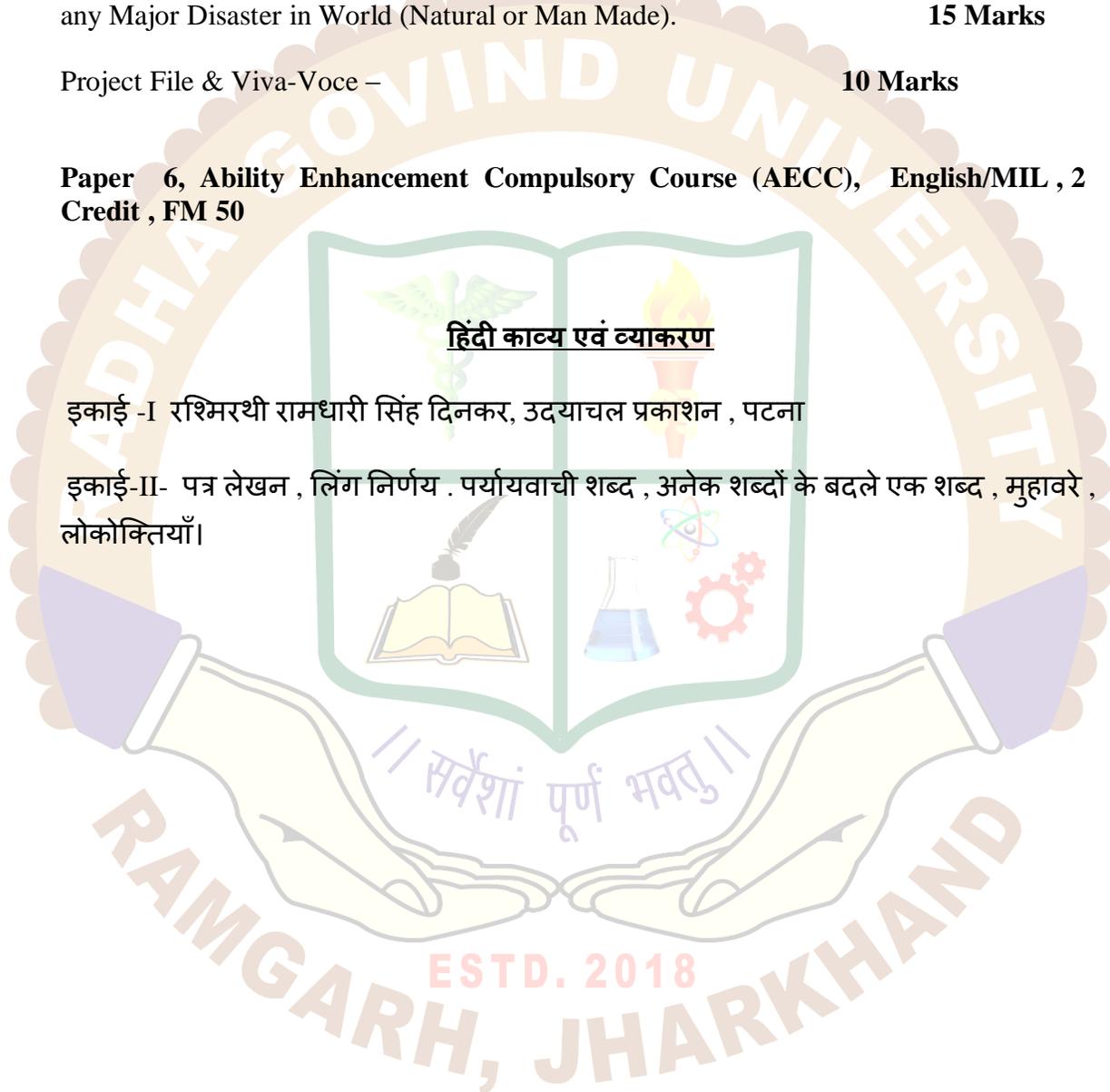
Project File & Viva-Voce – **10 Marks**

**Paper 6, Ability Enhancement Compulsory Course (AECC), English/MIL , 2 Credit , FM 50**

**हिंदी काव्य एवं व्याकरण**

इकाई -I रश्मि रथी रामधारी सिंह दिनकर, उदयाचल प्रकाशन , पटना

इकाई-II- पत्र लेखन , लिंग निर्णय . पर्यायवाची शब्द , अनेक शब्दों के बदले एक शब्द , मुहावरे , लोकोक्तियाँ।



## Second Semester –Total 20 Credits

**Paper -1, CORE 3 (Theory), Contemporary Issues in Geography - 5 Credits**  
(Teaching 5 hours per week and minimum 60 teaching hours). FM .75

### Unit I

Introduction to Contemporary issues in Geography: Meaning and definition of contemporary issues; Nature of contemporary issues in Geography; Importance of study of contemporary issues in Geography

### Unit II

Physical (Geomorphic/Climatic/Oceanic/Biological) issues:

Causes and effects of

- a. Landslides; Weathering; Earthquakes;
- b. Floods; Droughts; Cyclones; Ozone depletion; Global warming and climate change
- c. Tsunamis; El Nino and La Nina; Marine pollution
- d. Deforestation; Forest fire; Epidemics; Watershed Management

### Unit III

Human (Population/Economic/Social/Political):

Causes and effects of

- a. Over population; Migration; Energy crisis; Urbanization
- b. Poverty; Globalization and Liberalization; Regional disparity; Exploitation of resources
- c. Terrorism; Conflicts due to race, religion and caste; HIV/AIDS; Unemployment
- d. Wars and Extremists Activity; Infiltration in India; Oil Politics; Water politics; Nuclear weapons

### Unit IV

Modern theme in Geography:

- a. Applied Geography, Sustainable Development and Globalisation
- b. Climate Change, Global Warming and International Efforts and Response
- c. Basic indicators of human and gender development; Social inequality as constraint of development
- d. Population growth, Malnutrition, Food security and Hunger, Morbidity and Mortality

**Paper 2, CORE 4 (Theory) Climatology and Oceanography - 5 Credits (Teaching 5 hours per week and minimum 60 teaching hours). FM .75**

**Unit-I**

Atmosphere- Structure, Composition; Insolation, Heat balance, Inversion of temperature, Factors affecting the horizontal distribution of temperature-Horizontal distribution of temperature. Atmospheric pressure- Vertical and Horizontal distribution- Thermal and dynamic origins pressure gradient, Monsoon

**Unit -II**

Wind-General circulation, planetary winds, Seasonal winds, Local winds, Seasonal changes in circulation-El Nino- La Nina-SO. Air masses- lapse rates, Fronts. Jet stream. Koppen's Climatic Classification, Factors of climate change, Extreme weather- Cold and Heat wave, classification of world climate

**Unit -III**

General distribution of land & sea, Hypsographic curve, zones of ocean bottom according to depth, Continental shelf, Continental slope, Deep sea plain & Ocean deeps.

Bottom relief of Atlantic & Indian oceans, Horizontal & Vertical distribution of temperature in oceans. Oceanic Routes, Planktons.

**Unit - V**

Composition of sea water- salinity-Horizontal distribution in open ocean, Enclosed & partially enclosed sea. Oceanic circulation, factors controlling Oceanic circulation in Atlantic & Indian oceans.

Waves & Tides; Tide producing forces, types of tide, Deposits on ocean floor; Terrigenous & Pelagic deposits, Distribution; Coral reefs.

**Paper 3, CORE 3 &4 Practical , 2 Credits** (Teaching 4 hours per week and minimum 48 teaching hours). F.M. 50

Contemporary Techniques in Geography (Pr.) 50 Marks

(A) Natural Hazards and their Management in the Indian Sub-continent (20 Marks)

A.1 Preparation and interpretation of Ombrothermic charts or Rainfall dispersion diagram (based on IMD data)

Preparation of Station models for different meteorological stations of India with the help of synoptic chart

Preparation and interpretation of Rating curves, Hydrographs and Unit hydrographs of rivers flowing through the Indian sub-continent

Hazard Mapping: Identification and zoning of the following hazards, collation of maps and their interpretation: i) Meteorological drought ii) Flood iii) River bank erosion

(B) Economic and Human Development in Third World (20 Marks)

Computation of Human and Gender Development Index and ranking of countries/states/districts based on HDI and GDI

Preparation of Questionnaire and Survey schedule for assessment of development and for perception study

Measures of spatial and size class distribution: i) Rank size rule ii) Lorenz curve

(C) Practical Note Book and Viva Voce (5+5)

**Paper 4, Generic Elective (GE-2) Theory, 5 Credit, FM 75 (to be opted by candidates from disciplines other than Geography)**

## **Rural Development**

### **Unit-I**

Defining Development: Inter-Dependence of Urban and Rural Sectors of the Economy; Need for Rural Development, Gandhian Concept of Rural Development.

### **Unit -II**

Rural Economic Base: Agriculture and Allied Sectors, Seasonality and Need for Expanding Non-Farm Activities

### **Module-III**

Area Based Approach to Rural Development: Drought Prone Area Programmes, PMGSY.

### **Unit -IV**

Target Group Approach to Rural Development: SJSY (Integrated Rural Development Programme). Provision of Services – Physical and Socio-Economic Access to Elementary Education and Primary Health Care and Micro credit

**Paper 5, Generic Elective (GE-2) Practical, 1 Credit, FM 25 (to be opted by candidates from disciplines other than Geography)**

Project Work/Report on relevant topics pertaining to Rural Development in India, preferably, on any Flagship Programme of the Government of India or the State Government (Jharkhand). **15 Marks**

Project File & Viva-Voce –

**10 Marks**

**Paper 6, Ability Enhancement Compulsory Course (AECC), Environmental Science, 2 Credit , FM 25**

## SECOND YEAR- Third Semester-Total 26 Credits

**Paper 1, CORE 5 (Theory) – Biogeography -5 Credits** (Teaching 5 hours per week and minimum 60 teaching hours). FM .75

### Unit -I

Definition, scope & importance of Bio Geography relation with other sciences, Development of Bio Geography-views of different Geographers; Hydrological cycle.

### Unit -II

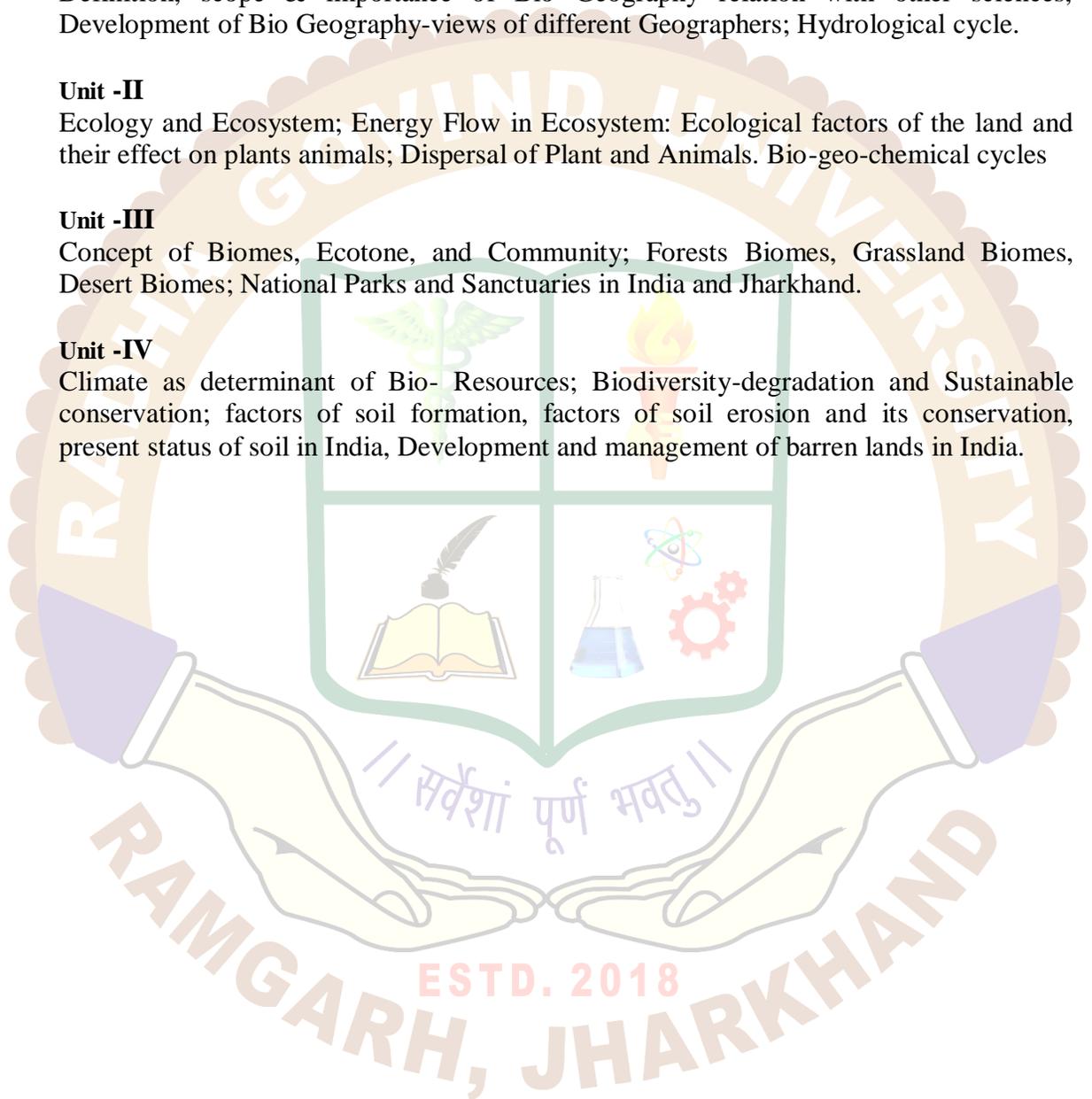
Ecology and Ecosystem; Energy Flow in Ecosystem: Ecological factors of the land and their effect on plants animals; Dispersal of Plant and Animals. Bio-geo-chemical cycles

### Unit -III

Concept of Biomes, Ecotone, and Community; Forests Biomes, Grassland Biomes, Desert Biomes; National Parks and Sanctuaries in India and Jharkhand.

### Unit -IV

Climate as determinant of Bio- Resources; Biodiversity-degradation and Sustainable conservation; factors of soil formation, factors of soil erosion and its conservation, present status of soil in India, Development and management of barren lands in India.



**Paper 2, CORE 6 (Theory) – Geography of India-5 Credits** (Teaching 5 hours per week and minimum 60 teaching hours). FM .75

**Unit-I**

India; Structure and Physiography, Drainage (Peninsular and Extra Peninsular) Climate and Climatic Regions. Edaphic and Biotic regions of India; Indian Forests and their Economics importance.

**Unit-II**

Agriculture systems in India, Cropping patterns in India, divide India into intensive agriculture; Agricultural regions (as per ICAR); Green revolution and its consequences. Industries: Cotton, Sugar, Mineral based; Iron and steel, granite industries in Jharkhand. Transport: Surface, water & Air- Foreign Trade.

**Unit -III**

Minerals: Distribution of Iron ore, Bauxite, Manganese, Atomic Minerals. Power Resources- Coal, Petroleum, wind energy in India, Region of Geography: Middle Ganga and Lower Ganga, and Chhotanagpur Plateau.

**Unit-IV**

Studies of Geographical Problems

Problems of unreliability of rainfall; Problems of soil salinity and its mitigation; Problems of development (Land Acquisition), displacement and rehabilitation; Problems of slum and urban rehabilitation in India.

**Paper 3, CORE7 (Theory) – Geography of Jharkhand -5 Credits** (Teaching 5 hours per week and minimum 60 teaching hours). FM .75

**Unit-I**

Physiography and Relief, Drainage Pattern, Forest Resource and its Economic importance.

**Unit -II**

Agriculture: Irrigation- Types and distribution, Major crops- Food Crops; Population growth and distribution: Population composition-Sex, Age, Religious.

**Unit -III**

Resources: Natural resources-Soil, Water, Mineral resources: Coal Uranium- Distribution & development, Conventional and Non-conventional energy resources, Major Hydel Power Projects-Thermal Power Plants.  
Industries: Location factors-Distribution of Iron and steel, Cement.

**Unit -IV**

Educational Development and structure of Education in Jharkhand.  
House types of Munda Villages in South Chhotanagpur.  
Transport Roads and railways and development of Tourism, Eco-tourism in Jharkhand.  
Economy and habitats of Santhals, Oraons.  
Social, Economic and Environmental Problems of Jharkhand.

**Paper 4, CORE 5, 6 & 7 Practical, 3 Credits** (Teaching 6 hours per week and minimum 72 teaching hours). F.M. 75

- (A) Instrumental Survey-i Plain Table Survey- Radiation and Intersection. ii- Prismatic Compass Survey – Open Traverse and Closed Traverse Survey, Allotted area in Jharkhand region. 20-Marks
- (B) Population Projection of Jharkhand, Ring Diagram for Urban Population, Cube Diagram. Sources of data; classification and Tabulation of data. Measures of central tendency: mean, median and mode, and quartile. 10-Marks
- (C) Geological Sheet (Minimum 6 sheets). 10-Marks
- (D) PNB+ Viva-Voce 10-Marks

**Paper 5, Generic Elective (GE-3) Theory, 5 Credit, FM 75 (to be opted by candidates from disciplines other than Geography)**

### **Climate Change: Vulnerability and Adaptation**

#### **Unit-I**

Science of Climate Change: Understanding Climate Change; Green House Gases and Global Warming; Global Climatic Assessment- IPCC

#### **Unit -II**

Climate Change and Vulnerability: Physical Vulnerability; Economic Vulnerability; Social Vulnerability

#### **Unit-III**

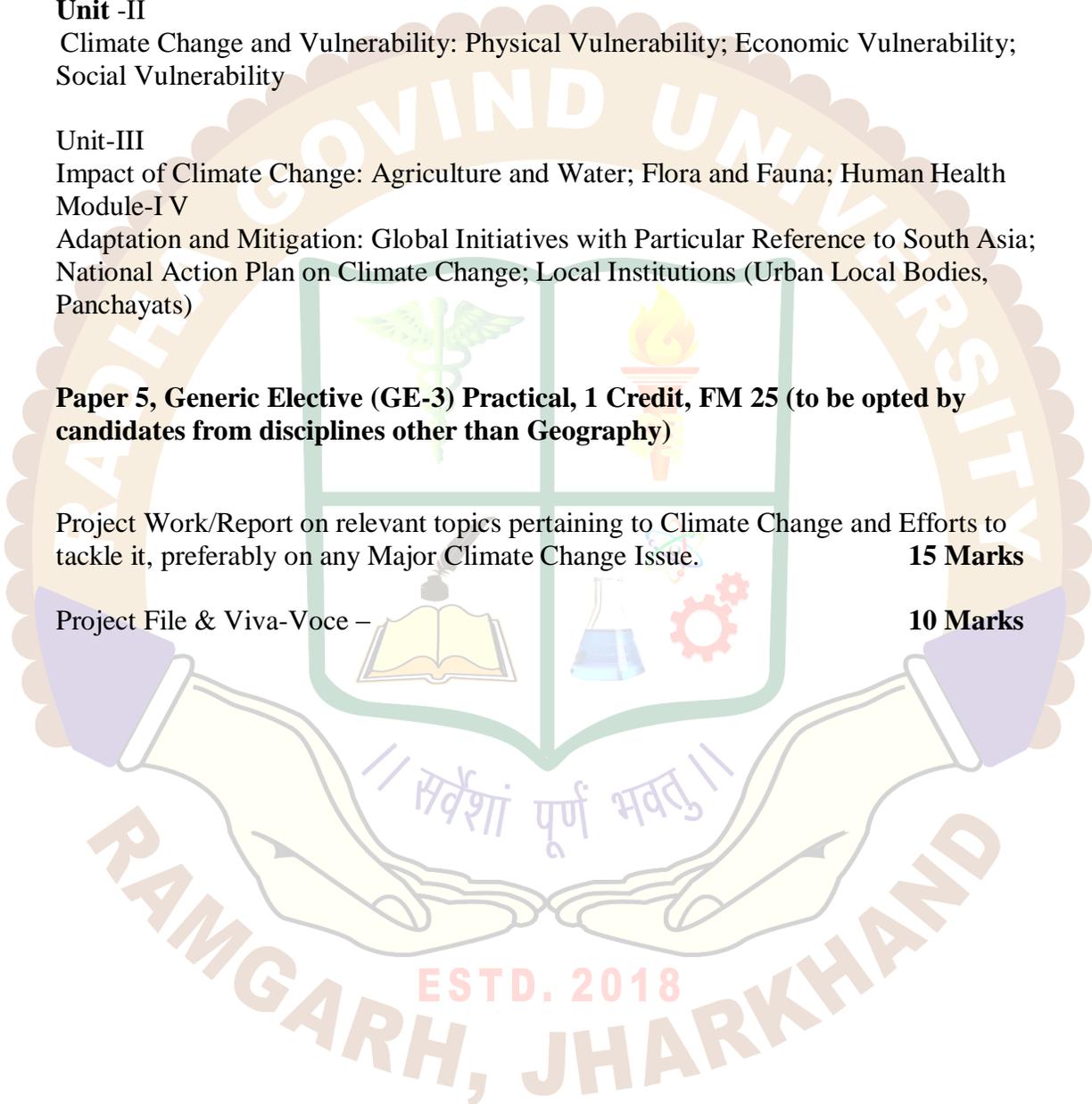
Impact of Climate Change: Agriculture and Water; Flora and Fauna; Human Health  
Module-I V

Adaptation and Mitigation: Global Initiatives with Particular Reference to South Asia; National Action Plan on Climate Change; Local Institutions (Urban Local Bodies, Panchayats)

**Paper 5, Generic Elective (GE-3) Practical, 1 Credit, FM 25 (to be opted by candidates from disciplines other than Geography)**

Project Work/Report on relevant topics pertaining to Climate Change and Efforts to tackle it, preferably on any Major Climate Change Issue. **15 Marks**

Project File & Viva-Voce – **10 Marks**



**Paper 7. Skill Enhancement Course (SEC-1), 2 Credits, FM 25**

**Skill Enhancement Course – Introduction to Maps and Scales**

**Introduction to Maps and Scales**

**Module I**

Elements of Maps; Scales – types- simple, diagonal and comparative and conversions; Types of Maps – Topographical Maps, Weather Maps, Thematic Maps; Methods of Representation – Qualitative and Quantitative

**Module II**

Heritage of Mapping in India

Mughal Period – Contribution of Raja Todar Mal

Colonial Period – The Great Triangulation Survey

Modern Period – Satellite Systems based Mapping

Mapping Organisations – Survey of India, Geological Survey of India, National Atlas and Thematic Mapping Organisation

**Module III**

Art and Science of Map Making

Projections – Concepts, Terminologies and Classification

Construction of Graticules – Principles; Planar Case – Polar Zenithal Stereographic Projection; Cylindrical Case – Cylindrical Equal Area; Conical Case – Simple Conical Projection with One Standard Parallel

**Module IV**

Mapping Techniques and Technologies: Data Mining and Mapping ; Visualisation of Themes – Bar Diagrams, Pie Diagrams, Isoleth Maps, Choropleth Maps; Satellite Imaging Systems; Digital Images and Maps; Using Open Source Geospatial Datasets – Google Earth and Wikim

## Fourth Semester-Total 26 Credits

**Paper 1, CORE 8 (Theory) – Geography of Three Northern Continents -5 Credits**  
(Teaching 5 hours per week and minimum 60 teaching hours). FM .75

### **Unit-I**

North America:

Relief of North America, Natural Vegetation, Population of North America, Cotton textile Industry and Iron- Steel Industry, Water route of great lakes and Panama route.

### **Unit-II**

Europe: Physiographic division of Europe, Climate important, Demographic pattern of Europe, Industrial Development and reasons, Oceanic routes of Europe.

### **Unit-III**

Asia: Physiography, soils, population-Distributional factors of population, Agriculture development Geographical account of SAARC Nations.

### **Unit-IV**

Location of Iron and steel Industry in U.S.A and U.K, wheat belt of Columbia basin. Coal resources of Europe, Regional Study of United Kingdom & British Island, Japan and USA.



**Paper 2, CORE 9 (Theory) – Geography of Three Southern Continents -5 Credits**  
(Teaching 5 hours per week and minimum 60 teaching hours). FM .75

**Unit-I**

South America: Physiography, Agriculture and demographic set-up and Regional studies of Brazil.

**Unit-II**

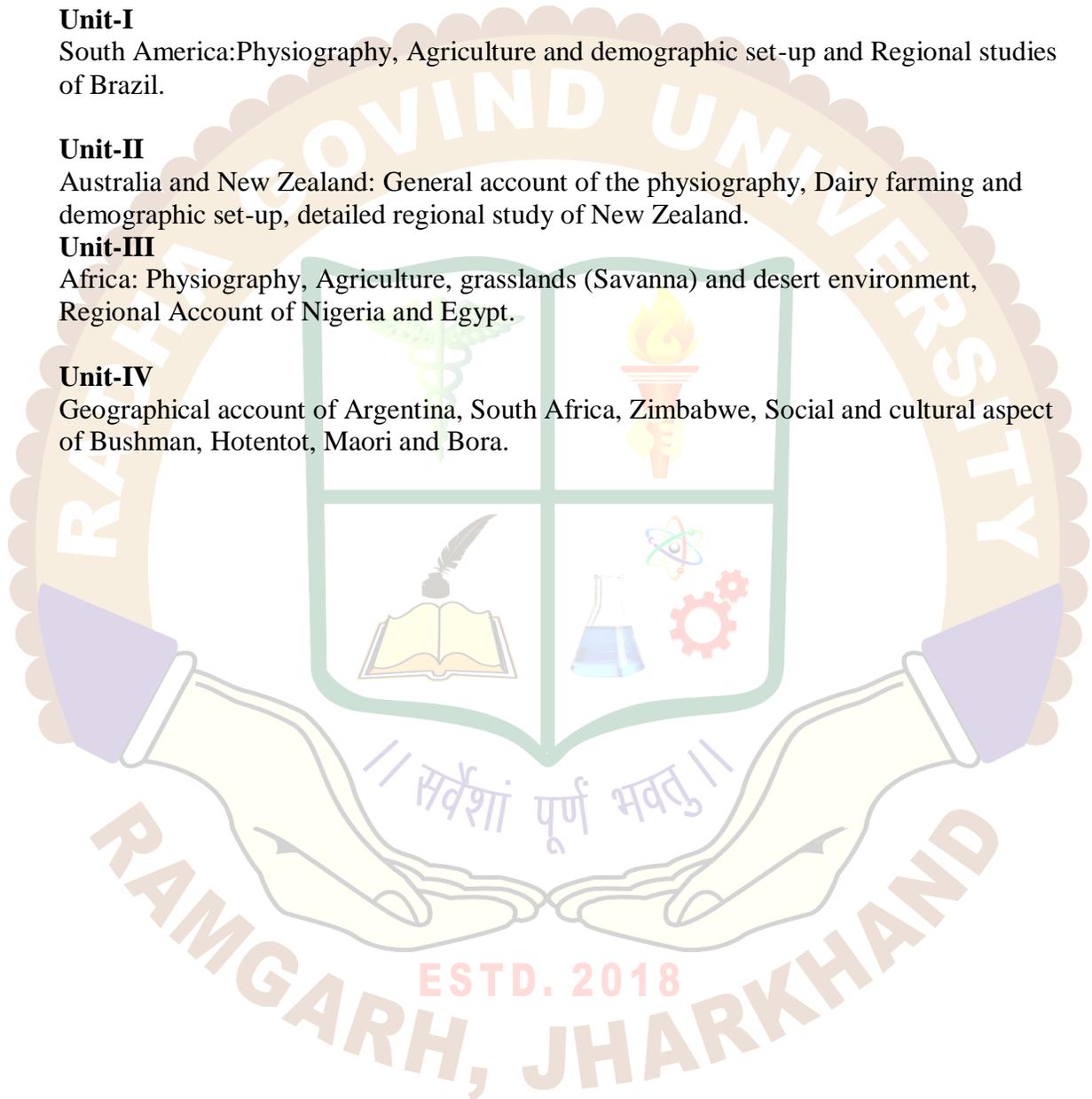
Australia and New Zealand: General account of the physiography, Dairy farming and demographic set-up, detailed regional study of New Zealand.

**Unit-III**

Africa: Physiography, Agriculture, grasslands (Savanna) and desert environment, Regional Account of Nigeria and Egypt.

**Unit-IV**

Geographical account of Argentina, South Africa, Zimbabwe, Social and cultural aspect of Bushman, Hotentot, Maori and Bora.



**Paper 3, CORE 10 (Theory) – Geography of Travel and Tourism-5 Credits** (Teaching 5 hours per week and minimum 60 teaching hours). FM .75

### **Unit – I**

Nature and Scope: Definition and Nature ;Scope and Extent; Concept of tourism-Factors affecting Tourism Development- Physical & Cultural

### **Unit – II**

Classification of tourists: (A) Nationality- International;Domestic.

(B) Time of Travel- Long haul, short haul, holiday tourists, day trippers.

(C) Travel Distance Global, continental, Regional and local. -

(D) Number of Tourists- Individual and groups.

(E) Purpose- Recreation, Heritage, Nature, Religious, Health, Sports.

Role of Accommodation in Tourism:

Accommodation Types- 1) Hotels, Motels, inn, Saraies, Dharmashalas. 2) Govt. Accommodation, Tourist homes. 3) Youth Hostels, Cottages, Tents, Caravans. 4) Rail Yatri Bhavan, House Boats 5) Private accommodations and unrecognized accommodations.

### **Unit-III**

Role of Transportation in Tourism : (A)Mode of Transportation- Air, Rail, Road Water Ways.

(B) Agencies and Guides- 1) World Organizations, National organisations 2) Private agencies.-National, International 3) Role of guides in tourism. 4) Licensing and recognition of guides. 5) Training Programme for Guides.

Impact of Tourism: (A) Economic impact (B) Physical and Environmental impacts (C) Socio-cultural impacts

### **Unit-IV**

Development and Planning: (A) Levels of Planning-International level planning , National level planning, Regional and Local planning

(B) Tourism Planning in India- a). Development of tourism in India and Jharkhand b). Tourism policies of India and Jharkhand

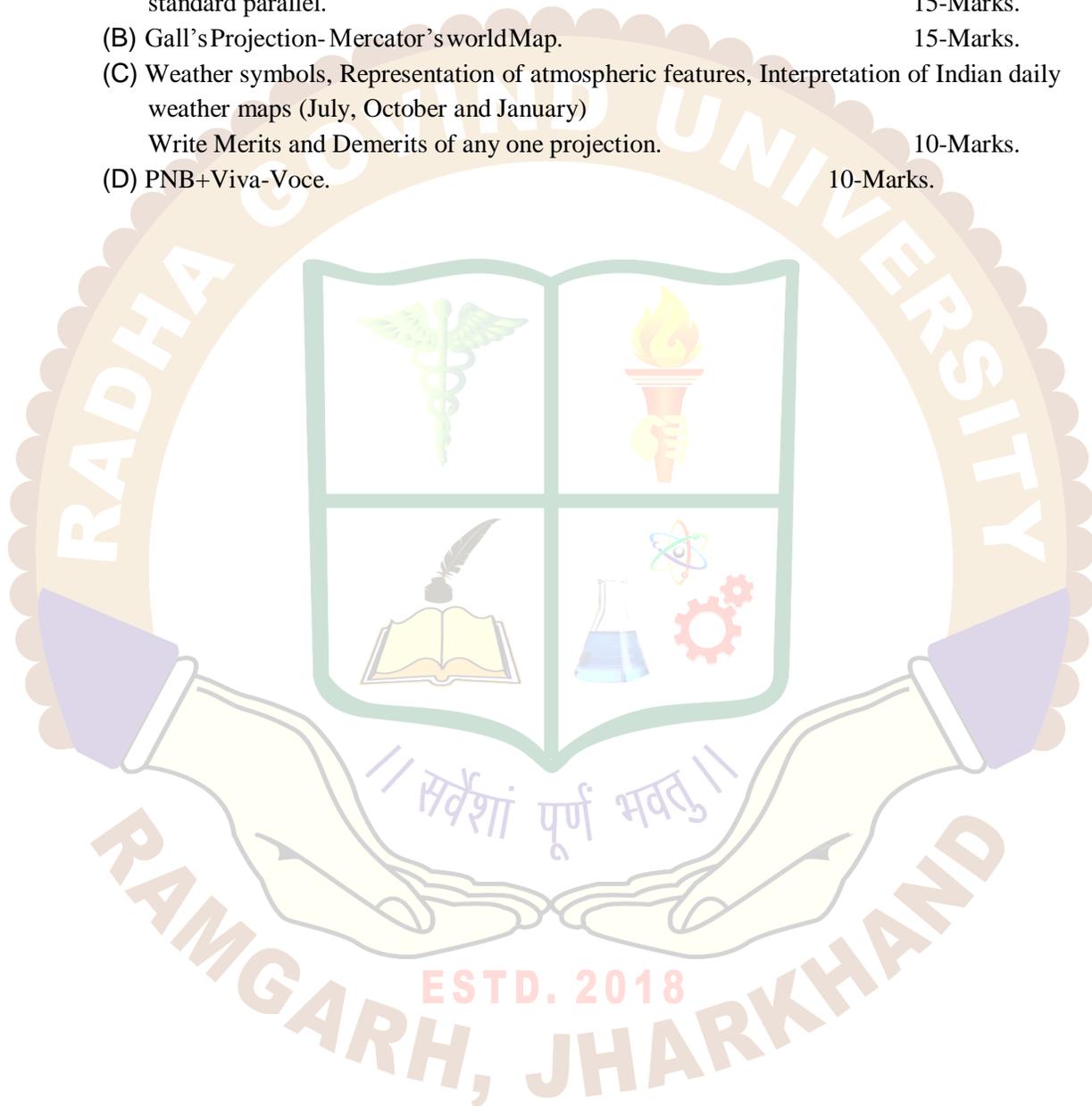
Evaluation of Potentials and Tourism: Potentials and Tourism Assessment of region's ability to attract tourists- (a) Physical factors (b) Cultural factors (c) Social factors (d)Economic factors (e) Political factors

Case studies of Major Tourist Centres of Jharkhand (at least Four Major Tourist Centre's)

**Paper 4, CORE 8, 9&10 Practical, 3 Credits** (Teaching 6 hours per week and minimum 72 teaching hours). F.M. 75

**Practical.**

- (A) Projection- Polar Zenithal; Equi-Distant and Equal Area , Conical Projection with two standard parallel. 15-Marks.
- (B) Gall's Projection- Mercator's world Map. 15-Marks.
- (C) Weather symbols, Representation of atmospheric features, Interpretation of Indian daily weather maps (July, October and January)  
Write Merits and Demerits of any one projection. 10-Marks.
- (D) PNB+Viva-Voce. 10-Marks.



**Paper 5, Generic Elective (GE-4) Theory , 5 Credit, FM 75 (to be opted by candidates from disciplines other than Geography)**

### **Sustainable Development**

Module –I

Sustainable Development: Definition, Components, Historical Background and Scope; the role of higher education in sustainable development;

Module –II

The Millennium Development Goals: National Strategies and International Experiences

Module –III

Sustainable Regional Development: Need and examples from Cities and Mountains; The human right to health; Poverty and disease; The Challenges of Health Coverage in High-Income Countries;

Module –IV

Inclusive Development: Education, Health; Climate Change: Policies and Global Cooperation for Climate Change; Sustainable Development Policies and Programmes; The proposal for SDGs at Rio+20; Illustrative SDGs; Goal-Based Development; Financing for Sustainable Development; Principles of Good Governance; National Environmental Policy.

**Paper 6, Generic Elective (GE-4) Practical, 1 Credit, FM 25 (to be opted by candidates from disciplines other than Geography)**

Project Work/Report on relevant topics pertaining to Sustainable Development, preferably on any Sustainable Development Goals/Policies & Programmes/Efforts made at National/International Fora.

**15 Marks**

Project File & Viva-Voce –

**10 Marks**

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**Paper 7. Skill Enhancement Course (SEC-2), 2 Credits, FM 25**

**Skill Enhancement Course – Modern Techniques of Spatial Analysis (Basics of Remote Sensing, GPS & GIS)**

**Unit I** Remote Sensing: Concept and Scope; Fundamentals of Electro-magnetic Radiation EMR: Characteristics, Spectral regions and Bands; Interaction with earth surface features and atmosphere; Types of Remote Sensing: Air borne and Space borne; Aerial photos: Types and Characteristics; Remote Sensing satellites: Platforms and sensors;

**Unit II** GPS - Principles and Components; India's Space Programme - Satellites, Data products and their Applications Remote Sensing application in resource mapping and environmental monitoring

**Unit III** Theoretical Basis of a GIS Definitions, Historical Development, Components of a GIS Types of Geospatial datasets: Raster, Vector, Surface - Attributes and Functionality

**Unit IV** Applications of GIS Nature of GIS Applications Studies on Land cover and Land use Change in Urban Areas Mapping and Predicting Environmental Hazards Detecting and Analysing Tourism Landscape Changes Prospects in GIS.



## **THIRD YEAR -Fifth Semester-Total 24 Credits**

**Paper 1, CORE 11 (Theory) – Human Geography**-5 Credits (Teaching 5 hours per week and minimum 60 teaching hours). FM .75

### **Unit I**

Meaning, nature and scope of human geography; Concepts of human geography; Man environment relationships: determinism, possibilism and probabilism, and environmentalism.

### **Unit II**

Evolution of man; Classification of races; Characteristics of races and their broad distribution; Human adaptation to environment: Eskimo, Masai and Bushman; Primitive people of Jharkhand: Santal, Oraon and Birhor.

### **Unit III**

Growth of population; Distribution of population; Major human agglomerations; Types of Migration; Trends of Urbanization.

### **Unit IV**

Rural settlements: characteristics, types and regional pattern; Urban settlements: evolution and classification; Rural houses in India: types, classification and regional pattern.

**Paper 2, CORE 12 (Theory) – Economic Geography** -5 Credits (Teaching 5 hours per week and minimum 60 teaching hours). FM .75

### **Unit I**

Meaning and approaches to economic geography; Main concepts of economic geography; Resource: concept and classification; Resource conservation.

### **Unit II**

Natural resources: soil, forest and water; Mineral resources: iron ore and bauxite; Power resources: coal and petroleum; Principal crops: wheat, rice and cotton.

### **Unit III**

Agricultural regions of the world (Derwent Whittlesey); Theory of agricultural location (Von Thunen); Theory of industrial location (Weber); Major industries: iron and steel, and cotton textiles.

### **Unit IV**

World transportation: major trans-continental railways, and sea routes; WTO and International trade: patterns and trends; Major trade blocs: EEC, ASEAN; Effect of globalization on developing countries.

**Paper 3, CORE 11 & 12 Practical, 2 Credits** (Teaching 4 hours per week and minimum 64 teaching hours). F.M. 50

Interpretation of Topographical Sheets

Unit - I

Introduction to Survey of India (SOI) toposheets, marginal information, grid reference, conventional signs and symbols

Types of toposheet/Indexing of toposheets

- i. 1: 1000000/Million sheet
- ii. 1:250000/Degree sheet/Quarter inch sheet
- iii. 1:100000/Half inch sheet
- iv. 1:50000/One inch sheet
- v. 1:25000

15-Marks

Unit - II

Principles of toposheet numbering as followed by Survey of India; Reading of at least three SOI toposheets one each for plain, plateau and mountainous/hilly region

Thorough study of plateau region on toposheet of 1:50,000 scale

Morphometric techniques in 10 x 12 cm area: Relative relief (after Smith), Average slope (after Wentworth), Drainage density and grid-wise Road density with interpretation

Drawing and analysis of profiles and transect chart with interpretation

Analysis of landforms and correlation between physical and cultural elements under the heads of: relief, drainage, natural vegetation, settlements and transport

15-Marks

Unit – III

One day field excursion for orientation of toposheet, observation and identification of geographical features and preparation of a brief report

20-Marks

Unit – IV

PNB+Viva Voce (5+5)

10 Marks

**Paper 4, Discipline Specific Elective (DSE)-1, Population Geography, 5 Credits** (Teaching 5 hours per week and minimum 60 teaching hours). F.M. 75

### **Unit -I**

Nature and scope of population geography; Sources and types of population data: census, sample survey (NSS) and vital registration system.

### **Unit -II**

World population: growth, causes and consequences; Factors affecting population distribution; Migration: types and determinants; Urbanization: trends and pattern

### **Unit -III**

Population dynamics: fertility and mortality, age and sex structure; Occupational structure; Malthusian Theory and Demographic transition theory; human resource development: indicators and patterns.

### **Unit -IV**

INDIA:- Population growth; Distribution of population; Density types; Population problems; Population Policy.

**Paper 5, Discipline Specific Elective (DSE)-2, Agricultural Geography, 5 Credits**  
(Teaching 5 hours per week and minimum 60 teaching hours). F.M. 75

### **Unit I**

Meaning and scope of agricultural geography; Approaches to agricultural geography; Physical, cultural and institutional factors affecting agriculture.

### **Unit II**

Crop concentration and crop diversification; Delineation of crop combination regions; Agricultural regions of the world; Detailed study of subsistence, plantation, commercial and mixed farming.

### **Unit III**

Agricultural land-use and carrying capacity; Land use pattern with special reference to India; Measures of agricultural efficiency and agricultural productivity.

### **Unit IV**

Agro-climatic regions of India, Green revolution in India; Second generation reforms in Indian agriculture: Land and institutional reforms; Organic and contract farming; Agricultural planning and policies in India.

**Paper 6, Discipline Specific Elective (DSE)-Practical of DSE -1 &2, 2 Credits**  
(Teaching 4 hours per week and minimum 64 teaching hours). F.M. 50

**Unit I**

Measures of economic activity; Calculation of Human Development Index (HDI) 05- Marks

Collection of labour force data at household level from primary and / or secondary sources and preparation of an analytical survey report to assess the population development of an area 15 -Marks

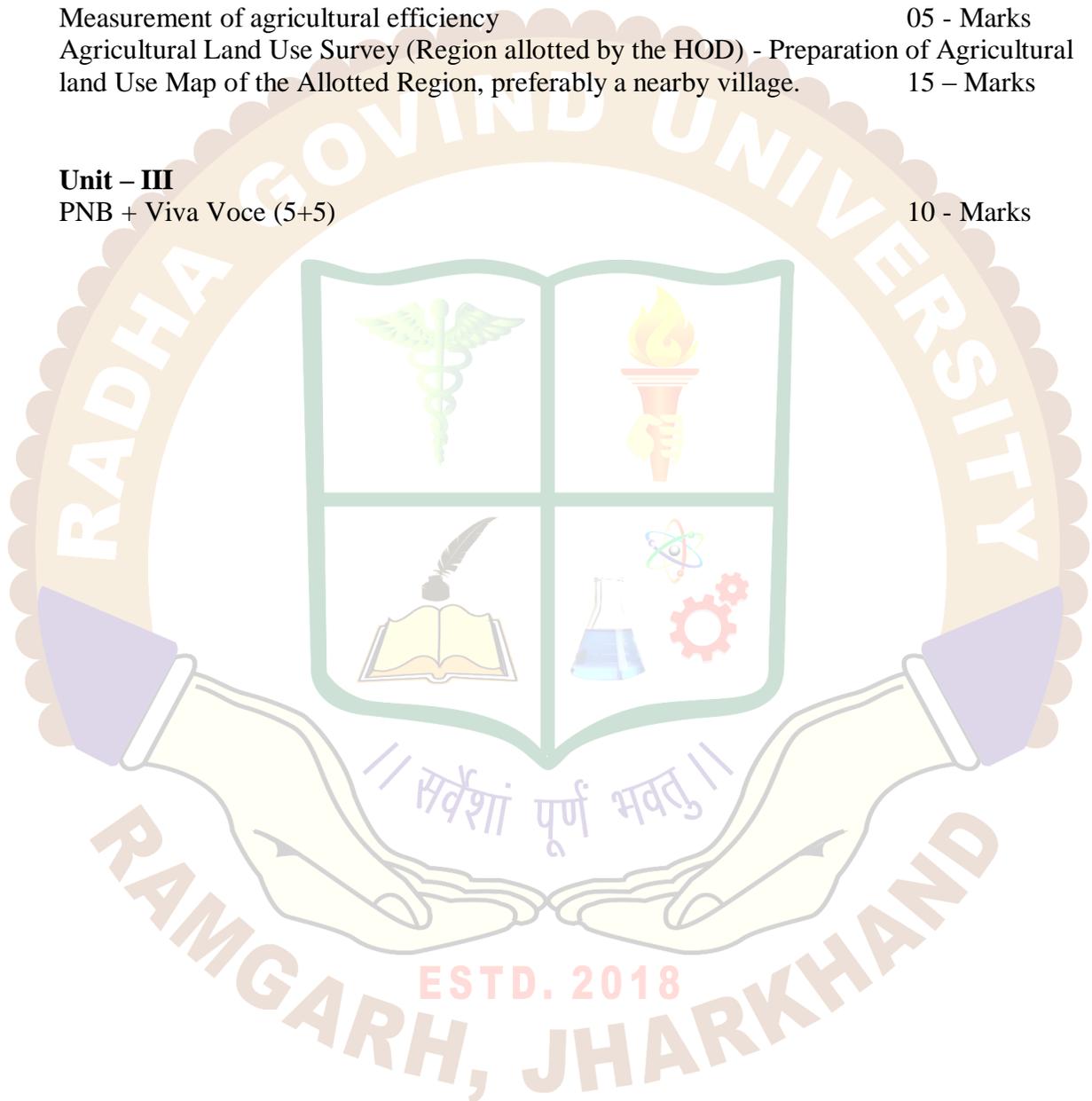
**Unit – II**

Measurement of agricultural efficiency 05 - Marks

Agricultural Land Use Survey (Region allotted by the HOD) - Preparation of Agricultural land Use Map of the Allotted Region, preferably a nearby village. 15 – Marks

**Unit – III**

PNB + Viva Voce (5+5) 10 - Marks



## **Sixth Semester-Total 24 Credits**

**Paper 1, CORE 13 (Theory) – Environmental Geography -5 Credits** (Teaching 5 hours per week and minimum 60 teaching hours). FM .75

### **Unit - I**

Definition and Scope of Environmental Geography; Meaning and Components of Environment

### **Unit – II**

Ecology, Eco-Systems And Soil System:

i. Definition and Scope of Ecology ii. Meaning, Types, structure/Components and Functioning of Eco-Systems iii. Meaning and Components of Soil System

### **Unit – III**

Environmental Degradation And Pollution i. Meaning and Causes of Environmental Degradation ii. Meaning, Sources and Causes of Air and Water Pollution

### **Unit – IV**

Environmental Issues

i. Depletion of Ozone Layer, Ecological Significance of Ozone, Protection of Ozone Layer ii. Acid Rain- Causes and Effects iii. A Detailed Account of the Concept of Global Warming Environmental Programmes and Policies – Global, National and Local levels

**Paper 2, CORE 14 (Theory) – Regional Development and Planning -5 Credits** (Teaching 5 hours per week and minimum 60 teaching hours). FM .75

### **Unit - I**

Meaning, concepts and scope of regional development and planning; Approaches to Regional Development; Approaches to Regional Planning; Theories of regional development (Myrdal and Perroux).

### **Unit - II**

Evolution of Regional Planning in India; Concepts and types of regions; Schemes of regionalization; Macro micro planning regions of India; Multi-level planning; Participatory planning.

### **Unit - III**

Regional development in India: patterns and imbalances; Planning for regional development; Role of agriculture, industry and infrastructure (transport and power) in regional development.

### **Unit - IV**

Area development and planning: National Capital Region; Local-level planning and Panchayati Raj; Planning for Eastern Uttar Pradesh and North-East India.

**Paper 3, CORE 13 &14 Practical, 2 Credits** (Teaching 4 hours per week and minimum 64 teaching hours). F.M. 50

(A) Dumpy Level Survey, Clinometer, Sextant.

10-Marks.

(B) Geographical Excursion of any part of India and prepare environmental report of visited area.

20-Marks.

(C) Finding Centre Tendency-mean, mode, median, standard deviation .

10-Marks.

(D) PNB+Viva-Voce.

10-Marks.

**Paper 4, Discipline Specific Elective (DSE)-3, Social Geography , 5 Credits** (Teaching 5 hours per week and minimum 60 teaching hours). F.M. 75

**Unit - I**

Meaning and scope of social geography; Concept of social space; Social differentiation and stratification; Social morphology.

**Unit - II**

Social differentiation and region formation: Bases of social region formation; Evolution of sociocultural regions of India; Role of race, caste, tribe, religion and languages; India — unity in diversity

**Unit – III**

Concept of social wellbeing; Physical quality of life; Human development: concept and measurements; Rural-urban interfaces in India: health care, education and shelter; Gender issues in India

**Unit - IV**

Public policy and social planning in India; Appraisal of Five-Year Plans and social policies in India; Social policy and planning for drought and flood prone areas; Social impact assessment of development projects

**Paper 5, Discipline Specific Elective (DSE)-4, Political Geography, 5 Credits** (Teaching 5 hours per week and minimum 60 teaching hours). F.M. 75

**Unit - I**

Introduction: Introduction, Nature, Scope and Geopolitics. State, Nation and Nation State – Concept of Nation and State, Attributes of State – Frontiers, Borders, Shape, Size, Territory and Sovereignty, Concept of Nation State.

**Unit – II**

Electoral Geography – Geography of Voting, Geographic Influences on Voting pattern, Geography of Representation, Gerrymandering.

### **Unit – III**

Political Geography of Resource Conflicts – Water Sharing Disputes, Disputes and Conflicts Related to Forest Rights and Minerals, issues of land locked states in Asia and Africa

### **Unit - IV**

Politics of Displacement: Issues of relief, compensation and rehabilitation: with reference to Dams and Special Economic Zones.

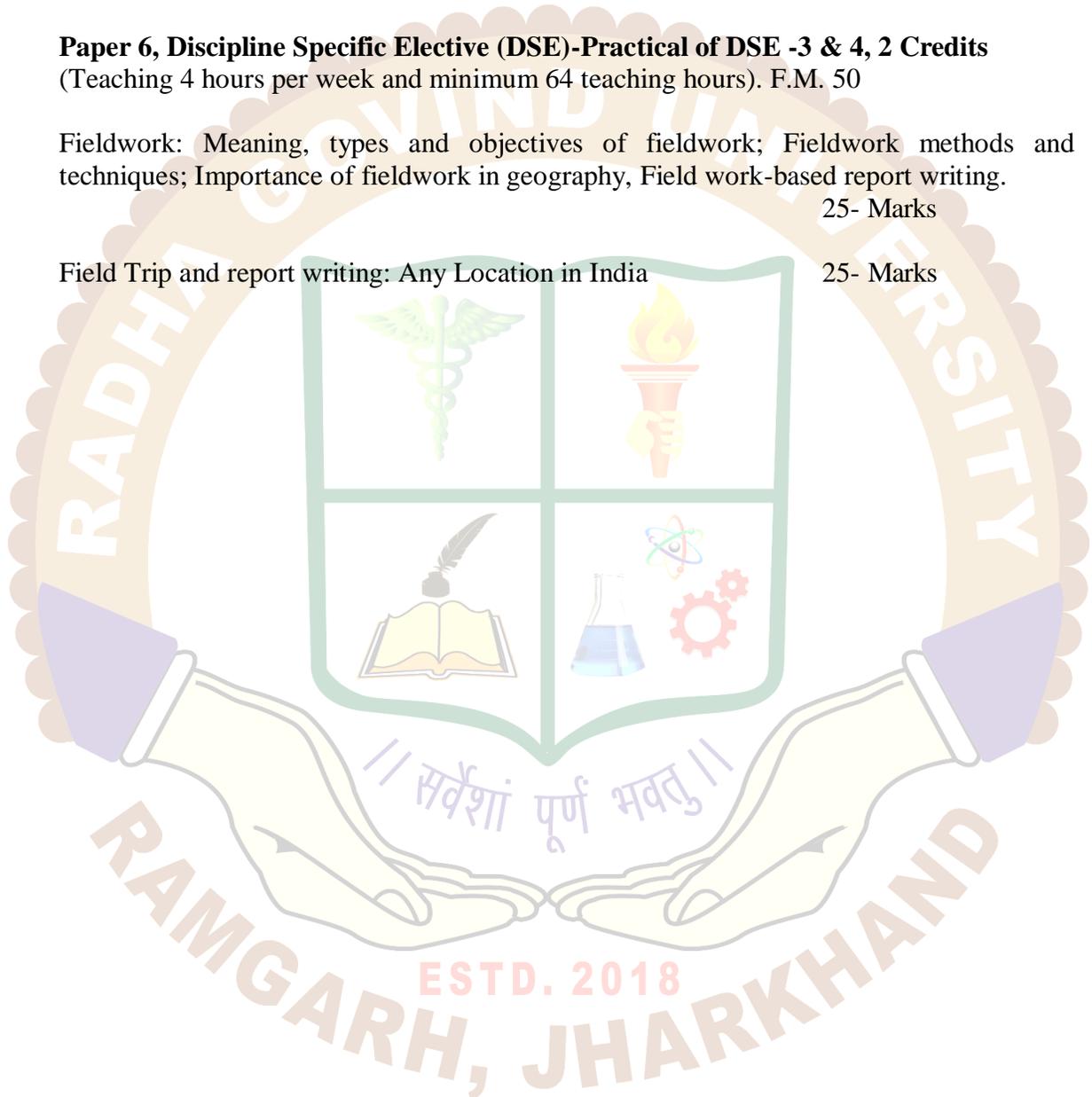
**Paper 6, Discipline Specific Elective (DSE)-Practical of DSE -3 & 4, 2 Credits**  
(Teaching 4 hours per week and minimum 64 teaching hours). F.M. 50

Fieldwork: Meaning, types and objectives of fieldwork; Fieldwork methods and techniques; Importance of fieldwork in geography, Field work-based report writing.

25- Marks

Field Trip and report writing: Any Location in India

25- Marks

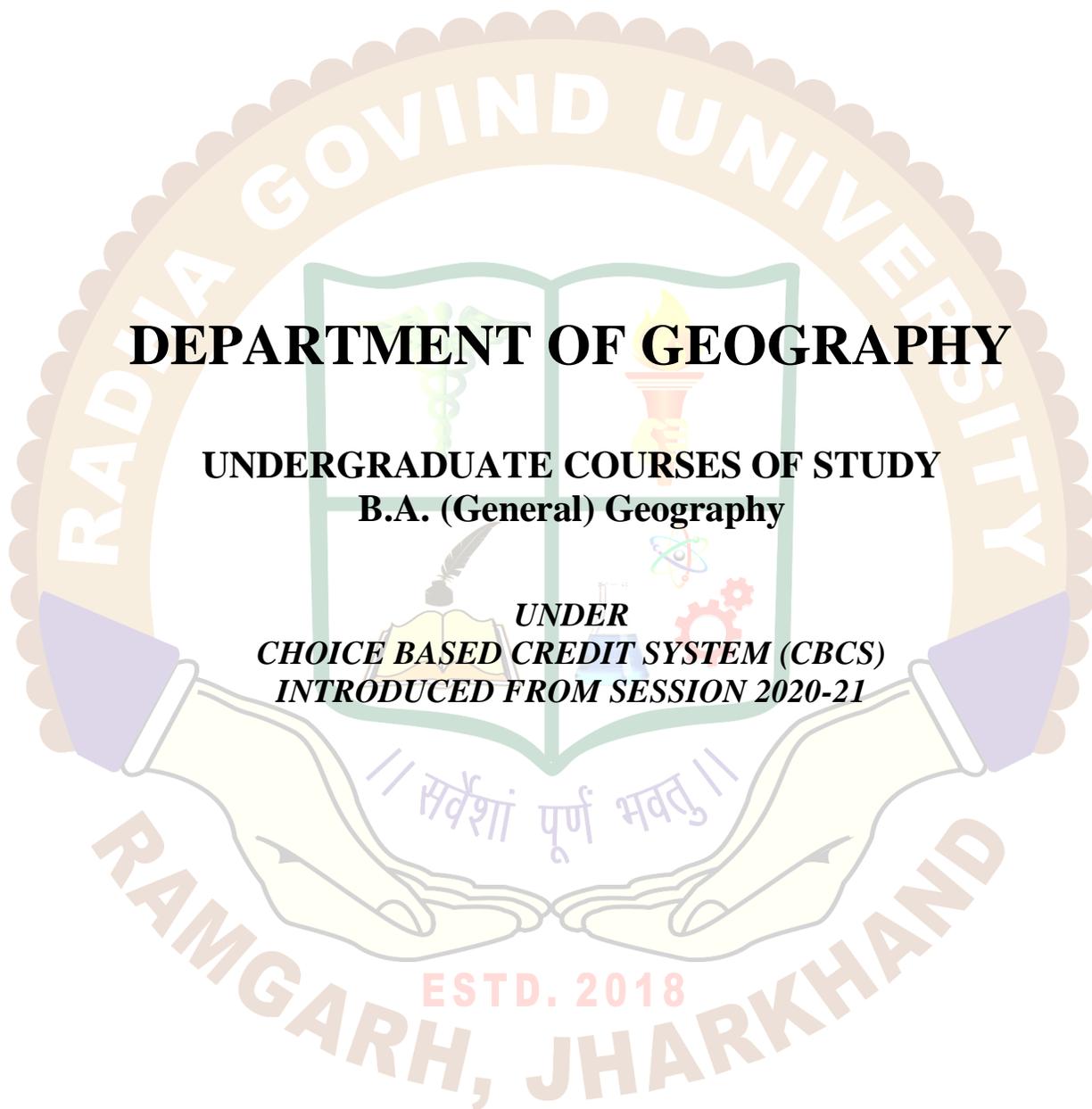


**RADHA GOVIND UNIVERSITY, RAMGARH**

**DEPARTMENT OF GEOGRAPHY**

**UNDERGRADUATE COURSES OF STUDY  
B.A. (General) Geography**

**UNDER  
CHOICE BASED CREDIT SYSTEM (CBCS)  
INTRODUCED FROM SESSION 2020-21**



**SEMESTER – I**  
**Core Course: Geography - I**  
**Introduction of Geography**  
(Credits: Theory-4, Practicals-2)

**THEORY**

Lectures: 60

Full Marks: 75/60/15

Time: 03 Hrs.

**Unit I**

Introduction:- The nature of Geography, objective and relevance. Role of Geography in the classification of Science, Geography, Major themes and sub themes.

**Unit II**

Geography as the study of environment, Man environment, environment relationship, ecology and ecosystem. Environmental determinism, possibilism.

**Unit III**

Recent trends in geography with special reference to India. Environmental degradation, Disaster and environmental Management .

**Unit IV**

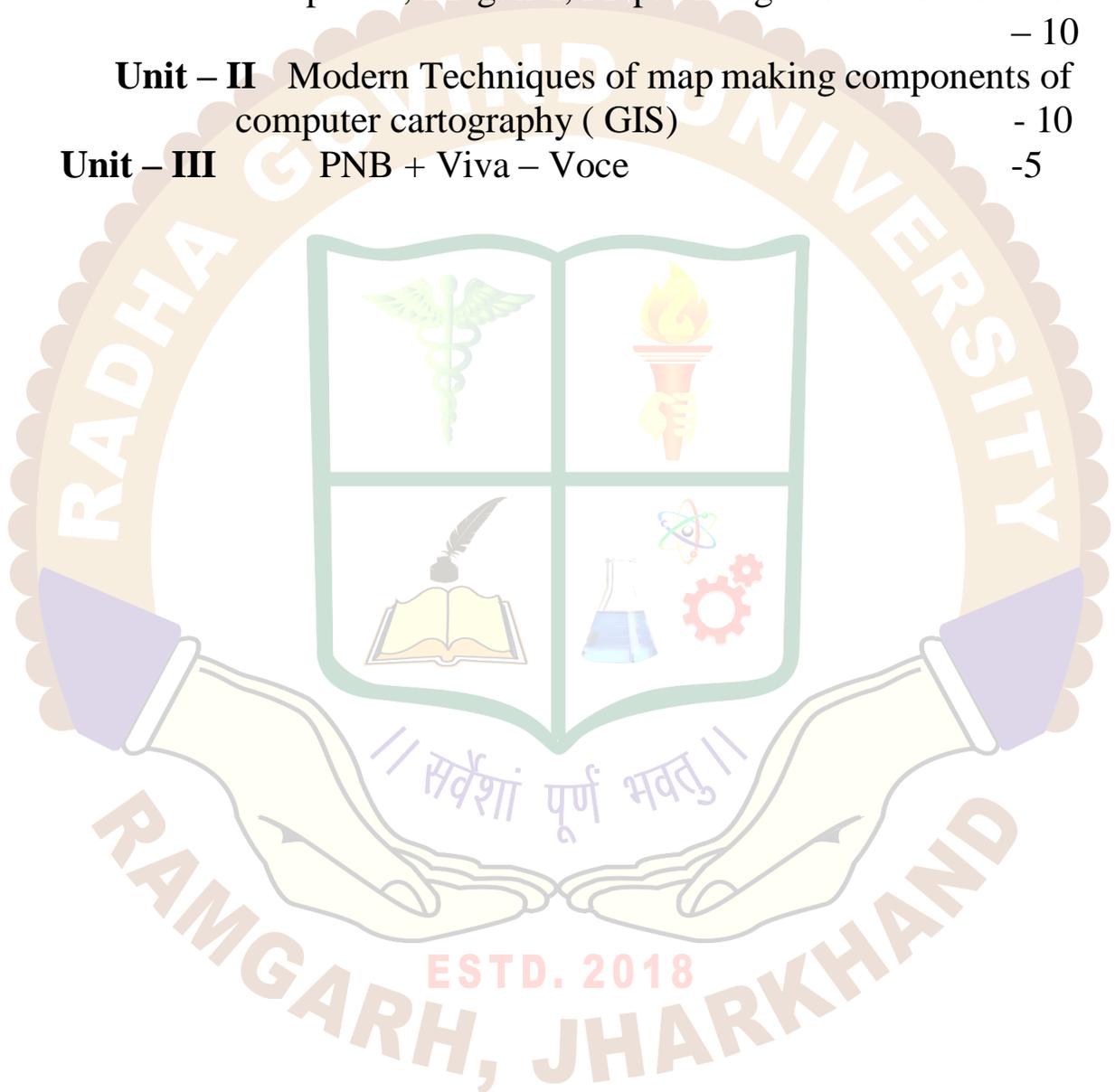
Issues related to human resources:- Carrying capacity of the earth. Indicator of develop regional imbalances.

## Practical

FM: 25/20/5

Time:3 Hrs

- Unit –I** History of Cartography , types of maps, Scale simple compound, Diagonal; Maps enlargement and reduction – 10
- Unit – II** Modern Techniques of map making components of computer cartography ( GIS) - 10
- Unit – III** PNB + Viva – Voce -5



**SEMESTER – II**  
**Core Course: Geography - II**  
**Physical Geography**  
(Credits: Theory-4, Practicals-2)

**THEORY**

**Lectures: 60**

**Full Marks: 75/60/15**

**Time: 03 Hrs.**

**Unit – I** Origin of the earth ( Theories) Jeans & Jeffry & Otto Schmidt , Interior of the earth condimental Drift Theory, Plate tectonics and Mountain Building, Isostasy.

**Unit- II** Cycle of erosion ( Davis & Penck) Topography- Fluvial, Arid, Glacial, Karst, Coastal, Volcanic eruption & Earthquake .

**Unit-III** Composition & structure of the Earth Atmosphere, Air Masses and fronts, classification of climate – Koeppen, Temperate & Tropical Cyclones, Heat Budget of the earth- Green House effect, Global warming .

**Unit – IV** Bottom relief of Indian & Atlantic Ocean; Salinity of Ocean water, Tides, Ocean Deposits, Coral Reefs.

**Practical**

**FM: 25/20/05**

**Time:3 Hrs.**

**Unit – I** Drawing of Climograph and Hythergraph and their interpretation , Isopleth of climate . 10

Unit –II Study Topographical Map of India with respect of Relief, Drainage, Settlement & Communication Pattern.

10

**Unit- III** Project Report Viva- Voce. 05



**SEMESTER – III**  
**Core Course: Geography - III**  
**Geography of India and Jharkhand**

(Credits: Theory-4, Practicals-2)

**THEORY**

**Lectures: 60**

**Full Marks: 75/60/15**

**Time: 03 Hrs.**

**Unit- I** Physical geography of India, geological structure of Himalaya Mountain. Indian climate, Drainage System of India and their functional significance .

**Unit –II** Soil types of India. Their distribution and characteristics. vegetation types and their distribution forest resource. Minerals and power resource. The status of their use and need of conservation. Geographical region- Middle Ganga plains, Tamil Region.

**Unit- III** Spatial distribution of population and density, population explosion, Sex composition Causes and effects. Regional disparities in Social and economic development .

**Unit – IV** Resources – Forest and minerals habitat and Economy of Santhal and Oraon, Tourism development and its prospects, Environment of tourism and tourism policy in Jharkhand.

## Practical

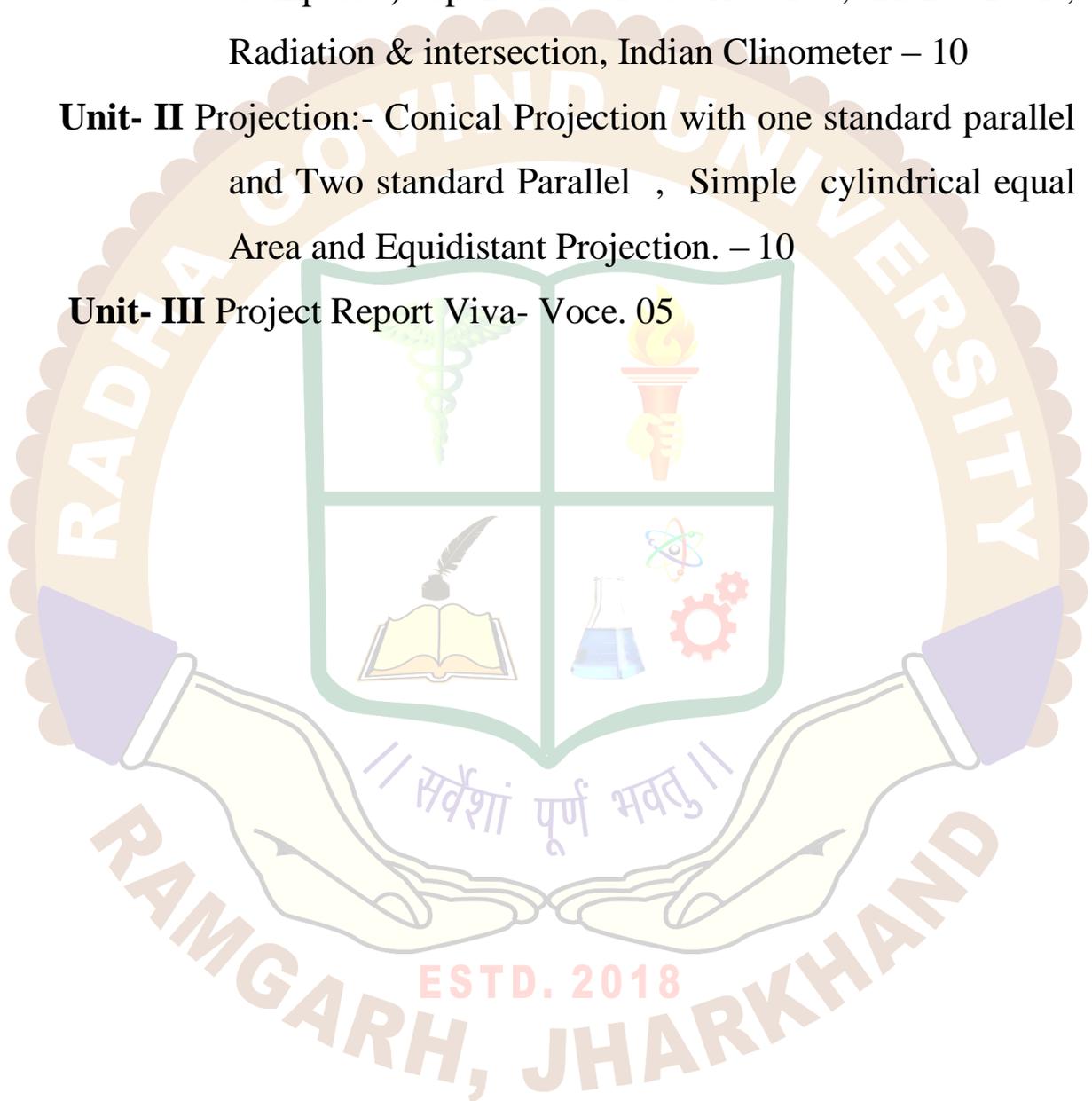
**FM: 25/20/05**

**Time: 3Hrs.**

**Unit- I** Basic principles of land surveying with ( prismatic Compass ) open and close Travers , Plane Table, Radiation & intersection, Indian Clinometer – 10

**Unit- II** Projection:- Conical Projection with one standard parallel and Two standard Parallel , Simple cylindrical equal Area and Equidistant Projection. – 10

**Unit- III** Project Report Viva- Voce. 05



**SEMESTER – IV**  
**Core Course: Geography - IV**  
**Human Geography**  
(Credits: Theory-4, Practicals-2)

**THEORY**

**Lectures: 60**

**Full Marks: 75/60/15**

**Time: 03 Hrs.**

**Unit- I** Nature and scope of human geography, Branches of human Geography. Physical and social profile of social groups. Ethnic groups, tribal groups and religion groups in India.

**Unit- II** Early economic activities of mankind, food , gathering, Hunting, fishing and shifting Cultivation . Human Adaptation to the environment (i) Cold region - Eskimo (ii) Hot region- Bushman.

**Unit- III** Distribution of Population :- World distribution pattern, Geographical factors of distribution concepts of over population, under population and optimum population, Slump population and environment in India

**Unit- IV** Migration :- Push and Pull Factors; National and International Types; Population Policy in India.

## Practical

FM: 25/20/05

Time: 3 Hrs.

**Unit- I** Statistical Methods:- Use of mean, Median, Mode and Standard deviation in data analysis and Mapping.

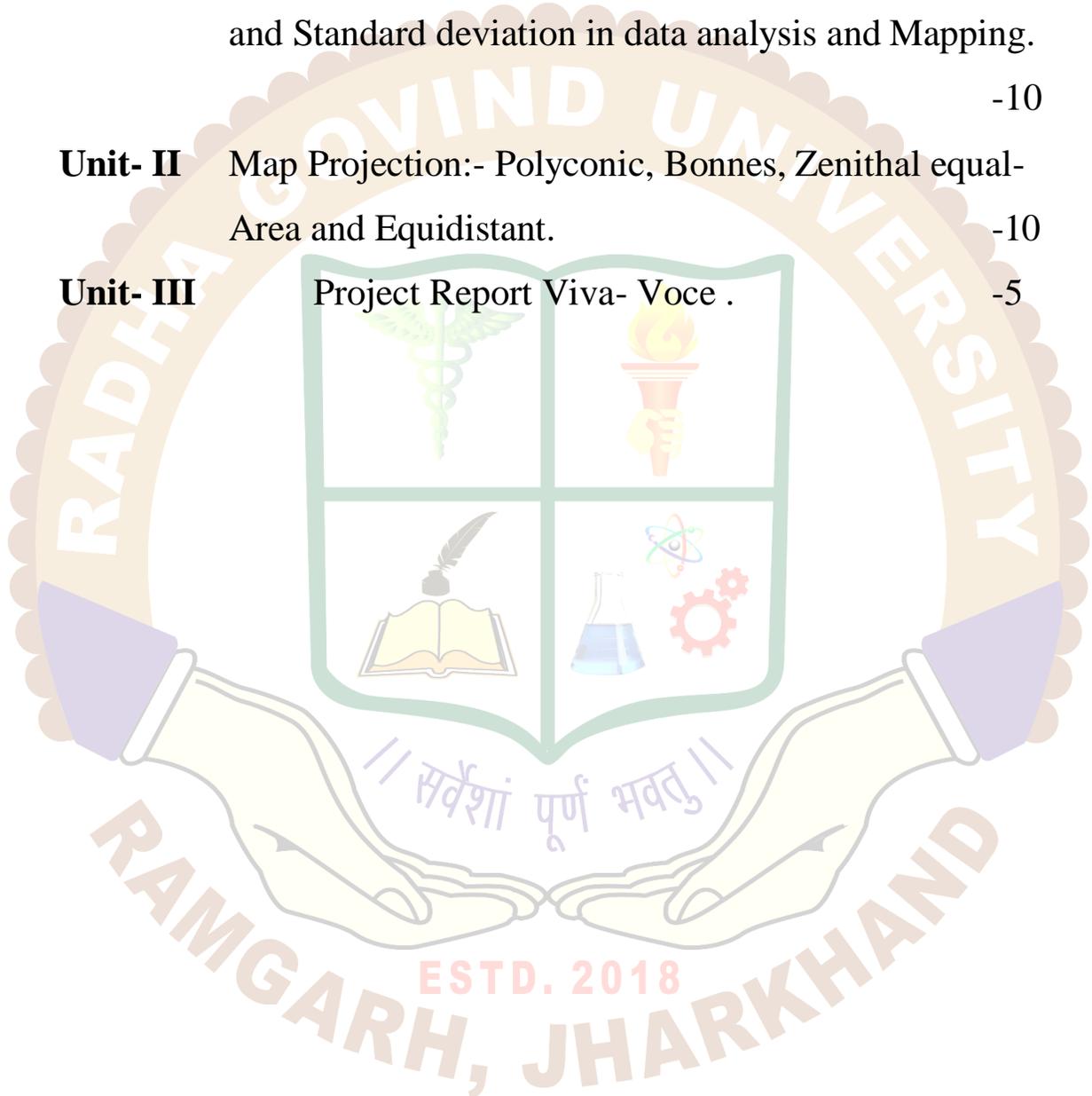
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**Unit- II** Map Projection:- Polyconic, Bonnes, Zenithal equal-Area and Equidistant.

-10

**Unit- III** Project Report Viva- Voce .

-5



**SEMESTER – V**  
**Discipline Specific Elective (DSE): Geography - V**  
**(Any one Paper: Environmental Geography/Population**  
**Geography)**

**Environmental Geography**  
**(Credits: Theory-4, Practicals-2)**

**THEORY**

**Lectures: 60**

**Full Marks: 75/60/15**

**Time: 03 Hrs.**

**Unit- I** Meaning and importance of environmental Geography- concept of Environment Relationship of environmental Geography with earth Science, Physical Science and Biological Sciences.

**Unit- II** Meaning and structure of Environment, components of Environment Meaning of Ecology and Ecosystem, types and functioning of Ecosystem Productivity and stability- biosphere as an ecosystem.

**Unit- III** Energy flow in the ecosystem tropic levels food chains and food web- ecological pyramids- Circulation of elements in the ecosystem Biochemical cycles. Biomes- Blomes of tropical rainforests, Tropical deciduous and savanna biomes. Human impact on Environment- Environmental pollution (i) Air Pollution (ii) Water Pollution (iii) Noise Pollution (iv) Land

Pollution, Depletion of ozone layer, Green House Effect, Environmental impact Assessment (EIA)

**Unit- IV** Natural Hazards and degradation of Environment

Volcanoes earthquakes and cyclones. Conservation and Management of Physical and cultural environment.

International and national policies on protection of earth environment- Role of UNO.

**Population Geography**  
(Credits: Theory-4, Practicals-2)

**THEORY**

**Lectures: 60**

**Full Marks: 75/60/15**

**Time: 03 Hrs.**

**Unit -I**

Nature and scope of population geography; Sources and types of population data: census, sample survey (NSS) and vital registration system.

**Unit -II**

World population: growth, causes and consequences; Factors affecting population distribution; Migration: types and determinants; Urbanization: trends and pattern

### **Unit -III**

Population dynamics: fertility and mortality, age and sex structure; Occupational structure; Malthusian Theory and Demographic transition theory; human resource development: indicators and patterns.

### **Unit -IV**

INDIA:- Population growth; Distribution of population; Density types; Population problems; Population Policy.

#### **Practical**

**FM: 25/20/05**

**Time: 3 Hrs.**

**Unit- I** Maps- meaning classification- Atlas wall Maps, Wall Maps, Topographical, Cadastral Maps Physical and cultural maps. 10

**Unit- II** Scales:- Meaning, significance, types statement- RF, Conversion of Scales Graphical Scale, Linear and Diagonal Scales with illustration. 10

ESTD. 2018

**SEMESTER – VI**  
**Discipline Specific Elective (DSE): Geography - VI**  
**(Any one Paper: Field Work (Socio-Economic)/Social**  
**Geography)**  
**Field work ( Socio- Economic)**

(Credits: Theory-4, Practicals-2)

**THEORY**

**Lectures: 60**

**Full Marks: 75/60/15**

**Time: 03 Hrs.**

**Objectives :**

Main objective of the field work is to provide the students with the understanding of ground reality of a chosen village/town by observation; mapping of land quality, land-use and cropping pattern and conducting Socio- economic survey of the households with help of a specially prepared questionnaire .

**Course Contents :**

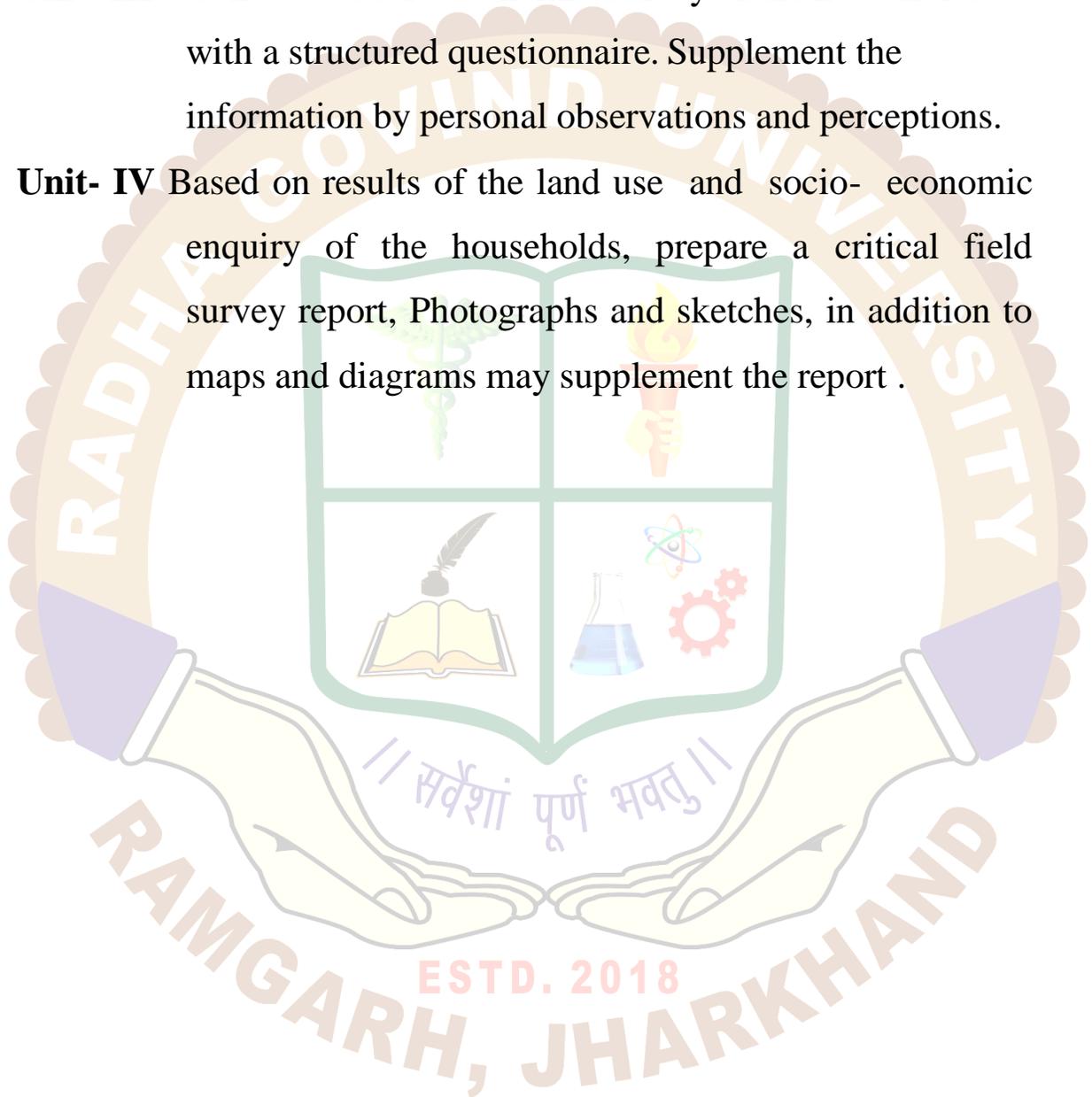
**Unit- I** To procure Topographic map of 1:50,000 or 1:25,000 Scale; To study the settlements Selected in its regional setting. Collect demographic, Social & economic data of the village/town from census reports to study the temporal changes in the profile of such characteristics .

**Unit- II** Procure a cadastral map of the Village/town for filed mapping of the features of land- use and land quality. Procure/ prepare the settlement site map

through rapid survey to map the residential commercial recreational ( Parks; Playgrounds), educational religious and other prominent features.

**Unit- III** Conduct a Socio-economic Survey of the households with a structured questionnaire. Supplement the information by personal observations and perceptions.

**Unit- IV** Based on results of the land use and socio- economic enquiry of the households, prepare a critical field survey report, Photographs and sketches, in addition to maps and diagrams may supplement the report .



# Social Geography

(Credits: Theory-4, Practicals-2)

## THEORY

Lectures: 60

Full Marks: 75/60/15

Time: 03 Hrs.

### Unit - I

Meaning and scope of social geography; Social differentiation and stratification; Social morphology.

### Unit - II

Social region formation: Bases of social region formation; Evolution of socio-cultural regions of India; Role of race, caste, tribe, religion and languages; India — unity in diversity

### Unit - III

Concept of social wellbeing; Physical quality of life; Human development: concept and measurements; Health care, education and shelter; Gender issues in India

### Unit - IV

Public policy and social planning in India; Appraisal of Five-Year Plans and social policies in India; Social policy and planning for drought and flood prone areas;



## Practical

**FM: 25/20/05**

**Time: 3 Hrs.**

**Unit- I** Importance of field instrument survey- scope and purpose, principals and application of selected survey instruments.

**Unit- II** Chain survey:- Use of tapes- open traverse, triangulation survey; plane table. Plan preparation resection- one point and two point problem, three point problem , Tracing paper method.

**Unit-III** Prismatic compass:- Open and closed traverse, elimination error, Bowditch method

**Unit- IV** Dumpy level:- Traverse survey, contour plan preparation. Theodolite- horizontal and vertical( height) measures, accessible and inaccessible method.

**Unit- V** Other smaller instruments- Sextant, Abney level and Indian clinometer, height measurements; coastal instruments mapping; Survey of a selected area. Preparation of base map by the use of surveying instruments; environmental impact assessments of an area where base maps are not available .

## Skill Enhancement Courses (SEC)

### Skill Enhancement Course (SEC)

#### Maps and Scales

(Credits 2)

Lectures: 30

Full Marks: 75

Time: 03 Hrs.

#### Unit I

Map Reading/Appreciation: Basics of Map Reading; Map as a tool of Information; Bases of Map Classification; Directions: Cardinal Directions; Primary Inter- Cardinal; Secondary Inter- Cardinal; Locational System: Dates and time; latitude; Longitude and Graticule; Time Zone and International Date Line; Geographic Locations: Continents and Oceans; Nations; State Capital; Major Cities of the World; Mountains and Rivers.

#### Unit II

Elements of Maps; Scales: types- simple, diagonal and comparative and conversions; Types of Maps – Topographical Maps, Weather Maps, Thematic Maps;

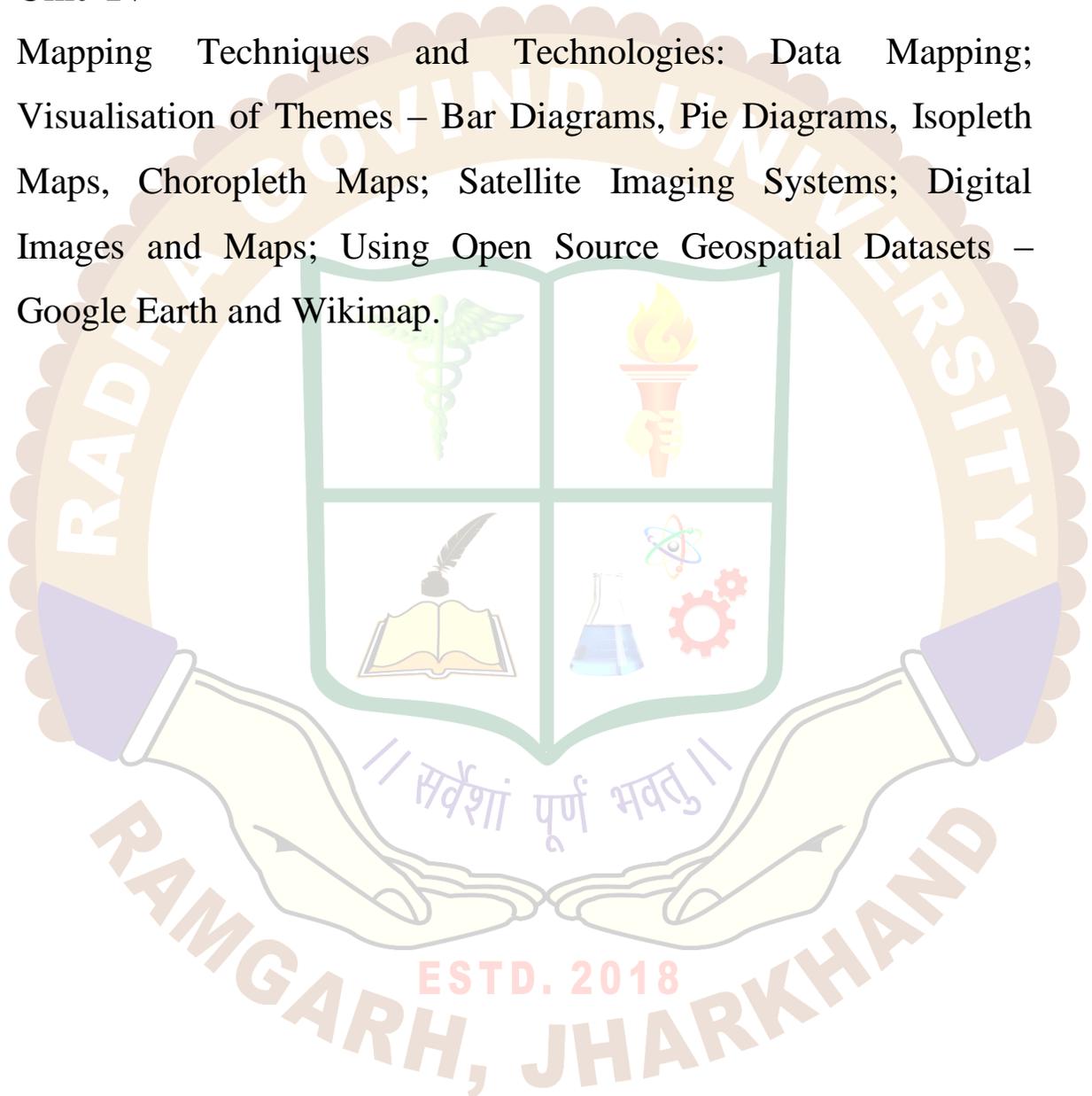
#### Unit III

Art and Science of Map Making; Projections – Concepts, Terminologies and Classification; Construction of Graticules –

Principles; Mapping Organisations – Survey of India, Geological Survey of India, National Atlas and Thematic Mapping Organisation.

#### **Unit IV**

Mapping Techniques and Technologies: Data Mapping; Visualisation of Themes – Bar Diagrams, Pie Diagrams, Isoleth Maps, Choropleth Maps; Satellite Imaging Systems; Digital Images and Maps; Using Open Source Geospatial Datasets – Google Earth and Wikimap.



**Skill Enhancement Course (SEC)**  
**Modern Techniques of Spatial Analysis**

**(Credits 2)**

**Lectures: 30**

**Full Marks: 75**

**Time: 03 Hrs.**

**Unit I**

Remote Sensing: Concept and Scope; Types of Remote Sensing: Air borne and Space borne; Aerial photos: Types and Characteristics; Remote Sensing satellites: Platforms and sensors;

**Unit II**

GPS - Principles and Components; India's Space Programme - Satellites, Data products and their Applications; Remote Sensing application in resource mapping and environmental monitoring.

**Unit III**

Theoretical Basis of a GIS Definitions, Historical Development, Components of a GIS Types of Geospatial datasets: Raster, Vector, Surface - Attributes and Functionality.

**Unit IV**

Applications of GIS; Nature of GIS Applications Studies on Land cover and Land use; Change in Forest Areas Mapping and Predicting Environmental Hazards; Prospects in GIS.

**Skill Enhancement Course (SEC)**

**Disaster Management**

**(Credits 2)**

**Lectures: 30**

**Full Marks: 75**

**Time: 03 Hrs.**

**Unit – I**

Disasters: Definition and Concepts: Hazards, Disasters; Risk and Vulnerability; Classification

**Unit- II**

Disaster in India: (a) Flood: Causes, Impact, Distribution and Mapping; (b) Drought: Causes, Impact, Distribution and Mapping

**Unit-III**

Disaster in India: (a) Earthquake and Tsunami: Causes, Impact, Distribution and Mapping; (b) Manmade disasters: Causes, Impact, Distribution and Mapping

**Unit -IV**

Response and Mitigation to Disasters: Mitigation and Preparedness, NDMA and NIDM; Indigenous Knowledge and Community-Based Disaster Management; Do's and Don'ts during Disasters

**Skill Enhancement Course (SEC)**

**Sustainable Development**

**(Credits 2)**

**Lectures: 30**

**Full Marks: 75**

**Time: 03 Hrs.**

**Unit –I**

Sustainable Development: Definition, Components, Historical Background and Scope; The role of higher education in sustainable development;

**Unit –II**

The Millennium Development Goals: National Strategies and International Experiences

**Unit –III**

Sustainable Regional Development: Need and examples from Cities and Mountains; The human right to health; Poverty and disease; The Challenges of Health Coverage in High-Income Countries;

**Unit –IV**

Inclusive Development: Education, Health; Climate Change: Policies and Global Cooperation for Climate Change; Sustainable Development Policies and Programmes: The proposal for SDGs at Rio+20; Illustrative SDGs; Goal-Based Development; Financing

for Sustainable Development; Principles of Good Governance;  
National Environmental Policy.

