

## **Syllabus for National Meteorological Olympiad (Senior category)**

### **Chapter 1: Introduction to Weather & Climate System**

- Introduction to Weather and Climate; The Earth in the Solar System; Origin and Evolution of Our Atmosphere and Ocean; Composition and Structure of Atmosphere and Ocean; India Meteorological Department; World Meteorological Organisation.

### **Chapter 2: Weather and Climate Processes**

- Principles of Weather and Climate Systems; Observing systems; Weather and Climate: Differences and Similarities; Weather systems; Weather and Climate Forecasting Process; Solar radiation and heat balance; Atmospheric circulation; Seasons; Rainfall and Monsoons (southwest and northeast).

### **Chapter 3: Natural Hazards and Disasters**

- Introduction to Natural Hazards; Types of natural Hazards; Hydro-meteorological hazards over India; Cyclones: Formation, climatology and impacts; Thunderstorm and Lightning: climatology and impacts; Heat Waves and Cold Waves: climatology and impacts; Floods and Droughts; Fog and its impacts.

### **Chapter 4: Hazard Prediction, Warning Systems, and Disaster Management**

- Prediction of Natural Hazards; Early Warning Systems and its components; IMD's impact based forecasting system; Early warning systems of cyclones, thunderstorms, heat waves, cold waves and fog; NDMA's role in disaster management; India's Comprehensive Approach to Disaster Preparedness and Management; Role of Early Warnings in Disaster Risk Reduction, IMD's Website: A Vital Resource for Weather Forecasting and Disaster Management, Involving Communities in Hazard Preparedness.

### **Chapter 5: Climate Change: Causes, Impacts, Mitigation and Adaptation.**

- Climate Change; Causes of Climate Change; Global warming; Proof of climate change; Impacts of Climate Change; Socio-economic impacts of climate change; Characteristics of Climate Change and Its Impacts in India; International and National Initiatives; Climate Change Adaptation and Mitigation.

### **Chapter 6: Climate services to Socio-economic sectors**

- Global Framework for Climate Services; Global Framework for Climate Services; Climate services by IMD; Applications of Weather and Climate Information in Socio-Economic Sectors.