GEOADS01T – PHYSICAL GEOGRAPHY ✧ UNIT WISE DIVISION	NO. OF CLASSES
THEORY : 3 Credits [45 hours of teaching]	
Unit I : Geotectonics and Geomorphology	
AP - 1. Internal Structure of Earth based on Seismic Evidence.	2
SM - 2. Influence of lithology on landforms: Granite and Basaltic landforms.	2
AP - 3. Factors controlling landform development; endogenetic and exogenetic forces.	2
KD - 4. Evolution of landforms under fluvial process.	4
AP - 5. Nature and classification of hazards in Indian context.	2
Unit II : Climatology, Soil and Biogeography	
KD - 6. Nature, composition and layering of the atmosphere.	3
AP - 7. Distribution of pressure belts and planetary wind system, jet streams, and index cycle.	3+3+2
SM - 8. Factors of soil formation.	3
KD - 9. Evolution of an ideal soil profile.	2
KD - 10. Concept of ecosystem — basic ecological principles, ecotone, communities, niche, succession, and habitat.	4
SM - 11. Concept of Biomes : study of Tropical rainforest, Taiga, Tundra, Desert, Savannah, and Temperate grasslands.	7
● Remedial class.	3
● Class test.	2
....	1
● Internal exam.	**TOTAL=45**
PRACTICAL : 2 Credits [60 hours of teaching]	10
AP - 1. Graphical construction of linear scales : Plain.	10
AP - 2. Altimetric frequency distribution; Demarcation of broad physiographic zones.	15
ND - 3. Denoting drainage, geomorphic, settlement and transport attributes using sketches....	
AP - 4. Identification of drainage and channel patterns from Survey of India 1:50,000 topographical maps.	10
AP - 5. Construction and interpretation of wind rose diagram.	5
● Class test.	4
....	1
● Internal exam.	5
● Remedial class.	**TOTAL=60**
....	
	8
GEOSE-01M – Remote Sensing - 3 Credits [45 hours of teaching]	8
MH - 1. Principles of Remote Sensing (RS) : Classification of RS satellites and sensors.	
MH - 2. Sensor resolutions and their applications with reference to IRS and Landsat missions, image referencing schemes and data acquisition.	10
BC - 3. Preparation of False Colour Composites from IRS LISS-3 and Landsat TM and OLI data. Principles of image rectification and enhancement.	10
MH - 4. Principles of image interpretation and feature extraction. Preparation of inventories of land use land cover features from satellite images.	7
	2
	TOTAL=45

Project file preparation. ………………………………………………………………………………………………… Internal exam. ……	

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GEOGRAPHY DEPARTMENT
RAMAKRISHNA SARADA MISSION VIVEKANANDA VIDYABHAVAN
LESSON PLAN FOR SEMESTER –III, 2023
(90 CLASSES : 90 CREDITS)

CC-5 : CLIMATOLOGY UNIT WISE DIVISION	NO. OF CLASSES
(THEORY)	
UNIT : I	
(KD) 1. Nature and composition of the atmosphere. …………………………………	2
Layering of the atmosphere. …………………………………………………………………	2
(KD) 2. Insolation : controlling	2
factors………………………………………………………..	2
Heat budget of the atmosphere & its	1
importance………………………………………	1
(SM) 3. Temperature : horizontal distribution of temperature – its	1
causes… Seasonal distribution of temperature	1
………………………………………………………	1
vertical distribution of temperature causes. …………………………………………………	2
Inversion of temperature : Types	1
…………………………………………………………… causes &	
consequences …………………………………………………………………….	2
(AP) 4. Greenhouse effect – cause and	1
effects.…………………………………………..	2
Importance of ozone layer	2
…………………………………………………………………..	2
UNIT : II	3
(ND) 5. Condensation : Process & Forms.………………………………………………	2
Forms of Precipitation.………………………………………………………………………	2
Mechanism of Precipitation. ……………………………………………………………………	2
Bergeron-Findeisen Theory & Collision & Coalescence Theory. ………………	2
(ND) 6. Air mass : Concept & its characteristics.	1
…………………………………………..	
Origin of air masses, …………………………………………………………………………	3
Types of air masses & its modification.……………………………………………………..	2
(SM) 8. Weather : stability & instability;	1
………………………………………………..	2+3
(SM) 7. Fronts : warm & cold	
………………………………………………………………..	2
Frontogenesis & Frontolysis. ………………………………………………………………	1
Barotropic & baroclinic conditions. ……………………………………………………	2
(AP) 9. Circulation in the atmosphere :	2
Planetary winds – Types, Pressure Belts, Tri-cellular Model.	2
…………………….	3 TOTAL=60
Jet stream- Types & characteristics.………………………………………………………	
Index cycle & Rosby wave ………………………………………………………………………	16
(SM) 10. Tropical & mid-latitude cyclones.	4
……………………………………………..	4

(AP) 11. Monsoon circulation : Mechanism & influence with reference to India……………………………………	4
	2 TOTAL=30
Relation of monsoon with Jet stream …………………………………………….	
(KD) 12. Climatic classification after Koppen. ………………………………………	
Thornthwaite classification.(1955) …………………………………………………	
• Class test, Internal exam etc. ………………………………………………	
• Remedial class. ……………………………………………………	
(AP) - PRACTICAL	
1. Interpretation of weather map : Pre-Monsoon & Monsoon………………….	
2. Construction & interpretation of Climograph……………………………………	
3. Construction & interpretation of Hythergraph…………………………………….	
4. Construction & interpretation of Windrose………………………………………	
5. Remedial class. …………………………………………………………………………….	
	TOTAL =90

CC-6 : GEOGRAPHY OF INDIA UNIT WISE DIVISION	NO. OF CLASSES
(ONLY THEORY)	
UNIT : I (GEOGRAPHY OF INDIA)	
(SM) 1. Tectonic & stratigraphic provinces…………………………………………	2
Physiographic divisions. ……………………………………………………….	7
(AP) 2. Climate, Soil & Vegetation: characteristics &	6
classification……	2
(KD) 3. Population : Distribution of population of India……………………	2
Growth of population of India………………………………………………….	2
Structure of population of India……………………………………………..	1
Population policy of India………………………………………………………	8
(AP) 4. Tribes of India w.r.t Gaddi, Toda, Santhal & Jarwa.	1
………………	1
(KD) 5. Agricultural regions of India…………………………………………	1
Introduction of Green Revolution and its causes…………………………	1
Consequences of Green Revolution………………………………………	1
(SM) 6. Minerals & Power resources : Concept & Types……………………	1
Distribution & utilization of iron ore………………………………………	1
Distribution & utilization of coal …………………………………………	1
Distribution & utilization of Petroleum ………………………………………	
Distribution & utilization of Natural Gas …………………………………	2
(KD) 7. Industrial development :	2
Automobile - Historical development & distribution ………………………	1
Information Technology - Historical development & distribution ……	2
(ND) 8. Regionalisation of India …………………………………………………	2
Physiographic Division (R. L. Singh) ………………………………………………	
Economic Division (P. Sengupta)…………………………………………………	
	2
UNIT : II (GEO. OF WEST BENGAL)	2
(SM) 9. Physical Perspectives : Physiographic	2

divisions………………………	6
Forest…………………………………………………………………………………….	7
water resources………………………………………………………………..	4
(ND) 10. Resources : Agriculture, Mining & Industry………………………….	15
(ND) 11. Population : Growth, Distribution & Human development. ..	3
(AP) 12. Regional issues : Darjeeling Hills & Sundarban……………………	2
● Tutorial Classes : 5(AP)+3(ND)+5(KD)+2(SM)…………………………	
● Remedial Class. ………………………………………………………	
● Class Test & Internal exam. …………………………………………	
	TOTAL= 90

CC7 : STATISTICAL METHOD IN GEOGRAPHY	NO. OF CLASSES
UNIT WISE DIVISION	
(THEORY)	
UNIT : I (FREQUENCY DISTRIBUTION & SAMPLING)	
(ND) 1. Importance & significance of statistics in geography.	3
…………..	1
(ND) 2. Discrete & continuous data, …………………………………………….	3
Population & samples, …………………………………………………………….	3
Scales of measurement (nominal, ordinal, interval & ratio)………………	2
(ND) 3. Sources of geographical data for statistical analysis. …………..	
	1
(SM) 4. Concept of Collection of statistical data. ……………………………	2
Formation of statistical tables. ……………………………………………………	2
(SM) 5. Sampling : Need and uses in statistics. …………………………………	2
Types of sampling. ………………………………………………………………………	2
Significance of sampling. …………………………………………………………….	2
Methods of random sampling . ……………………………………………………	
(SM) 6. Theoretical distribution :	1
Frequency Distribution. ……………………………………………………………..	1
Cumulative frequency Distribution. …………………………………………………	1
Normal Distribution. …………………………………………………………………	1
Probability Distribution. ……………………………………………………………	
UNIT : II (NUMERICAL DATA ANALYSIS)	1
(AP) 7. Central tendency : Concept & classification ……………………………	1
Mean- concept, characteristics, merits, demerits, calculation. ……………	1
Median- concept, characteristics, merits, demerits, calculation. ……….	1
Mode- concept, characteristics, merits, demerits, calculation. …………	2
Partition Values- concept, characteristics, calculation. ……………………	
(AP) 8. Measures of Dispersion range :	2
Mean deviation - characteristics, merits, demerits, calculation …………	1
Standard deviation- characteristics, merits, demerits, calculation …..	1
Coefficient of variation .characteristics, merits, demerits, calculation	
(AP) 9. Association & correlation :	2
Rank correlation - characteristics, merits, demerits, calculation ………	2
Product moment correlation - characteristics, calculation ………………..	
(KD) 10. Regression :	2
Concept of Linear & non-linear Regression. ……………………………………	1
Types of Linear Regression, merits & demerits. …………………………………	1

Types of Linear Non-Regression, merits & demerits. …………………………	3	
Mathematics for Linear Regression. …………………………………………………		
(KD) 11. Time series analysis :	3	
Concept, Types, Advantages & Disadvantages. …………………………………..	3	
Moving Average method calculation. ……………………………………………………	2	
● Class test, Internal exam etc. …………………………………………………	4	TOTAL=60
● Remedial class.		
………………………………………………………………	2	
(PRACTICAL)	2	
(AP) 1. Construction of data matrix. ………………………………………………	2	
2. Construction of the frequency table . ………………………………………	4	
3. Drawing of Histogram, Polygon, Frequency Curve ………………………	4	
4. Measures of central Tendency (Mean, Median, Mood) …………………		
5. Measures of Dispersion ………………………………………………………………	2	
	5	
(KD) 6. Using Random, Systematic and Stratified sampling methods , a sample set would be drawn from a data matrix & should be located on a map. …………………………………………………………………………….	4	
	5	TOTAL=30
7. Construction of Scatter diagram and Regression line …………………….		
8. Residual Mapping ………………………………………………………………………..		
● Remedial Class. ………………………………………………………………..		
		TOTAL=90

LESSON PLAN FOR SEMESTER – 5 - 2023

UNIT WISE DIVISION	NO. OF CLASSES
CC- 11 : Research methodology & Field Work)	
THEORY	
UNIT-I (RESEARCH METHODOLOGY)	
(AP) 1. Research in geography : Meaning & Concept ………………..	1
Types of Research ………………………………………………………………….	1
Objectives & significance. …………………………………………………..	1
(ND) 2. Literature review :	
Concept, objectives & significance ………………………………………	1
Types of Literature Review ………………………………………………..	1
Formulation of research design :	
Concept, objectives & importance of Research Design. ……………	1
Characteristics of Research Design. ……………………………………	2
Steps in Research Design. …………………………………………………	1
Errors in Research Design. …………………………………………………	1
(ND) 3. Defining research problems & its importance ………………	1
Types of Research Problem ……………………………………………………	1
Concept of Research objectives …………………………………………	1
How to write research objectives ………………………………………	1
Developing a hypothesis. ………………………………………………………	1
Characteristics, types, source, function ……………………………………	1
(AP) 4. Research materials and methods :	

How to collect Research material ……………………………………..	1
Sources of Research material ……………………………………..	1
Types of Research methods. ……………………………………..	1
(AP) 5.Techniques of writing scientific reports :	
Preparing notes ……………………………………………..…	1
References …………………………………………………	1
Bibliography ………………………………………………	1
Abstract ………………………………………………………	1
Keywords……………………………………………………………..…	1
UNIT-II (FIELD WORK)	
(KD) 6.Fieldwork in geographical studies:	
Role & significance. …………………………………………..	1
Selection of study area & objectives. ………………………………	2
Pre- field academic preparations. ………………………………	2
Ethics of fieldwork. …………………………………………	2
(KD) 7.Field techniques and tools :	
Observation (participant, non- participant) ………………………	2
Questionnaires (open, closed, structured, non-structured) ………	2
Interview. …………………………………………………………	2
(SM) 8.Field techniques & tools :	
Landscape survey using transects ………………………………	2
Landscape survey using Quadrants ………………………………	2
Construction of sketches, photo and video recording . ……………	3
(SM) 9.Positioning and collection of samples. ……………………	3
Preparation of inventory from field data. ………………………	3
(SM) 10.Post-field tabulation - Types …………………………………	1
Data processing and evaluation ………………………………	2
Analysis of quantitative and qualitative data. ……………………	2
• Remedial class. …………………………………………	3
• Class test & Internal exam. ……………………………	2 = TOTAL=60
PRACTICAL - **(SM & KD)**	
Socioeconomic data collection…………………………………..…	10
Preparation of Maps …………………………………………………	14
Interpretation ……………………………………………………………	6 = TOTAL=30
	TOTAL=90
CC12 : REMOTE SENSING & GIS (THEORY)	**NO. OF CLASSES**
Unit I: Remote Sensing	
1. Principles of Remote Sensing (RS): Types of RS satellites and sensors.	6 (KD)
2. Sensor resolutions and their applications with reference to IRS and Landsat missions. ………………………………………	6 (KD)
3. Remedial class. ………………………………………………	1 (KD)
4. Preparation of False Colour Composites from IRS LISS-3 and Landsat TM and OLI data. ………………………………………	4 (SM)
5. a) Principles of image correction and interpretation. ……………	4 (SM)
b) Preparation of inventories of land use land cover (LULC) features from satellite images. ………………………………	4 (SM)

6. Remedial class. ……………………………………………………………	1 (SM)
Unit II: GIS & Global Navigation Satellite System	
7. Concept of GIS and its applicability. ………………………………… GIS data structures: types: spatial and non-spatial, raster & vector. ……………………………………………………………………	4 (AP) 4 (AP)
8. Principles of preparing attribute tables and data manipulation and overlay analysis. ……………………………………………………………	4 (AP) 1 (AP)
9. Remedial class. ………………………………………………………….	6 (ND)
10. Principles of GNSS positioning and waypoint collection. ………	6 (ND)
11. Transferring waypoints to GIS. Area and length calculation from GNSS data. ………………………………………………………… ● Remedial class. ………………………………………………………… ● Class Test & Internal exam. ……………………………………………….	1 3 TOTAL=55
PRACTICAL – (30 classes)	8 (AP)
1. Georeferencing of maps and images using open source software. …………………………………………………………………….	5 (SM)
2. Preparation of FCC and identification of features using standard FCC and other band combinations. …………………………….	12(AP) 5 TOTAL = 30
3. Digitisation of features. Data attachment and preparation of annotated thematic maps (choropleth,pie chart & bar graphs). … ● Remedial class. ………………………………………………………	
	TOTAL=90

DSE1 : SOIL & BIOGEOGRAPHY	ONLY THEORY
Soil Geography :	
(AP) 1. Factors of soil formation ………………………………………………	3
Man as an active agent of soil transformation ………………………………	1
(AP) 2. Soil Profile : concept & general characteristics …………………………	2
Soil forming processes …………………………………………………………	2
Origin & Profile characteristics of Podzol …………………………………….	2
Origin & Profile characteristics of Laterite ……………………………………	2
Origin & Profile characteristics of Chernozem ………………………………..	2
(SM) 3. Definition & significance of soil properties :	
Texture : characteristics, role & significance …………………………………..	2
Structure : characteristics, role & significance ………………………………..	2
Moisture: characteristics, role & significance ……………………………….	2
(SM) 4. Definition & significance of soil properties :	
Soil PH : Role & significance …………………………………………………...	2
Organic Matter : Role & significance ………………………………………….	2
NPK : Role & significance ……………………………………………………....	2

(BC) 5. Soil erosion & degradation : concept …………………………………	2
Factors & Processes of soil erosion …………………………………………….	2
Consequences of soil erosion & its mitigation Measures. …………………….	2
Factors & Processes of soil degradation ………………………………………	2
Consequences of soil degradation & its mitigation Measures.………………	2
(BC) 6. Principles of soil classification : Genetic classification ……………	2
USDA classification …………………………………………………………………	2
Concept of land capability & its classification. ………………………………..	2
BIOGEOGRAPHY :	
(KD) 7. Concepts of biosphere, ecosystem …………………………… …………	2
Concept of biome , ecotone ……………………………………… …………	1
Concept of community, niche …………………………………………….	1
Concept of succession and ecology. ………………………………………………	2
(KD) 8. Concepts of trophic structure ……………………………… …………	2
Food chain & food web. …………………………………………………………	2
Energy flow in ecosystems ………………………………………………………	2
(ND) 9. Concept of Biome & its characteristics ………………………………	1
Geographical extent & characteristics features of:	
Tropical rainforest Biome ……………………………………………………….	2
Taiga Biome ……………………………………………………………………	2
Grassland Biome ………………………………………………………………	2
(ND) 10. Biogeochemical cycles : concept and importance ………………	1
CO2 cycle : process & importance ………………………………………………	1
Nitrogen : process & importance …………………………………………….	1
(MH) 11. Spatial distribution of world fauna ………………………………	3
(MH) 12. Measures of conservation of biodiversity in India ………………	2
Man & Biosphere Program.. ……………………………………	1
● **Tutorial Classes : 5(AP) + 5(KD) + 3(SM) + 2(ND).** ……………………	15
● **Remedial class.** …………………………………………………………	2
● **Class test & Internal exam.** ……………………………………………	3
	TOTAL = 90

DSE2 : SETTLEMENT GEOGRAPHY (ONLY THEORY)	
RURAL SETTLEMENT :	
(KD) 1. Scope & content of Settlement Geography ………………………………	2
Scope & content of rural geography ……………………………………………	3
Scope & content of urban geography ……………………………………………	3
Scope & content of semi-urban areas……………………………………………	3
(AP) 2. Rural settlement : Definition & concept …………………………………	3
Nature & characteristics of rural settlement …………………………………………	3
(KD) 3. Morphology of Rural settlements : site & situation ……………………	1
Definition of rural settlement , types & patterns …………………………………	2
Internal layout of rural settlement ……………………………………………………	2
External layout of rural settlement …………………………………………………	2
(ND) 4. Rural house types w.r.t. India ………………………………………………	3
Social segregation in rural areas ………………………………………………………	3
Census categories of rural settlement ……………………………………………………	2

(ND) 5.Problems & policies related to rural infrastructure with reference to India. ………………………………………………………………………….	**3**
URBAN SETTLEMENT :	**2**
(ND) 6. Urban settlement : census definition (Temporal) ……………………	**3**
Characteristics of urban settlements & its categories in India. ……………	**3**
(BC) 7. Urban morphology : concept and characteristics ……………………	**2**
Classical models : Burgess metropolitan concept …………………………………	**2**
Hoyt metropolitan concept …………………………………………………………………	**2**
Harris-Ullman metropolitan concept …………………………………………………..	**2**
(AP) 8. City region & conurbation : concept & characteristics ………………	**2**
Functional classification of cities : Harris ……………………………………………	**2**
Functional classification of cities : Nelson …………………………………………	**2**
Functional classification of cities : McKenzie. ……………………………………	**1**
(SM) 9. Aspects of urban places : Definition & hierarchy ……………………	**1**
Concept of Location, site & situation of urban settlement …………………..	**1**
Size & spacing of cities ……………………………………………………………………….	**1**
The Rank size rule ……………………………………………………………………………..	**1**
The law of Primate City. ………………………………………………………………………	**4**
(SM) 10. Urban Hierarchies : Central Place Theory …………………………………	**3**
August Losch's theory of market centres ………………………………………………	**1**
Comparison between two theories … …………………………………………………	**15**
● **Tutorial Classes : 4(AP) + 4(KD) + 4(ND) + 3(SM)…** ………………	**3**
● **Remedial class.** …………………………………………………………………	**2**
● **Class test & Internal exam.** …………………………………………………………..	**TOTAL = 90**