## CLASS XI

### A. Fundamentals of Physical Geography (Periods 88)

#### Unit I: *Geography as a Discipline* (Periods 6)

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

#### Unit II: *The Earth* (Periods 12)

- Origin and evolution of the earth; Interior of the earth; Wegener's continental drift theory and plate tectonics; Earthquakes and volcanoes;

#### Unit III: *Landforms* (Periods 20)

- Rocks and minerals – major types of rocks and their characteristics;
- Landforms and their evolution
- Geomorphic processes – weathering, mass wasting, erosion and deposition; soils – formation

#### Unit IV: *Climate* (Periods 30)

- Atmosphere – compositions 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, 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 extra tropical cyclones;
- Precipitation – evaporation; condensation – dew, frost, fog, mist and cloud; rainfall – types and world distribution;
- World climates – classification (Koeppen), greenhouse effect, global warming and climatic changes.

#### Unit V: *Water (Oceans)* (Periods 12)

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

#### Unit VI: *Life on the Earth* (Periods 8)

- Biosphere – importance of plants and other organisms; biodiversity and conservation; ecosystems, bio-geo chemical cycle, and ecological balance.

### B. India – Physical Environment (Periods 78)

#### Unit I: *Introduction* (Periods 6)

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

### Unit II: *Physiography* (Periods 24)

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

### Unit III: *Climate, Vegetation and Soil* (Periods 26)

- Weather and climate – spatial and temporal distribution of temperature, pressure , winds and rainfall; Indian monsoons: mechanism, onset and variability – spatial and temporal; climatic types;
- 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 IV: *Natural Hazards and Disasters: Causes, Consequences and Management*

**(One case study to be introduced for each topic)** (Periods 22)

- Floods and droughts
- Earthquakes and Tsunami
- Cyclones
- Landslides

## C. Practical Work (Periods 54)

### Unit I : *Fundamentals of Maps* (Periods 22)

- Maps – types; scales – types; construction of linear scales, measuring distance, finding direction and use of symbols;
- Latitude, Longitude and time;
- Map projection – typology, construction and properties of conical with one standard parallel and Mercator's projection.

### Unit II : *Topographic and Weather Maps* (Periods 32)

- 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, waterfalls, cliffs; distribution of settlements;
- Aerial Photographs and Satellite Images:

*Aerial Photographs*: Types and Geometry – vertical aerial photographs; difference between maps and aerial photographs; photo scale determination.

*Satellite images*: Stages in remote sensing data acquisition, platform and sensors and data products, (photographic and digital)

Interpretation of physical and cultural features from aerial photographs and satellite imageries.

- Use of weather instruments: thermometer, wet and dry-bulb thermometer, barometer, windvane, raingauge.
- Use of weather charts: describing pressure, wind and rainfall distribution.