

DIRECTORATE OF DISTANCE EDUCATION



SYLLABUS
M.A. Course
in
Geography



VIDYASAGAR UNIVERSITY
MIDNAPORE - 721102

M.Sc. in Geography

PART 1

PAPER - I (EXAMINATION TIME :4 HOURS) (100 MARKS)

MODULE 1: GEO-TECTONICS & GEOMORPHOLOGY

Full Marks : 50 Number of lectures to be delivered for each module is 50.

Unit I

1. Theories of the origin of the earth.
2. Study of the interior of the earth and the earth's crust
3. Isostatic adjustments of the earth's crust
4. Doctrine of Uniformitarianism.

Unit -II

1. Plate Tectonics and Neo-tectonics.
2. Plate tectonics and Earthquakes
3. Plate tectonics and volcanism
4. Plate tectonics and Orogeny

Unit III

1. Evolution of landforms by the process - Fluvial, Glacial, Aeolian, Karst and Coastal.
2. Landforms developed by the interruptions of the Fluvial Cycle.
3. Sea level Changes and raised Beach features.

Unit -IV

1. Rocks and landforms
2. Processes of weathering, mass-wasting and erosion and resultant landforms.
3. Slope development and slope facets
4. Concept of grade, profile of equilibrium and base level.

Unit V

1. Concept of cycle of erosion(W.M.Davis, W.Penck and L.C. King).

2. Non-cyclic concept (Hack, Chorley and Schumm).
3. Applied geomorphology: Application of geomorphology in planning and development.

PAPER- I: MODULE 2: OCEANOGRAPHY & HYDROLOGY

Full Marks : 50 Number of Lectures to be delivered for each module is 50.

Unit I

1. Study of the continental and oceanic crusts
2. Origin and permanency of the ocean basins.
3. Ocean waters - Salinity and temperature and chemical compositions.

Unit - II

1. Air-sea interactions; Ocean circulations
2. Dynamics of waves, tides and currents.
3. Marine ecosystem
4. Marine sediments

Unit -III

- a. Onshore and offshore oceanic regions
- b. Geomorphology of coastal regions
- c. Coastal ecology-coastal dunes, mangroves and coral reefs.

Unit - IV

1. Hydrology - definition and relation with the environment.
2. Hydrological cycle, global and basin hydrology.
3. Estimation and measurement of hydrological parameters
4. Study of trace elements and dissolved gases in water

Unit -V

1. Ground water studies - concept of aquifers, recharge and discharge
2. Concept of watershed and major watersheds in India.
3. Wetland Ecosystems.
4. Major wetlands of India and West Bengal.

PAPER -II : (EXAMINATION TIME : 4 HOURS)

MODULE-3 : CLIMATOLOGY

Full Marks : 50 Number of lectures to be delivered for each module is 50.

Unit-I

1. Scope and nature of climatology ; Climatology and meteorology.
2. Atmospheric composition- its evolution through phases, changes with height; Hydrostatic equation.
3. Green house gases - sources and characteristics.

Unit -II

1. Nature of Radiation and Radiation laws; Heat balance in the Earth- Atmosphere system.
2. Factors influencing vertical and horizontal distribution of temperature.
3. Various measures of atmospheric moisture content; Saturation, Unsaturation, and Supersaturation; vapour pressure; Adiabatic temperature changes; Lapse rates; Atmospheric stability and instability.

Unit - III

1. Factors influencing air motion; Surface and upper air circulations- thermal wind and jet streams.
2. Agro-meteorological terms-Methods & Measurement
3. Mechanism of precipitation.

Unit -IV

1. Dynamics of air masses-source areas and modifications.
2. Tropical cyclones and related hazards; Fronts and extra-tropical cyclones.
3. Thunderstorms and tornadoes.

Unit-V

1. Schemes of climatic classification-Stamp and Trewartha.

2. Global climatic changes and global warming.
3. ENSO phenomena.

MODULE-4 : ENVIRONMENT STUDY

Full Marks : 50 Number of lectures to be delivered for each module is 50

Unit -I

1. Concept of environmental systems; Components of physical environment and their interrelations.
2. Concept of ecosystem; components and structure of ecosystem; Food chain and Food-web; Ecological pyramids.
3. Major ecosystems of the world.

Unit-II

1. Environmental degradation and manifestations-land, water(surface and ground)and air.
2. Concept of managed environmental systems:(a) agricultural ecosystems and (b) urban ecosystems.

Unit -III

1. Components of socio-cultural environment
2. Importance of socio-cultural environment for human welfare.
3. Relationship between physical and socio-cultural problems.

Unit-IV

1. Environment and development debate.
2. Environmental movements-Chipko, Silent valley, Narmada-Bachao Andolan.
3. Concept of sustainable development.

Unit -V

1. Environmental Ethics
2. Multi-purpose River Valley project in India
3. Environmental organizations (national and international) and their roles

PAPER -III : (EXAMINATION TIME : 4 HOURS)

MODULE-5 : SETTLEMENT STUDY

Full Marks : 50 Number of lectures to be delivered for each module is 50.

Unit- I

1. Evolution and growth of human settlement.
2. Settlement hierarchy : Christaller's central place theory, theory of Losch.
3. Spatial distribution of settlements : G.K.Zipf's rank-size rule and M. Jefferson's theory of Primate city.

Unit -II

1. Concept, types and patterns of rural settlement.
2. Rural house forms and types in India.
3. Concept of rural service centers

Unit - III

1. Concept of urban settlement definitions in different countries; Census categories of Indian urban centres
2. Processes of urbanisation
3. Morphological structure of cities-different theories.

Unit - IV

1. Functional classification of urban centers-different schemes of classification
2. Environmental problems in urban areas-with Indian examples.
3. Social lay-out in urban areas-with Indian examples.

Unit- V

1. Concept of conurbation, urban agglomeration.
2. Social area analysis of urban centers.
3. Concepts of urban sprawl and rural-urban fringe.

MODULE-6 : POPULATION STUDY

Full Marks : 50 Number of lectures to be delivered for each module is 50.

Unit - I

1. Nature of population Geography as an important branch of human Geography.
2. Population geography and demography.
3. Sources of population data and their nature and quality.

Unit -II

1. Population structure and composition: Types, spatial and temporal variation, determinants and its importance on different aspect of population with special reference to India.
2. Concepts of Population Characteristics and Composition.
3. Population related problems in developed and developing countries.

Unit -III

1. Dynamics of Population Change-fertility, mortality and migration (Concept, measures and determinants).
2. Migration: Types, streams of migration, and consequence of migration: Problems of dislocation.
3. Lee and Ravenstein Law's of migration.

Unit - IV

1. Theories and approaches of population growth: Malthus and Marx.
2. Concept of morbidity, Nutrition and famine.
3. Factors determining population growth and spatial distribution.

Unit-V

1. Demographic transition and its spatial dimension.
2. Concept of poverty and Human Poverty index.
3. Human development Index and its implications.

PAPER -IV : (EXAMINATION TIME : 4 HOURS)

MODULE-7 : LANDUSE PLANNING AND MANAGEMENT

Full Marks : 50 Number of lectures to be delivered for each module is 50.

Unit -I

1. Concept of land use: factors governing land utilization and causing changes in land use pattern.
2. Principles of land use: after Graham, Lewis and Stamp
3. Importance of soil as a determinant of land use.

Unit- II

1. Land reclamation: Alkaline soil; case studies in Sundarban and east kolkata;
2. Acidic soils of India; problems and reclamation .
3. Mountain and Desert soil of India. Problems and reclamation.

Unit- III

1. Ownership, occupancy and Govt.control on land use.
2. Policy regarding wetland, urban land, river valley planning, Industrial and Mining.
3. Concept of wasteland and role of National Waste land Development board.

Unit - IV

1. Objectives and principles, techniques and Methods of land use survey.
2. Land use Planning Methods and techniques (Rural & Urban)

Unit -V

1. Land capability classification.
2. Environmental impacts of land use Changes.
3. Land use Planning in India.

MODULE-8 : RESOURCES USE AND MANAGEMENT

Full Marks : 50 Number of lectures to be delivered for each module is 50.

Unit-I

1. Concept of resource as related to economic, technological and cultural development stages.
2. Classification of resource according to biogenesis, renewability, availability and distribution conditions (Diversity & Disparity).
3. Concept of economic, social and environmental sustainability

Unit - II

1. Pattern and use of major resources :
2. Land resources use misuse, measures to check soil erosion.
3. Use and misuse of water resources and related hazards, marine resources and hazards from pollution (Including marine resource)

Unit - III

1. Use and misuse of forest resource,
2. Concept of social forestry and joint forest management.
3. Agricultural resources: role to meet the nutritional requirements of the world population, supply raw materials for the industries, alternative conservation and alternative methods of production.

Unit -IV

1. Mineral resources : Techniques of maintaining the reserve level by adopting scientific conservation and recycling process.
2. Energy resources: necessities for increasing reliance on conventional to non-conventional resources.
3. Industrial resources: Linkage with other resource basis inter-regional transfer of resource and social adaptation of technology.

Unit-V

1. Human resource development and patterns of use.
2. Disparities in development between developed and developing countries.
3. Disparities arising from national and international policies.

PAPER -V : (PRACTICAL)

MODULE-9 : GROUND SURVEY AND AERIAL PHOTO

INTERPRETATION

Full Marks : 50 Number of lectures to be delivered for each module is 50.

Unit-I

1. Contour Survey on the basis of leveling by Dumpy Level and Prismatic Compass.
2. Traverse Survey by (i) Plane Table (Intersection Method) and (ii) Prismatic Compass.

Unit -II

1. Determination of height by Transit Theodolite (Base Inaccessible method).
2. Survey of roads in a study area by a GPS handset and preparation of a road map.

Unit -III

1. Advantages of Aerial photographs over conventional on-the-ground observations, Types, scales and ground coverage, Basic Negative-to-Positive Photographic Sequence, Black & White Films, Colour Films.
2. Aerial cameras, film exposures (numerical problems), stereoscopy, pseudoscopy, lens stereoscope, Mirror stereoscope, image parallax and determination of height.

Unit - IV

1. Air Photo Interpretation; shape, size, pattern, tone, texture, shadows and site.
2. Monoscopic and stereoscopic Interpretation of airphotos for geomorphic land use features

Unit-V

PRACTICAL NOTE BOOK AND VIVA-VOCE

MODULE-10 : QUANTITATIVE METHODS IN GEOGRAPHY

Full Marks : 50 Number of lectures to be delivered for each module is 50

Unit- I

1. Sampling and summarizing Geographical data: Types of sampling methods, Estimates from sample.
2. Measuring inequality-Lorens Curve.
3. Analysis of combination: Weaver's Combination Index.

Unit-II

1. Probability: Concept and definitions, Laws of Addition and Multiplication.
2. Concept of Probability distribution; Normal Probability distribution.
3. Properties of Normal Curve.

Unit-III

1. Bi-variate distribution and Correlation: Scatter diagrams and regression analysis.
2. Measures of Correlation: Product Moment Correlation coefficient and Spearman's Rank correlation coefficient.
3. Hypothesis Tests X^2 test and student's T-test.

Unit- IV

1. Nearest Neighbour Analysis.
2. Shortest path analysis.
3. Transport connectivity Indices.

Unit -V

PRACTICAL NOTE BOOK & VIVA-VOCE

M.Sc. in GEOGRAPHY

PART - II

PAPER - VI

(Examination TIME : 4 HOURS)

Module - 11 : GEOGRAPHICAL THOUGHTS

Unit- I

The field of Geography; its place in the classification of Sciences vis-a vis other Disciplines; Geography as a Social Science, Physical and Human Geography.

Unit-II

Dualisms and dichotomies in Geography; Determinism and Possibilism, Systematic(Nomothetic) and Regional (Idiographic) Geography.

Unit-III

Relationship between systematic Sciences and Regional Geography; Environmental determinism, possibilism and ecological approach. Encyclopaedism, Positivism, Development of Behavioural Geography, Quantitative Revolution and Geographical Information System, Development of Critical Social Geography - Radicalism.

Unit- IV

Welfare Geography and Gender issues, Post Modernism in Geography.

Unit-V

Concept of Space in Geography-Marital space and Social space; Advances in geographical research.

