

TEST: 2**PHYSICAL
GEOGRAPHY
(WORLD & INDIA)****24 AUGUST, 2019****UPSC Syllabus**

- Salient features of world's physical geography
- Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc.
- Geographical features and their location-changes in critical geographical features (including water-bodies and ice-caps) and in flora and fauna and the effects of such changes.

Sub-Topic Listing**PHYSICAL GEOGRAPHY (WORLD)****(1) General Geography****■ Universe**

- ▶ Theories of development of Universe
- ▶ Star Formation
- ▶ Formation of planets

■ Earth Evolution & Basics

- ▶ Evolution of Earth
- ▶ Evolution of Atmosphere
- ▶ Evolution of Hydrosphere
- ▶ Earth's Geological time scale
- ▶ Origin of life
- ▶ The Earth's Movements-Revolution and Rotation and Seasons
- ▶ Inclination of the Earth's Axis and its effects

(2) Geomorphology**■ Earth's Interior**

- ▶ Sources of Information about the Interior (Direct Sources, Indirect Sources - Earth Quake Wave, Volcanoes)
- ▶ Structure of the Earth's Interior
 - Mechanical and Chemical categorization of internal structure

■ Geology and Rock System

- ▶ Minerals
- ▶ Major Elements of the Earth's Crust
 - Physical Characteristics
 - Classification -

▶ Rocks (Aggregate of Minerals)

- Classification
 - ◆ Igneous
 - ◆ Sedimentary
 - ◆ Metamorphic

▶ Rocks & landforms**▶ Rocks & Soils****■ Geomorphic Processes****▶ Endogenic Forces**

- Diastrophism
 - ◆ Orogenic
 - ◆ Epierogenic
 - ◆ Earthquakes
 - ◆ Plate movements
- Volcanism

▶ Exogenic Forces

- Denudation Processes
 - ◆ Weathering & its Significance
 - ◆ Mass movements & their impact
 - ◆ Erosion Transportation & Deposition

■ Earthquakes and Volcanism

- ▶ Earthquakes: Reasons, Distribution & impact
- ▶ Volcanism
 - Types and distribution of Volcanoes
 - Volcanic Landforms (intrusive)

■ Distribution of Continents & Oceans

- ▶ Theories

- Continental Drift Theory
- Convectional Current Theory
- Mapping of the Ocean Floor
- Sea Floor Spreading
- Plate Tectonics
- ▶ Isostasy
- **Landforms and their evolution**
 - ▶ Causes of landform development
 - Geomorphic Processes
 - Geomorphic Agents
 - ▶ Geomorphic Agents and Landforms
 - Running Water
 - ◆ Development of a river System
 - ◆ Erosional Landforms
 - ◆ Depositional Landforms
 - ▶ Ground Water (Karst Topography)
 - Erosional Landforms
 - Depositional landforms
 - ▶ Glaciers
 - Erosional Landforms
 - Depositional Landforms
 - ▶ Waves and Currents
 - ▶ Winds
 - Erosional Landforms
 - Depositional Landforms

■ **Landforms across the world**

- ▶ Rivers and lakes
- ▶ Mountain and Peaks
- ▶ Plateaus

(3) Oceanography

■ **Hydrosphere**

- ▶ Water on the Surface of the Earth
- ▶ Hydrological Cycle

■ **Submarine Relief Features**

- ▶ Relief of the Ocean floor
- ▶ Divisions of the ocean floor
- ▶ Minor relief features

■ **Temperature and Salinity**

- ▶ Temperature of the Ocean Water
 - Factors affecting Temperature distribution
 - Horizontal and Vertical Distribution
- ▶ Salinity of the Ocean Water
 - Factors affecting salinity
 - Horizontal distribution of salinity
 - Vertical Distribution of salinity

- ▶ Density of Ocean Waters

■ **Movements of Ocean Water**

- ▶ Factors influencing Movement
- ▶ Waves
 - Motion of waves
 - Characteristics of wave

- ▶ Tides

- Types of Tides
- Importance of Tides

- ▶ Ocean Currents

- Characteristics of Ocean Currents
- Types of ocean currents:
- Major Ocean currents of the World
- Effects of Ocean Currents

■ **Marine Resources**

- ▶ Surface water resources
- ▶ Ground water resources
- ▶ Inland water resources
- ▶ Oceanic Water Resources (Marine Resource)
- ▶ Utilization of oceans by man
- ▶ Water consumption patterns
- ▶ Water Conservation and Management (Techniques)

■ **Ocean Deposits and Corals**

- ▶ Terrigenous Deposits
- ▶ Volcanic Deposits
- ▶ Biotic deposits
- ▶ Abiotic Deposits
- ▶ Coral Reefs
 - Probable origin of Coral Reef
 - Types and significance of Coral Reef
 - Issue of Coral Bleaching

(4) Climatology

■ **Atmosphere**

- ▶ Composition of the Atmosphere
- ▶ Structure of the Atmosphere

■ **Solar Radiation, Heat Balance and Temperature**

- ▶ Solar Radiation and Isolation
- ▶ Heating and cooling of atmosphere
- ▶ Terrestrial Radiation
- ▶ Heat Budget of the Planet Earth
- ▶ Temperature
- ▶ Factors Controlling Temperature Distribution
- ▶ Distribution of Temperature

■ Atmospheric Circulation and Weather Systems

- ▶ Atmospheric Pressure
- ▶ Vertical variation of pressure
- ▶ Horizontal distribution of pressure
- ▶ World Distribution of Sea Level Pressure
- ▶ Factors affecting the velocity and direction of the Wind
- ▶ General Circulation of the Atmosphere – Pattern of Planetary Winds
- ▶ Latitudinal Variation of Atmospheric Heating
- ▶ Emergence of Pressure Belts
- ▶ Hadley Cell , Ferrel Cell, Polar Cell
- ▶ Seasonal Wind
- ▶ Local Wind
- ▶ Land and Sea Breezes
- ▶ Mountain and Valley Winds
- ▶ Air Mass, Fronts, Cyclones and Jet Stream
 - Air mass & fronts
 - Cyclones
 - Thunderstorms
 - Tornadoes

■ Water in the Atmosphere

- ▶ Water Vapour
- ▶ Humidity – Absolute and Relative
- ▶ Saturation – Dew Point
- ▶ Evaporation and Condensation
 - Dew
 - Frost
 - Fog & Mist
 - Clouds
- ▶ Precipitation
 - Rainfall
 - Snowfall
 - Sleet Hail
 - Hailstones
 - Types of Rainfall
 - World Distribution of Rainfall

■ Climatic Zones of the World

- ▶ World Climate
- ▶ Koeppen's Scheme of Classification of Climate
- ▶ Climatic Zones of World

(5) Bio-Geography

■ Soil & Its Characteristics

- ▶ Soil Characteristics

- ▶ Factors Responsible for Soil Formation
- ▶ Process of Soil Formation
- ▶ Soil Profiles and Horizons
- ▶ Classification of Soil
- ▶ Soil Degradation, Erosion and Conservation

■ Vegetation resources

- ▶ Types of natural vegetation
- ▶ Forests
 - Significance of forests
 - Factors of forest development
 - Classification of forests
 - forest cover
- ▶ Grasslands
- ▶ Desert vegetation
- ▶ Tundra Vegetation
- ▶ Deforestation
- ▶ Conservation of forests
- ▶ Reforestation
- ▶ Afforestation
- ▶ Forestry
 - Social forestry
 - Agro-forestry
 - Farm Forestry
 - Community Forestry

(6) Physical Geography of India

■ Physiography of India

- ▶ Location
- ▶ Geopolitical Significance of India
- ▶ Geological Divisions
 - The Peninsular Block
 - The Himalayas and other Peninsular Mountains
 - Indo-Ganga-Brahmaputra Plain
- ▶ Physiographic Divisions

■ Drainage System

- ▶ Drainage Patterns
- ▶ Drainage System of India
- ▶ Himalayan Drainage System
 - River Systems of Himalayan Drainage
 - ◆ Indus river system
 - ◆ Ganga River System
 - ◆ Brahmaputra river system
- ▶ Peninsular Drainage System
 - River Systems of Peninsular Drainage
 - Small Rivers Flowing Towards East and West

■ **Climate**

- ▶ Factors influencing the climate of India
- ▶ Monsoon
- ▶ Mechanism of the Monsoon
 - Classical Theory
 - Modern theory
 - Air mass theory
 - Jet stream theory
- ▶ ELNINO and LANINA & their impact
- ▶ The rhythm of Seasons
 - The cold weather season
 - The hot weather season
 - The southwest monsoon season
 - The retreating monsoon season
- ▶ Climatic Regions of India

■ **Soils in India**

- ▶ Classification of Soils
- ▶ Soil textures
- ▶ Issue of Soil degradation & Soil Erosion
- ▶ Soil Conservation

■ **Natural Vegetation**

- ▶ Types of Forests in India
- ▶ Forest Cover in India
- ▶ Forest Conservation
- ▶ Forest Problems in India

(7) Environmental Issues

- Floods and Droughts
- Forest fires
- Deforestation
- Desertification
- Pollution
- Climate Change and Global Warming
