EBO-502 Air Pollution and Climate Change

Unit-I

1. Atmospheric composition and climate; Gaseous and particulate pollutants, emission trends and scenarios; climate change, drivers of climate change, greenhouse gas emission scenarios.
2. Sulphur derivatives: Sources and cycling of sulphur, effects on plants, human health and ecosystems, mechanism of toxicity, resistance and buffering, sulphur metabolism, threshold and injury
3. Nitrogen derivatives: Formation and sources; deposition, uptake, metabolism, critical load; effects on plants, human health and ecosystems
4. Fluoride derivatives: Sources and cycling, bioaccumulation, threshold and injury; effects on plants, human health and ecosystems

Unit-II

1. Oxidants: Formation and sources, photochemical smog; effects on plants and human health, mechanism of toxicity, resistance, critical load
2. Stratospheric ozone depletion: Phenomenon, causes, irradiation scenarios; effects of enhanced UV-B on plants, microbes and human health, biological action spectra
3. Greenhouse effects: Process; consequences, global warming, sea level rise, albedo, oceanic influences agriculture, natural vegetation; effects of increased CO2 on plants; human implications
4. Acid rain: Formation, dispersion and deposition, trends; consequences on soil fertility, rivers and lakes; effects on plants, leaf injury, buffering, reproduction; forest decline.