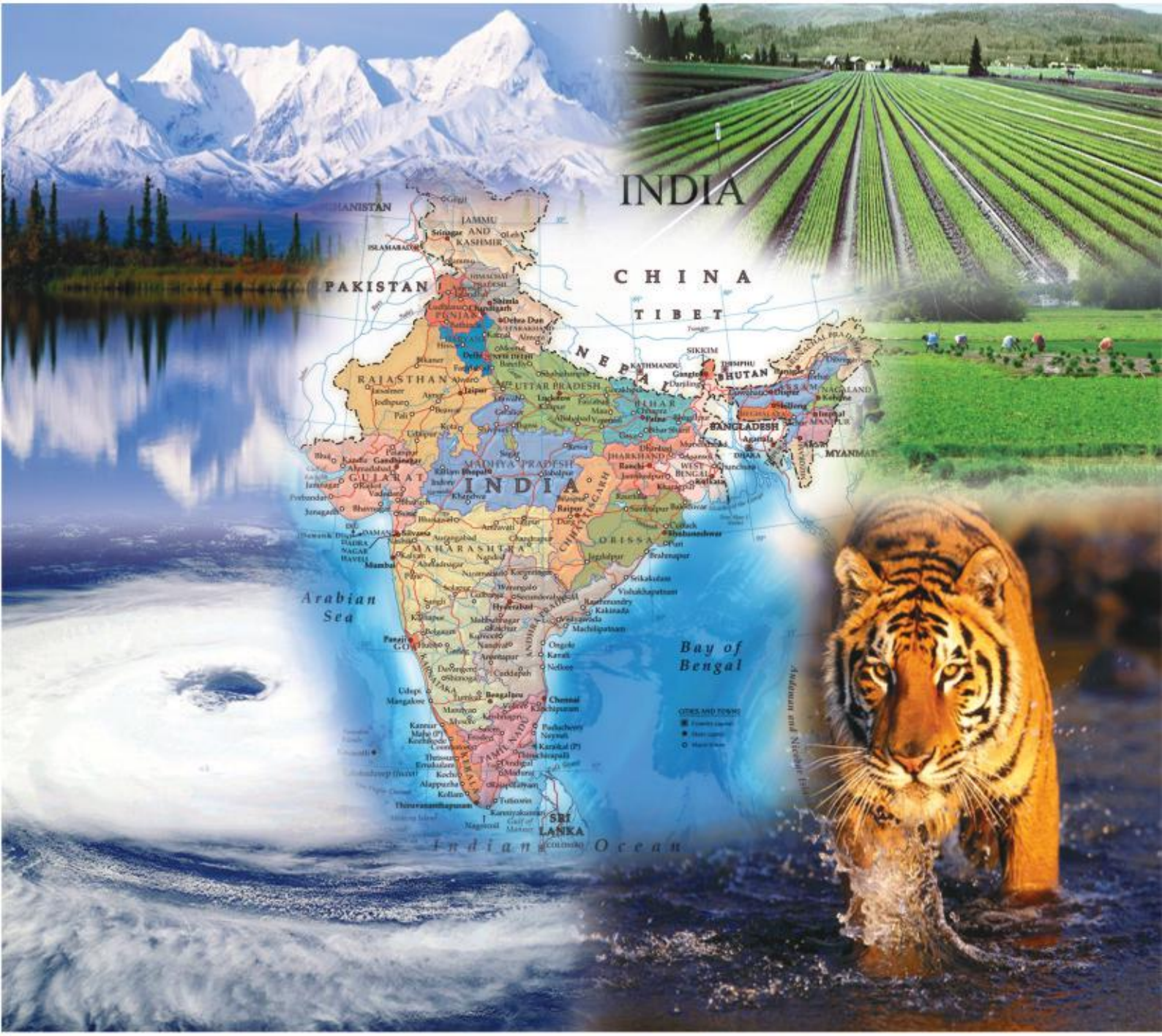
Vetrii's

TNPSC Material

Geography



VETRII IAS STUDY CIRCLE

F Block, 37/38, Chinthamani, Anna Nagar(E), Chennai - 600 102

044-26265326 / 96001 24042 / 95000 05522

www.vetriias.com

★ Chennai ★ Salem

Follow us on

INDEX

The main gases within the exosphere are the lighter gases, mainly hydrogen and helium. The exosphere is sometimes considered a part of outer space.

Magnetosphere: A Magnetosphere is that area of space, around a planet, that is controlled by the Planet's Magnetic field. It protects surface from changed particles of the solar wind.

1.3 TEMPERATURE DISTRIBUTION

The sun is the source of light and heat to the earth. Earth receives only a small amount of solar radiation which takes eight minutes to reach the earth's surface. Incoming solar radiation is called insolation. Heat energy from solar radiation is received by Earth through three mechanisms. They are: i) radiation in the atmosphere ii) Conduction over land and iii) Convection in the water bodies. The Earth's atmosphere is heated more by terrestrial radiation than by the insolation.

Summer Solistice - June 21

- Sun is above tropic of cancer, Northern Hemisphere-Summer Southern Hemisphere-Winter.
- In Northern Hemisphere daytime is lengthier than night time.
- 6 months day time in Artic region.

Winter Solistice - Dec 22

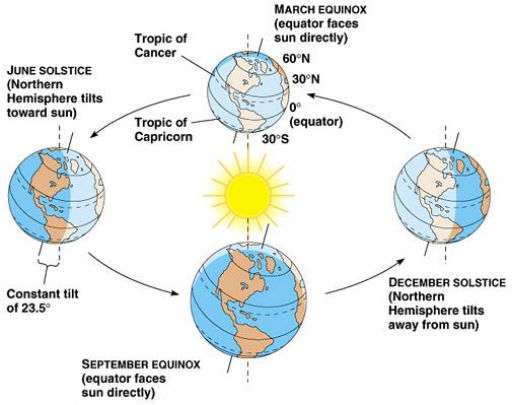
- Sun is above the tropic of Capricon.
- Northern Hemisphere - Winter season. Southern Hemisphere - summer season.
- In Northern hemisphere Night is lenghthier then Day.
- In Antartica region 6 months Day time prevails.

Equinoxes

- These are the days, when days and nights are equal, under this situation, the Sun is vertically overhead at the equator. It happen twice a year. i.e. 21st March - Vernal Equinox. 23rd September - Autumnal Equinox.

Seasonal Changes

- Due to Revolution of Earth around the Sun.
- Due to tilting of Earth.
- Earth is inclined 23 1/2 from the axis.
- Earth is incline 66 1/2 from the pole.



- 10^{o} N to 10^{o} S is also known as Equtorial region.
- Sun is almost vertical between Tropic of cancer and capricon.

Factors controlling the temperature distribution:

a) **The latitude:** The temperature of a place depends on the insolation received. Insolation varies according to the latitude of the place hence temperature also varies accordingly.

b) **The Altitude:** The atmosphere is indirectly heated by terrestrial radiation from below. Therefore, the places near sea level record higher temperature than the places situated in higher altitudes. In other words, temperature decreases with increase in height. This is called Normal Lapse Rate. It is 6.5 degree Celsius per 1000 meters.

c) **Distance from the sea:** Another factor that influences the temperature is the location of a place with respect to the sea. Compared to land, the sea gets heated slowly. Land heats up and cools down quickly. Therefore, the variation in temperature over the sea is less compared to land. The places situated near the sea come under the moderating influencing of the sea and land breeze which moderate temperature.

d) **Air-mass and ocean currents:** Like the land and sea breezes, the passage of air masses also influences the temperature of a land mass. The places which come under the influence of warm air mass experience high temperatures and the places which come under the influence of cold air mass experience low temperatures. Similarly, the places located on the coast where the warm ocean currents flow records higher temperature than the places located on the coast where cold currents flow.

e) **Direction of Prevailing winds :** The winds that blow from the sea contain more moisture so they are cool and wet cause rainfall
   - Ex - Southwest Monson
   - The winds that blow from the land areas are warm and dry (No Rainfall)
   - Ex - North East Monsoon

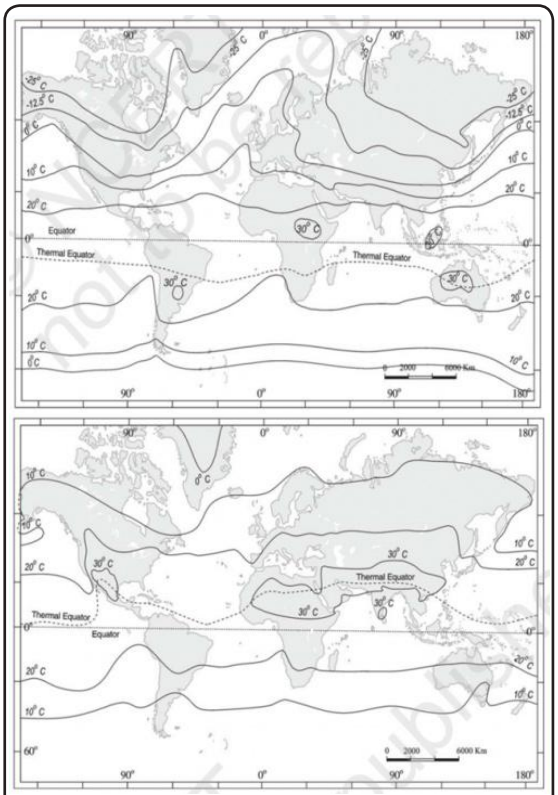
f) **ELNINO Effect :** It is warm oceanic current.

g) **Human Influence :** Deforestation and human development are felt in the name of Global warming. Green house effect, and pollution, which have increased the amount of Co_2.

Distribution of Temperature:

The global distribution of temperature can well be understood by studying the temperature distribution in January

and July. The temperature distribution is generally shown on the map with the help of isotherms. The Isotherms are lines joining places having equal temperature.



The above figures show the distribution of surface air temperature in the Month of January and July.

In general the effect of the latitude on temperature is well pronounced on the map, as the isotherms are generally parallel to the latitude. The deviation from this general trend is more pronounced in January than in July, especially in the northern hemisphere. In the northern hemisphere the land surface area is much larger than in the southern hemisphere. Hence, the effects of land mass and the ocean currents are well pronounced.

In January the isotherms ***deviate to the north over the ocean and to the south over the continent.***

Daily range of temperature:

- The differences between the maximum and minimum temperatures of a day is called the diurnal range of temperature.
- It is Low in Equator. It is high in Desert Areas and tropical interior land during summer.

Mar 21	-	Vernal Equinox
June 22	-	Summer Solstice
Sep 23	-	Autumnal Equinox
Dec 22	-	Winter Solstice

Annual range of temperature:

- The differences between Mean temperature of the hottest and coldest months of the year is known as annual range of temperature.
- It is very less in equatorial region. The range is increases from Equator to subpolar region.
- It is high in Desert regions.
- The highest annual range of temperature occur in subpolar region.

Inversion of Temperature:

Normally, temperature decreases with increase in elevation. It is called normal