

**Figure 9.4 (a) : The distribution of surface air temperature in the month of January**

**The distribution of surface air temperature in the month of July**

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**Figure 9.5 : The range of temperature between January and July**

*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. Figure 9.4 (a) and (b) 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. This can

be seen on the North Atlantic Ocean. The

presence of warm ocean currents, Gulf Stream

and North Atlantic drift, make the Northern

Atlantic Ocean warmer and the isotherms bend

towards the north. Over the land the

temperature decreases sharply and the

isotherms bend towards south in Europe.

It is much pronounced in the Siberian

plain. The mean January temperature along

60° E longitude is minus 20° C both at 80° N

and 50° N latitudes. The mean monthly

temperature for January is over 27° C, in

equatorial oceans over 24° C in the tropics

and 2° C - 0° C in the middle latitudes

and –18° C to –48° C in the Eurasian

continental interior.

The effect of the ocean is well pronounced

in the southern hemisphere. Here the isotherms

are more or less parallel to the latitudes and

the variation in temperature is more gradual

than in the northern hemisphere. The isotherm

of 20° C, 10° C, and 0° C runs parallel to 35° S,

45° S and 60° S latitudes respectively.

In July the isotherms generally run

parallel to the latitude. The equatorial oceans

record warmer temperature, more than 27°C.

Over the land more than 30°C is noticed in

the subtropical continental region of Asia,

along the 30° N latitude. Along the 40° N runs

the isotherm of 10° C and along the 40° S the

temperature is 10° C.

Figure 9.5 shows the range of

temperature between January and July. The

highest range of temperature is more than 60°

C over the north-eastern part of Eurasian

continent. This is due to continentality. The

least range of temperature, 3°C, is found

between 20° S and 15° N