

GEOGRAPHY (853)

Aims

1. To enable candidates to acquire knowledge (information) and to develop an understanding of facts, terms, symbols concepts, principles, generalizations, hypotheses, problems, trends, processes and methods of Geography at the national and global level.
2. To apply the knowledge of the principles of Physical Geography in explaining the causes and consequences of natural hazards and suggest ways of coping with them through sustainable development.
3. To develop skills of drawing maps, surveying, and drawing statistical diagrams and thematic maps.
4. To develop an interest in Geography.

CLASS XI

There will be **two** papers in the subject.

Paper I – Theory (3 hours)70 marks

Paper II – Practical and Project Work ...30 marks

PAPER I: THEORY (70 Marks)

There will be one Theory paper of **three** hours duration divided into **two** parts -

Part I (30 marks) will be **compulsory** and will consist of Section A and Section B.

Section A will include **compulsory** short answer questions testing knowledge, application and skills related to elementary/fundamental aspects of the entire syllabus.

Section B will consist of one question on **mapwork**.

Part II (40 marks) will consist of **seven** questions. Candidates will be required to answer **four** out of **seven** questions. Each question in this part shall carry 10 marks.

GEOGRAPHY AS A DISCIPLINE

1. Geography - its interdisciplinary approach and future prospects

Geography as an integrating discipline. Physical Geography and Natural Sciences; Geography and Social Sciences.

Branches of Geography:

- (i) *Systematic approach: Physical Geography (Geomorphology, Climatology, Hydrology); Human Geography (Historical, Social,*

Population and Settlement, Economic, Political).

- (ii) *Regional approach: Regional/ Area Studies, Regional Planning, Regional Development.*

Future prospects:

- (i) *In the area of GPS, GIS, Remote Sensing for resource identification.*
- (ii) *Applied geography in town and country planning, environment management and law, cartography and mapping, geography education, map analysis, travel and tourism (to be taught only for the sake of awareness, not for testing).*

PRINCIPLES OF PHYSICAL GEOGRAPHY

2. Earth's Interior

- (i) Composition and structure.

Age of the earth, theories of the formation of the earth – steady state, Big Bang and the developments today. Materials of the earth and properties: temperature, pressure, thickness; materials of the earth's crust: mantle, core and the intermediary layers.

- (ii) Rocks.

Silicates, carbonates, sulphides, metals. Classification of rocks by origin. Characteristics and types and the distribution in India of igneous, metamorphic and sedimentary rocks, based on texture and mineral composition. The rock cycle.

3. Changing Face of the Earth

Land forms and Processes of Gradation

- (i) Endogenous processes: theory of plate tectonics and the role of drifting continents and associated landforms – mountains, plateaus and plains and their types as an outcome. Isostasy – definition, theories and concepts.

The distribution of mountains, plateaus and plains in the world; plate tectonics and the role of the drifting continents. Processes inside the earth: nature of the earth's crust and the lithospheric plates. Folding and faulting. Isostasy – definition, theories and concepts by Pratt and A. Holmes.

- (ii) Vulcanicity – materials and processes. Major volcanic forms.

The concept of vulcanicity. Parts of a volcano, cone, shield and caldera. Types of volcanoes according to nature of explosions and frequency of eruption. Volcanic materials. Distribution of volcanoes related to plate tectonics.

- (iii) Earthquakes.

Origin of earthquakes, waves and their behaviour, hypocentre (focus), epicentre; their causes and distribution; effects; isoseismal and homoseismal lines, sea quakes, tsunamis; measuring earthquakes and their intensity. Major earthquakes during the last 25 years.

- (iv) Exogenetic process and associated landforms.

Weathering and gradation - difference. Role of weathering in gradation. Different types of weathering.

- (v) Soil.

The factors affecting soil formation; soil profile; distribution and characteristics of soils in the world - zonal, azonal and intrazonal – only broad characteristics related to Indian soils to be done (detailed distribution not required).

- (vi) Fluvial processes and associated landforms.

Work of rivers - concept of baselevel; processes of erosion, transportation and

*deposition. Processes of erosion - mechanical, solution, decomposition; types of erosion - headward, vertical, lateral; transportation mode and deposition; transport load depends on power of the river, the gradient of slope and nature of material carried; deposition mostly in the lower course due to reduction in slope, so also in river course. Landforms made by the river - gorges, rapids, waterfalls, alluvial fans, levees, floodplains, meanders, braided channels, oxbow lakes, deltas – delta plains. Development of river valleys, drainage patterns. **Diagrams and examples from India with photographs.***

- (vii) Aeolian processes and associated landforms.

Process of wind erosion – abrasion, attrition, deflation. Ideal conditions for erosion in hot deserts; landforms resulting from erosion - deflation hollows, pedestal rocks, yardangs, desert pavement, and depositional - sand dunes and their types, sand shadows, loess. Diagrams and examples from India and Asia.

- (viii) Glacial processes and associated landforms.

Continental and mountain or valley glaciers, processes of glacial erosion – plucking, abrasion, attrition; erosional features, e.g. cirque and its components, U shaped and hanging valleys, roche moutonnes, depositional formations, moraines of various types. Some Indian glaciers - Siachen, Gangotri, Baltoro. Diagrams and examples from India.

- (ix) Work of ground water and associated landforms. Water Conservation.

Definition of ground water, watertable, aquifers, springs. Process of erosion by groundwater solution, corrosion. Features formed by underground water (karst topography) – sink holes, dolines, caves, caverns, karst lakes, depositional features – stalactites, stalagmites, cave pillars, dripstones: their formation. Diagrams and examples from India and Australia.

- (x) Marine processes and associated landforms.

Erosional process of sea waves – abrasion, attrition, solution and hydraulic action; coastline and shoreline, erosional features;

sea cliffs, sea caves, stacks and depositional landforms, e.g. - bays, bars and lagoons; Coral reefs: types – fringing, barrier and atolls; submerged and emergent coastlines. Diagrams and examples from India, Australia and West Europe (wherever relevant).

Note: For topics (vi) to (x) only diagram based questions will be asked. Photograph based information should be made use of to emphasize the different processes of gradation.

4. Atmosphere

(i) Composition and structure of atmosphere.

Layers of the atmosphere: troposphere, stratosphere, ozonosphere, mesosphere, ionosphere; its height; composition - dust and water vapour and its quantities; special characteristics of each layer; ozone depletion.

(ii) Atmospheric temperature.

Heating and cooling of the atmosphere, radiation, conduction, convection. Insolation and factors influencing it – angle of sun's rays, duration of day, transparency of atmosphere. Heat budget, i.e balance between insolation and terrestrial radiation- areas of surplus and deficit heat in different latitudes resulting in latitudinal heat balance.

*Factors controlling its horizontal and vertical distribution, temperature anomalies and their nature. Isotherms: their characteristics; isotherm maps of the world in July and January. **Practical work on temperature measurement and graphs to show temperature.***

(iii) Atmospheric Pressure.

*Its horizontal and vertical distribution, factors affecting the distribution, characteristics of isobars on world maps for July and January. Pressure belts and winds – types of winds, airmasses and atmospheric disturbances, cyclones of temperate and tropical areas; anticyclones – their types and associated weather. World map showing major paths of cyclones. Jet Streams – concepts to be introduced with reference to India. **Practical work on Pressure measurement.***

(iv) Atmospheric Moisture.

*Processes of evaporation, condensation and precipitation; relative and absolute humidity; forms of condensation - cloud, fog, dew, frost; precipitation – its forms: snow, hail, rain; types of rainfall: orographic, cyclonic, convectional – origin and factors that affect. Examples from different parts of the world. **Practical work on measuring rainfall and use of bar graphs to show rainfall.***

5. The Realms of Water

(i) Submarine relief and deposits of the Atlantic, Pacific and Indian Oceans.

The depth and the features. The sea floor deposits and their characteristics, the importance of marine resources.

(ii) Ocean water - salinity, temperature, density.

The composition of sea water and the factors that control the distribution of salinity.

(iii) Ocean water movements.

Direct and indirect tides – origin, time, spring and neap tides. Waves – parts, characteristics, formation. Currents - factors affecting currents, currents of Indian, Pacific and Atlantic oceans. Role of currents in modifying climates of coastal areas. Introduction to El Nino concepts.

6. Biosphere – Life on the Earth

Nature of Biosphere, concept of ecosystems, components of ecosystem.

Meaning, nature of interaction between the different components of the biosphere.

7. A. World Climatic types

Low Latitude / tropical climates

(i) Equatorial (ii) Monsoon and tradewind littoral (iii) Wet - dry tropical (iv) Dry tropical (desert).

Mid latitude/temperate climates -

(i) Mediterranean (ii) Marine west coast (iii) Dry sub tropical (iv) Moist subtropical (v) Moist continental (vi) Dry midlatitude (cold deserts).

High latitude/polar climates - (i) Boreal
(ii) Tundra (iii) Ice sheet.

Highland climates.

Location, areas and climate in each of the areas; major human activities and life of man are to be studied.

B. Climate Change – causes/factors of climatic changes in the recent past.

Natural and man made factors, with special reference to climatic changes in India. Measures taken to adapt to these changes in urban and rural India.

MAN- ENVIRONMENT INTERACTION

8. Natural hazards, their causes and management

(i) Hazards of volcanic eruptions and earthquakes.

Major volcanic areas and their problems; major earthquake prone areas - effects on land and human life. Seismic zones of India and measures to check the fury of earthquakes.

(ii) Identification of major drought prone areas.

Characteristics of drought prone areas. Causes, problems and remedial measures (like rain harvesting) adopted with special reference to India.

(iii) Areas prone to floods / landslides - India.

Landslides - causes, effects and measures adopted to check (Himalayan region). The causes of flooding and checking floods (like construction of dams and afforestation) – with special reference to India.

9. Map Work

On the outline map of the world: locating and labelling (for the examinations, some aspects could be identified, others labelled and located) - physical features, ocean currents, climatic regions from **Principles of Physical Geography** and cities from Climatic Regions only.

PAPER II: PRACTICAL WORK AND PROJECT WORK (30 Marks)

Candidates will be required to undertake the following Practical work and Project work:

1. Practical Work

Any **three** of the following **four** topics to be undertaken.

(a) Surveying - elementary principles; preparing plans of the school compound or a small area with the help of chain and tape.

(b) Statistical diagrams - line graphs (simple and multiple), composite bars, pie diagram, flow and star diagram, (the data used will be that used in Paper I).

(c) Map projections – uses, construction and properties of the following:

(i) Cylindrical equal area.

(ii) Simple conical with one standard parallel.

(iii) Zenithal equidistant.

(d) Aerial photographs – Introduction; definition; difference between map and an aerial photographs; uses of aerial photographs, advantages of aerial photography.

Types of Aerial Photographs:

(i) *Based on the position of the camera axis – vertical photographs, low oblique, high oblique (only definition and explanation).*

(ii) *Based on Scale – (a) Large scale photographs (b) Small scale photographs. Scale of Aerial Photograph – (a) by establishing of relationship between photo distance and ground distance; (b) by establishing relationship between photo distance and map distance.*

2. Project Work (Assignment)

Fieldwork to understand any physical phenomena in the local or selected area to illustrate the physical processes (Only **one** topic as an assignment of not more than 10-12 pages of written text excluding pages for pictures and maps. No extra credit will be given for computer output or special effects. Sketches and drawings will be given credit).

- (i) Take any physical feature in your immediate locality:
 - (a) draw sketches or take photographs to highlight physical features.
 - (b) survey how these features have been used and prepare a report.
 - (c) suggest ways by which the area of study could be better used keeping in view the needs of the people of the region.

- (ii) Choose any island area of the world or India and:
 - (a) trace the map of the area and show physical features, towns and port cities.
 - (b) prepare a project report using photographs and pictures from brochures and magazines to show:
 - its origin and formation.
 - soil types, vegetation.
 - human occupations.

- (iii) Any natural hazard like drought, flood, erosion, landslides, etc. in a local area.

Choose a natural hazard in the local area. Describe the nature of damage by consulting newspaper reports, studies, interviews with local people. Identify the nature of damage before and after – land, building, public property, soil, vegetation, animals, etc. What are the chances of it occurring again and what precautions are being taken?