

GEOGRAPHY

Course Structure

Parts/Units	Topics	Marks
Part A	Fundamentals of Physical Geography	30
Unit - 1	Geography as a Discipline	
Unit - 2	The Earth	
Unit - 3	Landforms	
Unit - 4	Climate	
Unit - 5	Water (Oceans)	
Unit - 6	Life on the Earth	
Unit - 7	Map and Diagram	5
Part B	India – Physical Environment	30
Unit - 8	Introduction	
Unit - 9	Physiography	
Unit - 10	Climate, Vegetation, & Soil	
Unit - 11	Natural Hazards & Disasters	
Unit - 12	Map and Diagram	5
Part C	Practical Work	30
Unit - 1	Fundamentals of Maps	
Unit - 2	Topographic and Weather Maps	
Unit - 3	Practical Record Book and Viva	
Total		100

Course Syllabus

Part A: Fundamentals of Physical Geography

Unit-1: Geography as a Discipline

- Geography as:
 - An integrating discipline
 - A science of spatial attributes
- Branches of Geography:
 - Physical Geography
 - Human Geography
- Scope and Career Options

Unit-2: The Earth

- Origin and evolution of the earth
 - Interior of the earth
- Wegener's continental drift theory and plate tectonics
- Earthquakes and volcanoes:
 - Causes
 - Types
 - Effects

Unit-3: Landforms

- Rocks:
 - Types
 - Characteristics
- Landforms and their evolution
- Geomorphic processes:
 - Weathering

- Mass wasting
- Erosion
- Deposition
- Soil-formation

Unit 4: Climate

- Atmosphere:
 - Composition and structure
 - Elements of weather and climate
- Insolation:
 - Angle of incidence and distribution
 - Heat Budget of the earth-heating and cooling of atmosphere (conduction, convection, terrestrial radiation and advection)
- Temperature:
 - Factors controlling temperature
 - Distribution of temperature - horizontal and vertical
 - Inversion of temperature
- Pressure-pressure belts:
 - Winds-planetary
 - Seasonal and local
 - Air masses and fronts
 - Tropical and extratropical cyclones
- Precipitation:
 - Evaporation
 - Condensation-dew
 - Frost
 - Fog
 - Mist
 - Cloud
 - Rainfall - types and world distribution

- World climates:
 - Classification (Koeppen and Thornthwaite)
 - Global warming
 - Climatic changes
- Climate and Global Concerns

Unit 5: Hydrosphere

- Basics of Oceanography
- Oceans:
 - Distribution of temperature
 - Distribution of salinity
- Movements of:
 - Ocean water-waves
 - Tides
 - Currents
- Submarine reliefs
- Ocean resources and pollution

Unit 6: Biosphere

- Biosphere:
 - Importance of plants and other organisms
 - Biodiversity and conservation
 - Ecosystem
 - Ecological balance

Unit 7: Map work

- Identification of features based on 1 to 6 units on the outline/Physical/Political map of the world.

Part - B: India - Physical Environment

Unit - 8: Introduction

- Location
- Space relations
- India's place in the world

Unit - 9: Physiography

- Structure and Relief
 - Physiographic Divisions
- Drainage systems
 - Concept of river basins
 - Watershed
 - The Himalayan rivers
 - The Peninsular rivers

Unit - 10: Climate, Vegetation and Soil

- Weather and climate:
- Spatial and temporal distribution of:
 - Temperature
 - Pressure
 - Winds
 - Rainfall
- Indian monsoon:
 - Mechanism
 - Onset and withdrawal
 - Variability of rainfalls - spatial and temporal
 - Use of weather charts
 - Climatic types (Koeppen)

- Natural vegetation:
 - Types
 - Distribution
 - Wild life
 - Conservation
 - Biosphere reserves
- Soils:
 - Major types (ICAR's classification) and their distribution
 - Soil degradation
 - Soil conservation

Unit-11: Hazards and Disasters: Causes, Consequences and Management

- Floods
 - Cloudbursts
- Droughts:
 - Types
 - Impact
- Earthquakes and Tsunami
- Cyclones:
 - Features
 - Impact
- Landslides

Unit – 12: Map Work

- Features based on above units for locating and labelling on the Outline/Political/Physical map of India.

Part - C: Practical Work

Unit-1: Fundamentals of Maps

- Geo spatial data
- Concept of Geographical data matrix
 - Point data
 - Line data
 - Area data
- Maps:
 - Types
 - Scales-types
 - Construction of simple linear scale
 - Measuring distance
 - Finding direction and use of symbols
- Map projection:
 - Latitude
 - Longitude
 - Time
 - Typology
 - Construction and properties of projection
 - Conical with one standard parallel and Mercator's projection (only two projections)

Unit 2: Topographic and Weather Maps

- Study of topographic maps (1: 50,000 or 1: 25,000 Survey of India maps):
- Contour cross section
- Identification of landforms:
 - Slopes
 - Hills
 - Valleys
 - Waterfall
 - Cliffs

- Distribution of settlements
- Aerial Photographs:
 - Types and geometry - vertical aerial photographs
 - Difference between maps and aerial photographs
 - Photo scale determination
 - Identification of physical and cultural features
- Satellite imageries:
 - Stages in remote sensing data-acquisition
 - Platform and sensors and data products
 - Photographic and digital
- Use of weather instruments:
 - Thermometer
 - Wet and dry-bulb thermometer
 - Barometer
 - Wind vane
 - Rain gauge