14.4 CUMULIVE FREQUENCY

(i) Discrete frequency distribution : From the table of discrete frequency distribution, it can be identified that number of employees whose monthly income is 4000 or how many employees of monthly income 1100 are there. But if we want to know how many employees whose monthly income is upto 11000, then we should add 10 + 8 + 5 7 i.e., number of employees whose monthly income is upto 11000 is 30. Here we add all previous frequency and get cumulative frequency. If will be more clear from the following table

Class	Frequency (f)	Cumulative frequency (cf)	Explanation
4000	10	10	10 = 1 0
6000	8	18	10 + 8
8000	5	23	18 + 5
11000	7	30	23 + 7
20000	2	32	30 + 2
25000	1	33	32 + 1

(ii) Continuous frequency distribution : In the previous page we obtained cumulative frequency for discrete series. Similarly cumulative frequency table can be made from continuous frequency distribution also. For example, for table :

Monthly income	No. of employee	Cumulative	Explanation
Variate (x)	Frequency (f)	Frequency (cf)	
0 – 5	72	72	72 = 72
5 – 10	103	175	72 + 103 = 175
10 – 15	50	225	175 + 50 = 225
15 - 20	25	250	225 + 25 = 250

Above table can also be written as follows :

Clas	Cumulative Frequency
Less than 5	72
Less than 10	175
Less than 15	225
Less than 20	250

From this table the number of students of age less than the upper limit of a class, i.e., number of student whose age is less than 5, 10, 15, 20 year can determined by merely seeing the table but if we need the number students whose age is more than zero, more than 5, more than 10 or more than 15, then table should be constructed as follows :

Class	Frequency	Age Cumulative frequency	Explanation
0 – 5	72	0 and more 50	250 = 250
5 – 10	103	5 and more 78	250 – 72 = 178
10 - 15	50	10 and more 75	178 – 103 = 75
15 - 20	25	15 and more 25	75 – 50 = 25