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Atmosphere and its Composition

SOLAR INSOLATION AND ITS IMPACT

The energy reaching upto the surface of Earth and in low layer of atmosphere are electro-magnetic short wave radiations. These inter short wave radiations are absorbed by the surface of earth in differentiated manner. Subsequently the surface of earth also radiate the solar radiation in differentiated manner these radiated long wave radiations are regarded as terrestrial radiation. At last the long waves outgoing terrestrial radiation are trapped by some heavy molecules of lower atmosphere, which eventually reflect them back to surface of earth as counter radiation. It should be noted that the same counter radiation is responsible to maintain and regulate average temperature (15.2°) over the surface of earth.

CLIMATIC ZONES OF THE WORLD

On the basis of incoming solar Radiation, outgoing terrisetrial radiation reflected counter radiation Rotation of earth, axial tilt of Earth, revolution of Earth, the impact of solar insolation varies from equator towards poles. based on this variation of solar insolation and isolational Heating, five climatic zones can be identified from equator towards poles

Tropical Climatic Zone

It physicaly lies between two tropics that is tropic of Cancer and Tropic of Capricon. where the mean monthly temperature remains more than 18°C subsequently there is no possibility of winters in tropical latitudes.

Temperate Latitudes - It physicaly lies between 30°- 60° northern and southern Hemisphere, where average temp of winter months ranges between 8° to 18°C while the average temperature of summer months varies between 8° to 22°C

Subtropical Zone – It physically lies between extremely warmer tropical and comparitively cooler temperate region subsequently it is characterised by both climatic zone but highly influenced by tropical climate. Sever summer and extreme winters remains the basic features of ~~tempera~~ subtropical climate.

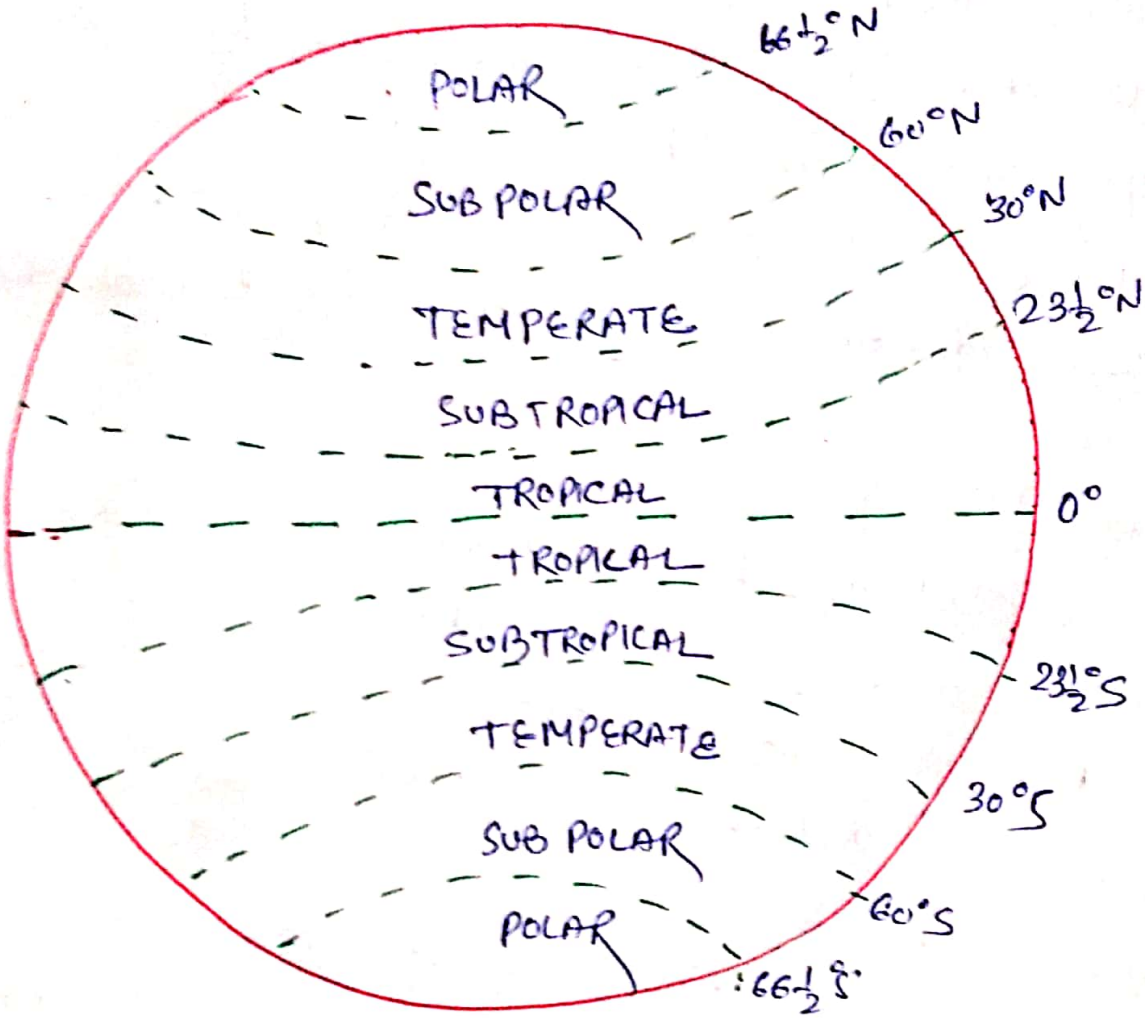
SubPolar Climatic Zone

It lies between the latitudnal extent of 55° to 65°C northern and southern latitudes where average temperature of winter months always remain less than minus(-3°C) while average temprature during summer could reach upto 10°C or more it means frost action during winter and melting of ice during summer remains the basic feature of subpolar latitude.

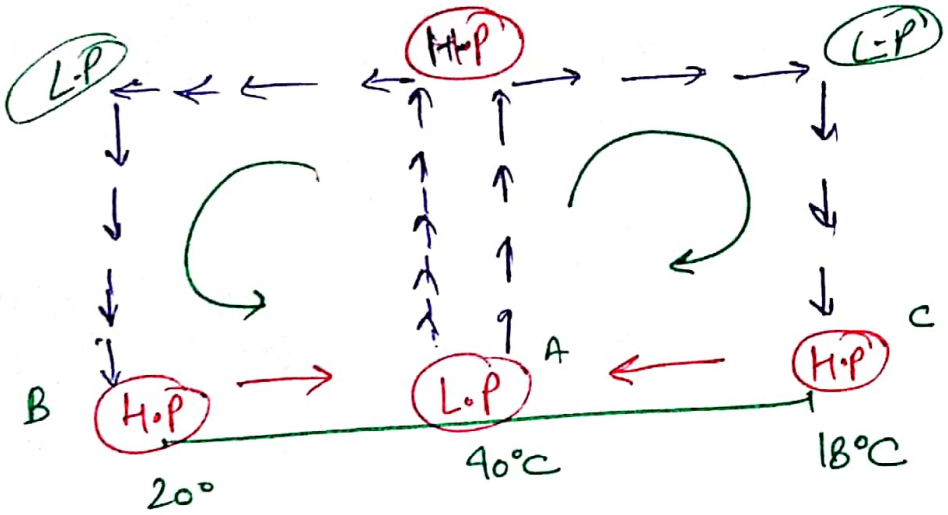
217. # Polar Latitudes : This region is characterised by low angle of incidence less insolational heating and permafrost condition throughout the ear.

Average annual temp. in polar latitudes varies between -10°c to -20°C. It should be noted that 10°C isotherm remain the segergating point or

(4) line between polar and sub polar areas.



Atmospheric Circulation



The phenomena of atmospheric circulation includes the process of convection, upper atmospheric wind motion, subsisdence of air parcels to create high pressure condition over the surface and horizontal movement of surface winds from volumeneous to vaccumneous area ie from H·P to L·P zone. it should be noted that the vertical and horizontal moment of air motion takes places over the surface of earth by differentiated temperature caused by insolation heating.