

**ENVIRONMENT  
AND  
ECOLOGY**

# ENVIRONMENT

- **Environmental science** is the STUDY of the interactions among the physical, chemical and biological components of the ENVIRONMENT.
- “Environment is the sum of all social, economical, biological, physical and chemical factors which constitutes the surroundings”.
- “Environment refers to the sum total of conditions which surround man at given point in space and time.”

## **COMPONENT OF ENVIRONMENT:**

Environment consists of the following three important components.

**These includes:**

**A) Abiotic (Physical and inorganic) components (NON-LIVING):**


**Temperature, water, light, humidity, wind, minerals**

**B) Biotic (organic) components (LIVING):**

**Biodiversity**

# Segments of Environment

- Atmo-sphere
- Litho-sphere
- Hydro-sphere

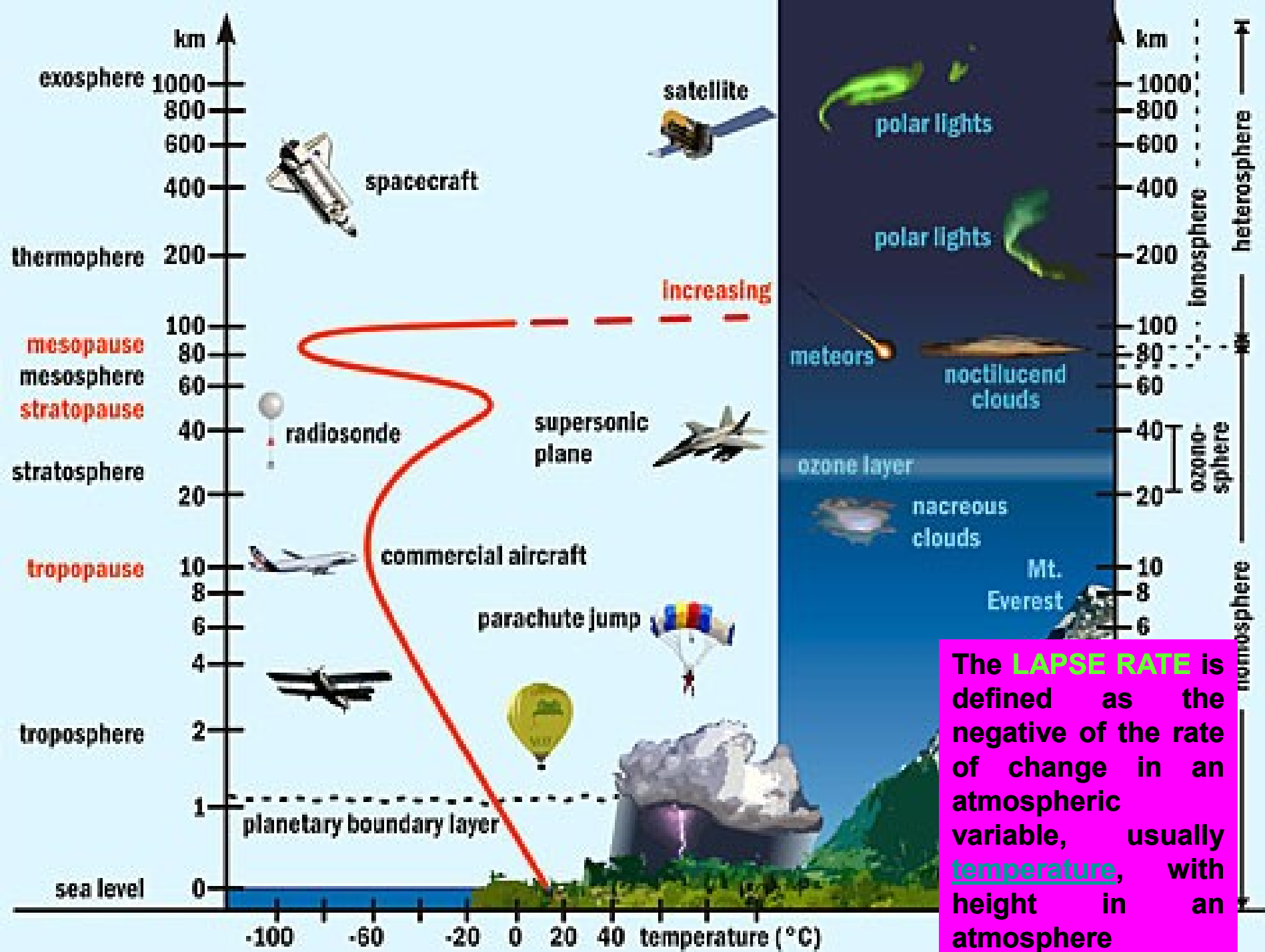


Biosphere = Giant  
Ecosystem

# Structure of Atmosphere

**Troposphere:** It extends to about **10-18 km** showing fall of temperature with height (**15 °C to – 55 °C**), cloud formation, manifestation of weather conditions and presence of dust particles, pollen, spores, etc. in the lower part.

**Stratosphere:** This part of atmosphere occurs between **10-50 km** altitude, shows rise of temperature with height (**-55 °C to -2 °C**), contains ozone, lacks dust and water vapors.



The **LAPSE RATE** is defined as the negative of the rate of change in an atmospheric variable, usually temperature, with height in an atmosphere

**Exosphere**



400 km altitude

**Thermosphere**



300 km

**Mesosphere**



50 km

**Stratosphere**

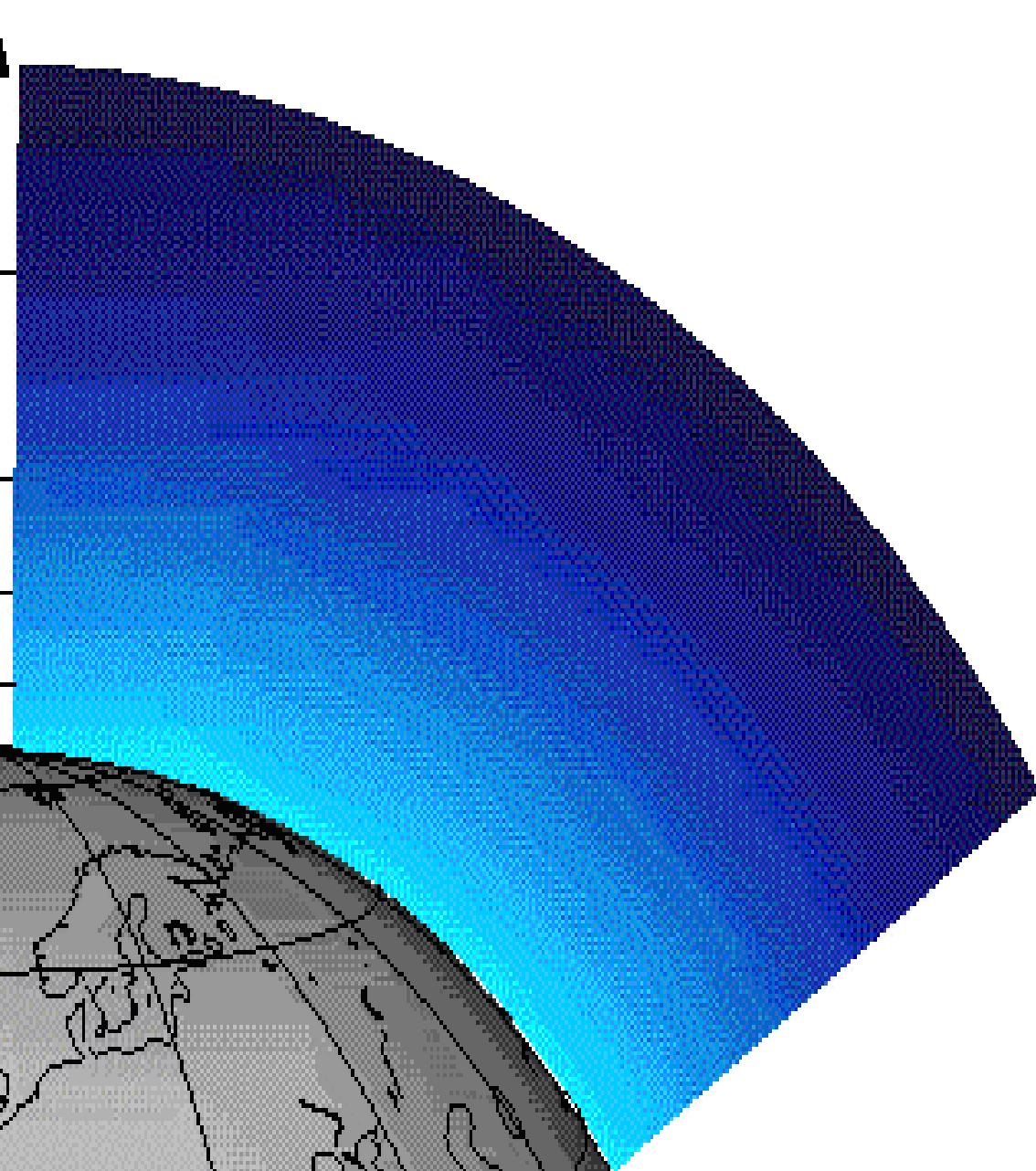
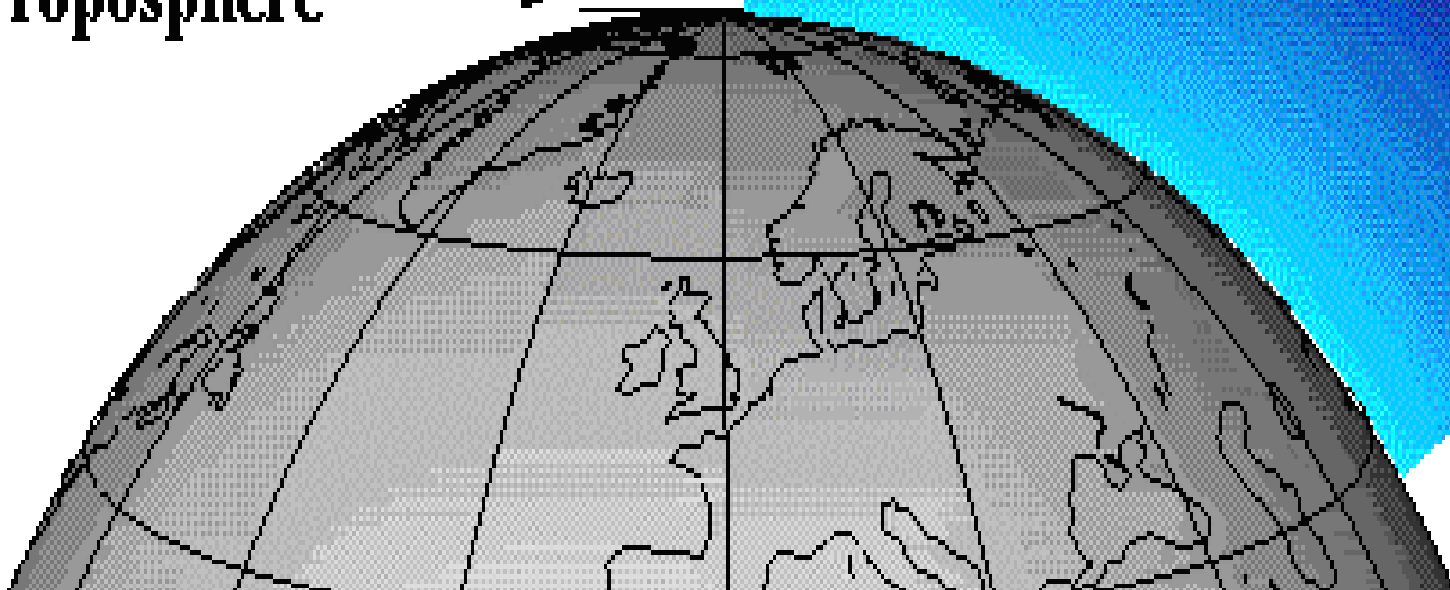


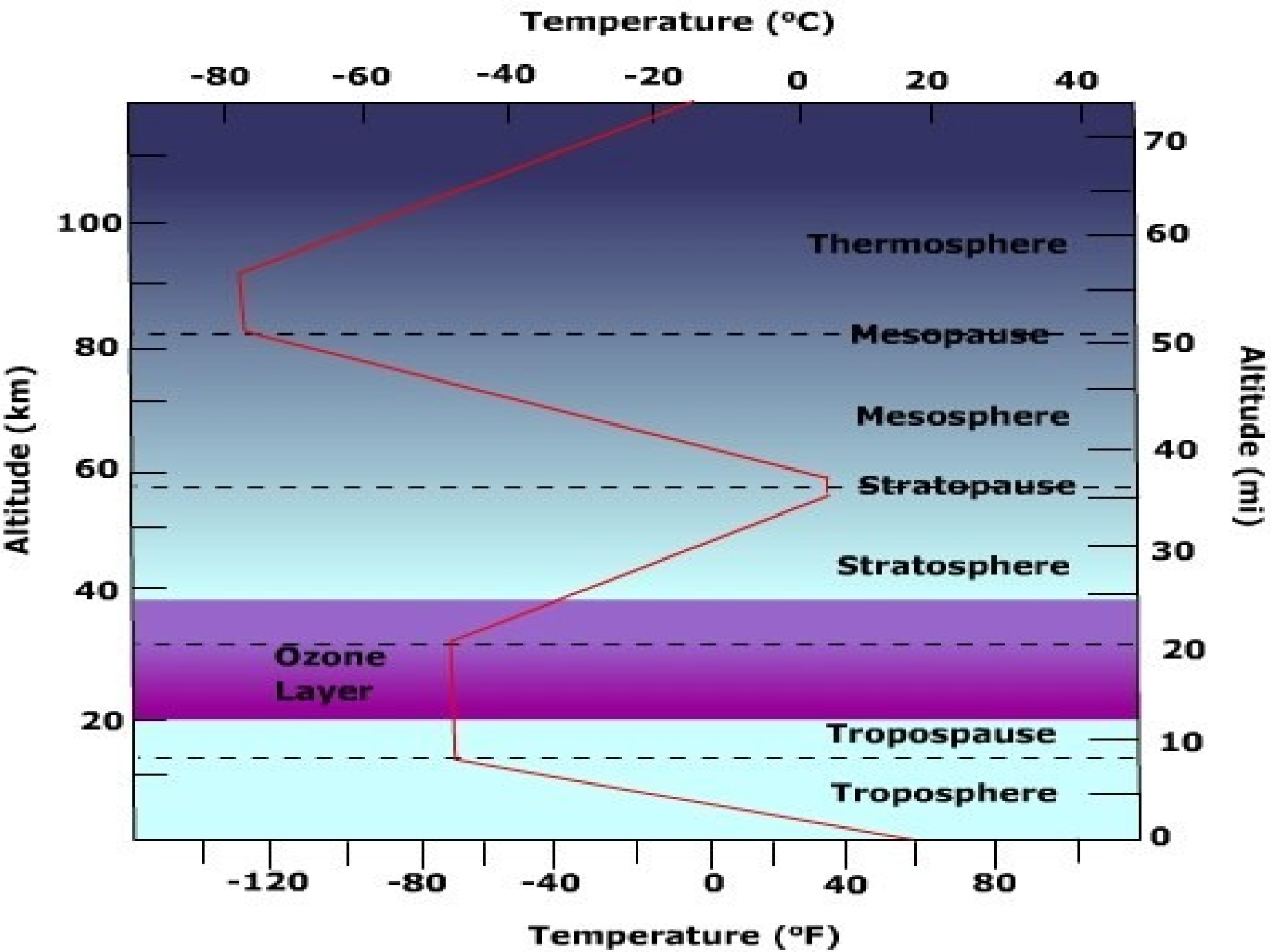
40 km

**Troposphere**



10 km







**Mesosphere:** The layer extends between **50-85 km** from earth's surface and is characterized by decrease in temperature with altitude (**-2 °C to -92 °C**).

**Thermosphere:** It lies between **85 - 500 km** altitude and shows of temperature with rise of altitude (**- 92 °C to 1200 °C**).

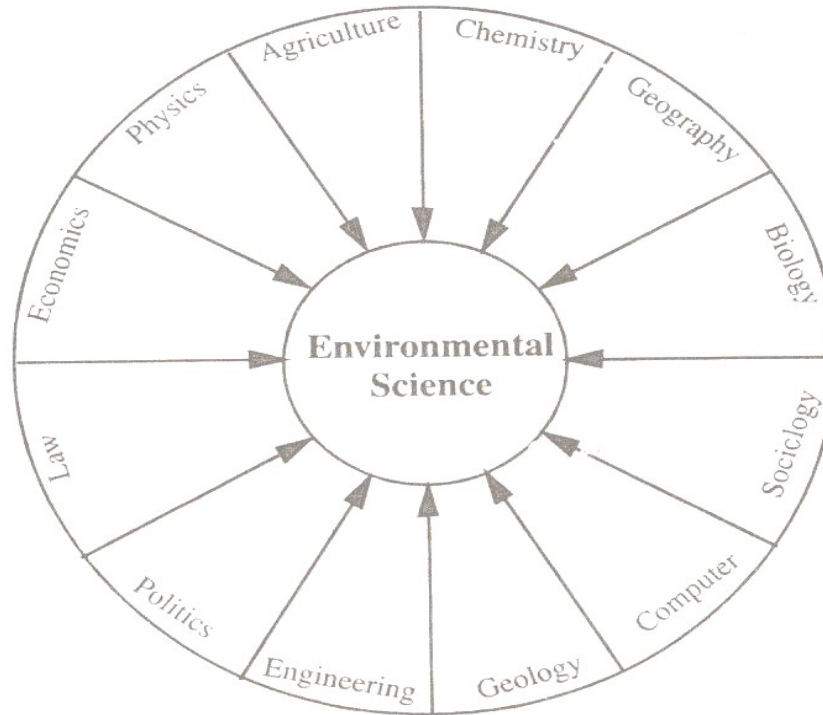
**Ionosphere:** This layer is a multilayered region of thermosphere which is characterized by presences of ions and free electrons.

## **Importance:**

Importance of environment is necessary for:

- ✓ Maintenance of environmental quality
- ✓ Balancing the ecosystem
- ✓ To restrict and regulate the exploitation of natural resources
- ✓ To protect the environmental science from degradation.

# Scope of Environmental Sciences



**Multidisciplinary nature of Environmental Science**

- (a) Environmental sciences:** it deals with the scientific study of environmental system (air, water, soil and land)
- (b) Environmental Engineering:** It deals with the study of technical processes involved of human activity and improving the environmental quality for the health and well being of humans.
- (c) Environmental management:** Environmental management promotes due regards for physical, social and economic environment of the enterprise or projects.
- (d) Atmospheric sciences:** It deals with the Earth's gaseous outer layer with emphasis upon interrelation to other systems. Atmospheric sciences comprises meteorological studies, greenhouse gas phenomena etc.

***Thanks***