

ADMISSION-CALL- 0761-4007445/6541666 / 09425068494

E-MAIL:- mnpedu@rediffmail.com

WEBSITE:- www.maanarmadaedu.org

COURSE STRUCTURE

Full Marks -800

[Theory -500 Pare Head -300]

Part – I

Paper –1 (T)

- I) Geomorphology and Geotectonic
- II) Oceanography and Hydrology

Paper- 2 (T)

- I) Climatology
- II) Soil and Bio-Geography

Paper-3 (T)

- I) Economic Geography
- II) Population Geography

Paper- 4 (T)

- I) Scale
- II) Cartogram
- III) Geological Map
- IV) Topographical Map

Part -II

Paper- 5 (T)

- I) Geographical Thought
- II) Political Geography
- III) Settlement Geography

Paper- 6 (T)

- I) Regional Geography of India
- II) Environmental Geography
(Contemporary Issues)

Paper- 7 (P)

- I) GIS, Remote Sensing, Arial Photo
- II) Map Projection

Paper- 8 (P)

- I) Statistical Method

II) Survey Report

PAPER- 1

GEOTECTONICS AND GEOMORPHOLOGY (Th)

Unit-1 Geotectonics

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

Unit- II Geomorphology

- 2.1 General degradational processes: processes of rock weathering and their effects on landform
- 2.2 Fluvial processes and landforms
- 2.3 Glacial processes and landforms fluvio-glacial landforms
- 2.4 Aeolian processes and landforms: Fluvio-glacial processes

Unit- III Geomorphology and Structure

- 3.1 Basic concepts of Geomorphology as postulated by Thornbury
- 3.2 Landforms on granite and basalt
- 3.3 Landforms on limestone
- 3.4 Development of river network and landforms on uniclinal and folded structure

Unit- IV Theories of Geomorphology

- 4.1 Normal cycle of erosion by W.M. Davis
- 4.2 Views of W. Penck on normal cycle of erosion
- 4.3 Cycle of Pediplanation by L.C. King
- 4.4 Dynamic Equilibrium theory J.T. Hack
 - Figures in the parentheses indicate classe

Hydrology and Oceanography (Th.)

Unit-I Surface Hydrology

- 1.1 Definition scope and content of Hydrology
- 1.2 Global Hydrological cycle its physical and biological role
- 1.3 Drainage basin as a hydrological unit
- 1.4 Run off: controlling factors-infiltration evaporation and transpiration: Run off cycle

Unit-II Groundwater Hydrology

- 2.1 Physical properties of ground water
- 2.2 Chemical properties of ground water
- 2.3 Components factors and processes controlling storage and movement of ground water
- 2.4 Types of aquifers and issues related to their over utilization

Unit-III Ocean Water

- 3.1 Physical properties of ocean water
- 3.2 Chemical properties of ocean water
- 3.3 Concept of water mass: Waves. Tides and their influence
- 3.4 Ocean currents and their influence

Unit-IV Ocean Basins

- 4.1 Ocean sediments: origin and classification
- 4.2 Coral reefs and atolls: types and factors coral and volcanic islands
- 4.3 Major features of the ocean floor: formation explained by plate tectonics
- 4.4 Resource potential of the oceans

PAPER-2

Climatology (Th)

Unit- I Atmospheric Layers and Thermal Variation

- 1.1 Nature composition and by ered structure of the atmosphere
- 1.2 Factors controlling insolation: heat budget of the atmosphere
- 1.3 Horizontal and vertical distribution of temperature: Inversion of temperature
- 1.4 Green house effect and importance of ozone layer

Unit- II Atmospheric Layers and Wind Circulation

- 2.1 Global atmospheric pressure belts and their oscillation
- 2.2 General wind circulation
- 2.3 Jet Stream and index cycle
- 2.4 Monsoon mechanism with reference to jet stream

Unit- III Precipitation and Air mass

- 3.1 Processes and forms of condensation
- 3.2 Mechanism and forms of precipitation- Ice Crystal theory. Collision-coalescence Theory
- 3.3 Airmass: typology. origin and characteristics
- 3.4 Warm and cold fronts: frontogenesis and frontolysis

Unit- IV Weather Disturbance and Climatic Classification

- 4.1 Tropical cyclone
- 4.2 Mid-latitude cyclone and anti-cyclone
- 4.3 Climatic classification after Koppen
- 4.4 Climatic Classification after Thornthwaite: 1931 and 1948

Soil and Bio-Geography (Th)

Unit-I Soil Formation, Profile Characteristics and Properties

- 1.1 Definition and factors responsible for soil formation
- 1.2 Concept of V.V. Dokuchaev- ektodynamomorphie and endodynamomorphie soils: Concept of N.M.Sibirtzev-Zonal. Azonal and Intra zonal soils
- 1.3 Profile characteristics of Pedalfer group :Laterite and Podzol: Profile characteristics of Pedocal group: Chernozem
- 1.4 Physical properties of soil: Texture. Structure and Moisture: Chemical properties of soil: pH. Organic matter and NPK

Unit-II Soil and Land Management

- 2.1 Soil erosion: Processes and controlling factors
- 2.2 Various measures of soil conservation
- 2.3 Principles of soil classification: Genetic School and USDA Principle of land classification: UK and USDA
- 2.4 Land Capability classification by Storie

Unit-III Concepts in Bio-Geography

- 3.1 Scope and content of Bio Geography: Nature of Biosphere
- 3.2 Concepts of Ecology. Ecosystem and major natural ecosystems: Terrestrial and marine: Trophic structure. Food chain and Food web
- 3.3 Laws of Thermodynamics
- 3.4 Energy flow in ecosystems

Unit-IV Ecological Aspects of Bio- Geography

- 4.1 Bio-geo-chemical cycles
- 4.2 Concept of biomes. Ecosystem and Community: study of Tropical rain forest. Taiga and Grasslands
- 4.3 Deforestation: Causes and consequences
- 4.4 Significance of Biodiversity and controlling factors
 - Figures in the parentheses indicate number classes required.

PAPER-3

ECONOMIC GEOGRAPHY (Th)

Unit- I RESOURCES

- 1.1 Concept and classification of resources: Economic and Environmental approaches to resource utilization.
- 1.2 Resource depletion and resource conservation: Forrester-Meadows model on Limits to Growth: Sustainable use of resources
- 1.3 Land as resource: Problems of land acquisition in developing countries: Development of EPZ and SEZ: Land reforms in India with special reference to West Bengal.
- 1.4 Global scenario of resource related problems and trend of management with reference to Iron Ore. Bauxite. Coal. Petroleum and Nuclear power

Unit- II PRIMARY ACTIVITIES

- 2.1 Primary activities: Concept. classification and importance.
- 2.2 World view of primary activities-problems and trend of management with reference to forestry, fishing and livestock farming.
- 2.3 Critical appreciation of agricultural systems: Intensive agriculture (Rice). Extensive agriculture (Wheat). Plantation Farming (Tea) and Mixed farming (NW Europe).
- 2.4 Land use and Agricultural models: L.D.Stamp. Von Thunen and Weaver

Unit- III SECONDARY ACTIVITIES

- 3.1 Secondary Activities: concept. Classification and importance
- 3.2 Factors of industrial location: industrial location and economic growth models: Weber. Losch and Gunner Myrdal.
- 3.3 Industries-their resource base. Distribution. Potentials of growth and problems with reference to Iron and steel (UK. Japan. and India). Cotton textile (USA and India). Petrochemicals (USA and India) and Food processing (India).
- 3.4 Industrial association. integration. infrastructure and problems with reference Lake District. Kanto Plains. and Kolkata – Haldia.

Unit- IV TERTIARY ACTIVITIES

- 4.1 Tertiary activities and service: concept. Classification and importance
- 4.2 Trade: as an engine and hindrance to growth. Determinants. trade strategies-import substitution and export promotion.
- 4.3 International trade: Ricardian theory international trade with reference to GATT and WTO.
- 4.4 Transport: concept of distance accessibility and connectivity relative cost advantage of different modes of transport:
 - Figures in the parentheses indicate number classes required.

POPULATION STUDY (Th)

Unit-I

1. Population Geography as distinct from demography: scope and contents.
2. Sources of population data. their nature and quality.
3. Population characteristics and composition: age. Sex. Education. Religion. Casts. and tribes.
4. Theory of population dynamics – fertility. mortality. migration.
5. Factors determining population growth. distribution and density with spl. Ref. to India.
6. Migration: Types. patterns and steams of migration and controlling factors.

Unit-II

1. Theories of population growth –classical and modern theories.
2. Demographic transition and the problems of developed and developing countries.

Unit-III

1. India's population policies.
2. Problems of displaced population.
3. Human development index and its components: the Indian scenario.

PAPER-4 (P)

1.1 Scale

- a) Linear
- b) Diagonal
- c) Vernier

1.2 Cartograms: Representation of economic data

- a) Divided proportional circles
- b) Flow diagram
- c) Choropleth
- d) Dots and spheres
- e) Age- Sex pyramid
- f) Bar graph

PAPER- 5

Philosophy of Geography (Th)

Geographical Thought

Unit- I Nature Of Geography

- 1.1 Geography and its relation with other disciplines
- 1.2 Encyclopaedism. Geographical ideas during ancient period
- 1.3 Foundation of modern geography: Contribution of German, French, British and American School.
- 1.4 Determinism and possibilism
- 1.5 Development of Geography during medieval period
- 1.6 Emergence of scientific ideas in Modern Geography

Unit- II Basic Concepts

- 2.1 Ideographic and Nomothetic approaches
- 2.2 Man-Environment relation
- 2.3 Location. time and space
- 2.4 Areal differentiation and Spatial organization

Unit- III Modern Thoughts

- 3.1 Empiricism
- 3.2 Positivism
- 3.3 Environmental determinism
- 3.4 Possibilism

Unit- IV Contemporary Thoughts

- 4.1 Structuralism
- 4.2 Quantitative Revolution
- 4.3 Radicalism
- 4.4 Humanistic and Behavioural Approaches

- Figures in the parentheses indicate number classes required

Political Geography

Unit- I

1. Geographical perspective on formation of state, nation and nation-state, core and peripheral areas, capitals, frontiers and boundaries, border lands and buffer zones, buffer states, land locked nation
2. Geostrategic views- Heartland and Rimland theories
3. Politics of world resources with special reference to energy resources, economic, political, military blocks; political geography of foreign trade.

Unit- II

1. Partition of India and its implication
2. Reorganization of Indian states since independence.
3. International and interstate water dispute in Indian subcontinent.

Settlement Geography (Th)

SETTLEMENT STUDY

Unit- I

1. Theories of evolution of human settlement
2. Size and distributions with theoretical models
3. Settlement hierarchy: theories of Christaller and Losch: hierarchy of settlements in India, primacy of cities.

Unit- II Rural Settlements

1. Definition, nature and characteristics of rural settlements
2. Morphology of rural settlements: site and situation, layout-internal and external
3. Rural house types with reference to India
4. Social segregation in rural areas: Census categories of rural settlements

Unit- III Urban Settlements

1. Census definition and categories in India
2. Urban morphology: Classical models-Burgess. Homer Hoyt. Harris and Ullman
3. Metropolitan concept. City-region and conurbation
4. Functional classification of cities: Harris. Nelson and McKenzie
 - Figures in the parentheses indicate number classes required

PAPER- 6

Regional Geography of India (Th)

Unit-I Concepts and Bases

1. Concept of region, nature and types of regions
2. Approaches to regionalization- scale and dimension
3. Bases of regional division-physical
4. Bases of regional division- socio-economic

Unit- II General Geography of India

1. Structure and Physiography
2. Drainage (Peninsular and Extra Peninsular)
3. Climatic, Edaphic and Biotic regions of India
4. Agricultural regions (as per ICAR)

Unit- III Case Studies

1. Meghalaya Plateau as Physiographic Region
2. Damodar Valley as Planning Region
3. Western Rajasthan as Arid Region
4. Sundarbans as Biotic Region

Unit- IV Studies of Geographical Problems

1. Problems of unreliability of rainfall
2. Problems of soil salinity and its mitigation
3. Problems of development of SEZ in India
4. Problems of slum and urban rehabilitation in India
 - Figures in the parentheses indicate number classes required

Environment Geography (Th)

(Contemporary Issues)

Unit-I Climatic and Biotic Hazards

1. Concept of hazards and disaster. Natural hazards- natural and man-made hazards
2. Seasonal Climatic hazards: Flood, and drought- mechanism, environmental impact and management
3. Occasional climatic hazards: Hailstones and tornadoes- mechanism, environmental impact and management
4. Biotic hazards: Deforestation and loss of bio-diversity-impact and conservation of biotic resources

Unit- II Other Terrestrial Hazards in the Indian Sub-continent

1. Edaphic hazards: Salinization and Desertification- Mechanism, impact and management
2. Geomorphic hazards: Landslide, River bank erosion and Coastal erosion—mechanism, impact and management
3. Tectonic hazards: Earthquake—impact and precautionary measures
4. Water related hazards: Contamination of ground water and fall of piezometric level

Unit- III Human Development in the Third World

1. Concept of development and under development: Basic indicators of economic development
2. Economic disparity as constraint of development: per capita income, purchasing power and standard of living
3. Poverty: Poverty line, Unemployment, Dependency ratio, Work participation and Poverty alleviation
4. Economic impact of globalization

Unit- IV Human Development in the Third World

1. Basic indicators of human and gender development
2. Social inequality as constraint of development: caste and religious fundamentalism; gender bias

3. Demographic constraint; Population growth. Malnutrition. Food security and Hunger.
Morbidity and Mortality
4. Sustainable development
 - Figures in the parentheses indicate number classes required

Unit- III

1. Environment-development debate: Environmental movements: Chipko, Silent valley & Narmada Bachao Andolan.
2. Environmental ethics; Concept of Sustainable Development.

PAPER- 7

(I) GIS and Remote Sensing (Pr.)

Unit-I GIS

1. Georeferencing of scanned maps and satellite images applying reference spheroids (WGS-84 and Everest) and Projections (Universal Transverse Mercator's and Polyconic)
2. Digitization of point, line and polygon layers: Attachment of appropriate attribute tables
3. Digitization of administrative maps and attachment of attribute tables
4. Preparation of thematic maps: Choropleths and maps with Bar and Pie diagrams

Unit- II Remote Sensing

1. Principles of Photogrammetry, Types of aerial photographs, Determination of scales of aerial photographs
2. Identification of physical and cultural features by fusing two overlapping photographs and their verification with topographical sheets with interpretation.
3. Preparation and interpretation of land use/land cover map using three overlapping aerial photographs
4. Resolution of satellite sensors with special reference to landsat and IRS series:

Unit- III

1. Aerial photograph

(II) Unit-I Map Projection

1. Concept, classification and suitability
2. Construction and properties of Zenithal Stereographic Projection (Polar Case)
3. Non Perspective Projection: Simple Conical with one standard parallel, Bonne's Sinusoidal, Polyconic and Cylindrical Equal Area
4. Mercator's Projection

(III) Climatic Chart

PAPER- 8

(I) A. Statistical Method

- Preparation of frequency distribution table
- Histogram
- Frequency polygon
- Cumulative frequency curve
- Measures of central tendency (Mean, Median and mode)
- Measures of dispersions-mean deviation and standard deviation

(II) B. Field Report

On the basis of local survey on any one of the following themes----

- I. Agricultural land use survey of the part of a mouza
- II. House hold survey of a locality – Socio-Economic survey (Family Size age-sex structure educational background, occupation

[A written report is to be submitted by individual student with five thousand words along with approx to maps and illustration]

- III Viva –Voice