



## **Chapter – 4**

### **Analysis of data (Computations)**

#### **4.1 Introduction:**

After the collected data have been scrutinized, the next task completed is the analysis of the scrutinized data. The analysis of data mostly, in this study, consists of numerical computations covering computations of the natural limits of

(i) the annual maximum temperature

and (ii) the annual minimum temperature

for the stations mentioned in **Table – 3.1**. The interpretations of the results / findings have been presented in *chapter-5* while the results / findings obtained in the study have been presented in **Chapter – 6**. The steps in the numerical computations have been outlined here.

#### **4.2 Numerical Computations:**

Numerical computations have been done in the following broad steps:

##### **Step – 4.2.1**

In the first step,

(1) the highest maximum temperature

and (2) the lowest minimum temperature

occurred in each of the 12 months at each of the 5 stations have been identified and presented in **Table – 6.1.1, Table – 6.1.2, Table – 6.1.3, Table – 6.1.4 & Table – 6.1.5**.

Thus, the tabulated data deal with

(1) the monthly maximum temperature

and (2) the monthly minimum temperature

for each of the 5 stations.

##### **Step – 4.2.2**

In the second step,

- (1) the highest maximum temperature
- and (2) the lowest minimum temperature

occurred in each year of each of the 5 stations have been identified and presented in **Table – 6.2.1, Table – 6.2.2, Table – 6.2.3, Table – 6.2.4 & Table – 6.2.5**. Thus, the tabulated data deal with

- (1) the annual maximum temperature
- and (2) the annual minimum temperature

for each of the 5 stations.

#### **Step – 4.2.3**

In the third step, the two parameters namely mean  $\mu$  and standard deviation  $\sigma_e$  have been estimated for each of the characteristics

- (1) the annual maximum temperature
- and (2) the annual minimum temperature

for each of the 5 stations.

The parameters  $\mu$  and  $\sigma_e$  for a specified station are nothing but the population mean and population variance respectively of the specified characteristic. Thus the estimates of  $\mu$  and  $\sigma_e$  obtained are nothing but the estimates of the corresponding characteristics and the estimates of the standard deviations of the corresponding estimates. The estimated values of annual maximum temperature and annual minimum temperature with the respective estimated values of the corresponding standard deviation have been presented in **Table – 6.3**.

#### **Step – 4.2.4**

In the next step, 95 % confidence interval of the two characteristics

- (1) the annual maximum temperature
- and (2) the annual minimum temperature

for each of the 5 stations have been computed. The values of them have been presented in **Table – 6.4**.

#### **Step – 4.2.5**

In the next step, 99 % confidence interval of the two characteristics

(1) the annual maximum temperature

and (2) the annual minimum temperature

for each of the 5 stations have been computed. The values of them have been presented in

**Table – 6.5.**

**Step – 4.2.6**

In the next step, natural interval of the two characteristics

(1) the annual maximum temperature

and (2) the annual minimum temperature

for each of the 5 stations have been computed. The values of them have been presented in

**Table – 6.6.**

**Step – 4.2.7**

In the next step, it has been examined whether the observed values of each of the two characteristics

(1) the annual maximum temperature

and (2) the annual minimum temperature

for each of the 5 stations lie within the corresponding interval obtained in **Step - 4.2.6.**

The findings have been presented in **Table – 6.7.**