

Chapter – 5

Interpretation and Conclusion

5.1 Introduction:

The interpretations of the result / findings, obtained on analyzing the collected data have been presented below. Also the limitation of the findings has been discussed along with the presentation of some important recommendations.

5.2 Discussion (Summery of Findings):

The findings presented in **Table – 6.4** are the 95% confidence intervals confidence intervals of the two characteristics

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

at the 5 stations under study. This means that the annual maximum temperature and the annual minimum temperature at each station will lie within the corresponding interval, shown in **Table – 6.4**, in more than 95 years out of 100 years.

Similarly, the findings presented in **Table – 6.5** are the 99% confidence intervals confidence intervals of the two characteristics mentioned above at the 5 stations under study. This means that the annual maximum temperature and the annual minimum temperature at each station will lie within the corresponding interval, shown in **Table – 6.5**, in more than 99 years out of 100 years.

Similarly, the findings presented in **Table – 6.6** are the natural intervals i.e. 99.73% confidence intervals confidence intervals of the two characteristics mentioned above at the 5 stations under study. This means that the annual maximum temperature and the annual minimum temperature at each station will lie within the corresponding interval, shown in **Table – 6.6**, in more than 9973 years out of 10000 years.

It has been found in **Table – 6.7** that almost all the observed values of each of the two characteristics for each of the 5 stations lie within the corresponding natural intervals obtained in **Step – 4.2.6**. This implies that there is no any significant cause that influences upon the changes in temperature in the context of Assam over years i.e. temperature in Assam has not been changing (since 1969) over years significantly. The changes occurred in them are due to the chance causes only.

It is to be noted that it is possible to apply the area property of normal distribution to know whether there exists any significant assignable cause in a region which forces the temperature in the region to be changed and to determine forecasted interval value on various characteristics of temperature with desired probability.

5.3 Limitation of Findings:

The findings obtained in this study, however, not completely free from inaccuracy and error. These may suffer from some limitations. Some of the limitations of the findings have been mentioned below.

The study done here is based on the following assumption:

- (1) The facts and figures on the maximum temperature and the minimum temperature collected from the stations are free from mechanical errors (i.e. errors due to the machine / tool having unknown defect / defects and due to wrong handling of machine / tool).
- (2) The facts and figures observed have been recorded correctly.
- (3) Data on the characteristics mentioned in (1) are free from inconsistency.
- (4) Chance errors associated to the observations in each of the characteristics are independently and identically distributed with normal probability distribution having zero means and a common unknown variance.

Thus, the findings obtained in this study are reasonable / meaningful if these assumptions hold good. If any or all of the assumptions is (are) not true, the finding obtained in the study are bound to be inaccurate.

5.4 Some Recommendations:

The following results on the temperature in Assam can be recommended that may be of significant importance to the meteorological and environmental scientists and for the society also:.

- (1) It is possible to apply the area property of normal distribution to know whether there exists any significant assignable cause in a region which forces the temperature in the region to be changed and to determine forecasted interval value on various characteristics of temperature with desired probability.
- (2) There is no any significant cause that influence upon the changes in temperature, in Assam, over years i.e. temperature in Assam has not been changing (since 1969) over years significantly. The changes in temperature, occurred since 1969, are due to the chance causes only.
- (3) The annual maximum temperature and the annual minimum temperature at each of the station under study will lie within the corresponding interval, shown in **Table – 6.4**, in more than 95 years out of 100 years.
- (4) The annual maximum temperature and the annual minimum temperature at each of the station under study will lie within the corresponding interval, shown in **Table – 6.5**, in more than 99 years out of 100 years.
- (5) The annual maximum temperature and the annual minimum temperature at each of the station under study will lie within the corresponding interval, shown in **Table – 6.6**, in more than 9973 years out of 10000 years.