### Class XI

**One Theory Paper**  
3 Hours  
70 Marks

<table>
<thead>
<tr>
<th>Part A.</th>
<th>Fundamentals of Physical Geography</th>
<th>35 (Marks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit-1: Geography as a discipline</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Unit-2: The Earth</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Unit-3: Landforms</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Unit-4: Climate</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Unit-5: Water (Oceans)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Unit-6: Life on the Earth</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Unit-7: Map work</td>
<td>2</td>
<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Part B.</th>
<th>India- Physical Environment</th>
<th>35 (Marks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit-8: Introduction</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Unit-9: Physiography</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Unit-10: Climate, vegetation and soil</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Unit-11: Natural hazards and Disasters</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Unit-12: Map Work</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Part C.</th>
<th>Practical Work</th>
<th>3 Hours</th>
<th>30 Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit-1: Fundamentals of Maps</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit-2: Topographic and Weather Maps</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit-3: Practical Record Book &amp; Viva</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
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**Unit-1: Geography as a Discipline**

- Geography as an integrating discipline, as a science of spatial attributes;
- Branches of geography; importance of physical geography.

**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.

**Unit-3: Landforms**

- Rocks: major types of rocks and their characteristics;
- Landforms and their evolution
- Geomorphic processes: weathering, mass wasting, erosion and deposition; soil-formation
Unit 4: Climate (Periods 30)

- 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 and cloud; rainfall - types and world distribution.
- World climates - classification (Koeppen and Thornthwaite), greenhouse effect, global warming and climatic changes.

Unit 5: Water (Oceans) (Periods 8)

- Hydrological Cycle.
- Oceans - distribution of temperature and salinity; movements of ocean water - waves, tides and currents; submarine reliefs.

Unit 6: Life on the Earth (Periods 6)

- Biosphere - importance of plants and other organisms; biodiversity and conservation; ecosystem and ecological balance.

Unit 7: Map work on identification of features based on the above units on the outline political map of the world.

Part B. India - Physical Environment 65 Periods

Unit 8: Introduction (Periods 3)

- Location - space relations and India’s place in the world.

Unit 9: Physiography (Periods 23)

- Structure and Relief;
- Drainage systems: concept of watershed; the Himalayan and the Peninsular;
- Physiographic divisions.

Unit 10: Climate, Vegetation and Soil (23 Periods)

- Weather and climate — spatial and temporal distribution of temperature, pressure winds and rainfall, Indian monsoon: mechanism, onset and withdrawal, variability of rainfalls: spatial and temporal; Climatic types (Koeppen)
- Natural vegetation-forest types and distribution; wild life; conservation; biosphere reserves;
- Soils - major types (ICAR’s classification) and their distribution, soil degradation and conservation.

**Unit 11: Natural Hazards and Disasters: Causes, Consequences and Management (One case study to be introduced for each topic)**

(Periods 16)
- Floods, Clouds bursts and droughts
- Earthquakes and Tsunami
- Cyclones
- Landslides

**Unit 12: Map Work of features based on above units for locating and labelling on the Outline Political map of India.**

C. Practical Work (40 Periods)

**Unit 1: Fundamentals of Maps (12 Periods)**
- Maps - types; scales-types; construction of simple linear scale, measuring distance; finding direction and use of symbols.
- Latitude, longitude and time.
- Map projection- typology, construction and properties of projection: Conical with one standard parallel and Mercator’s projection.

**Unit 2: Topographic and Weather Maps (28 Periods)**
- Study of topographic maps (1 : 50,000 or 1 : 25,000 Survey of India maps); contour cross section and identification of landforms-slopes, hills, valleys, waterfall, cliffs; distribution of settlements.
- Aerial Photographs: Types & Geometry-vertical aerial photographs; difference between maps & aerial photographs; photo scale determination.
- Satellite imageries, stages in remote sensing data-acquisition, platform & sensors and data products, (photographic & digital).
- Identification of physical & cultural features from aerial photographs & satellite imageries.
- Use of weather instruments: thermometer, wet and dry-bulb thermometer, barometer, wind vane, raingauge.
- Use of weather charts: describing pressure, wind and rainfall distribution.

**Unit 3: Practical Record Book and Vivavoce'**.