Grouped Data

Understanding Notes

- Grouped data means organizing raw data into groups or classes to make it easier to understand and analyze.
- In large data sets, it is difficult to study each item separately. Grouping helps to summarize and present the data neatly.
- Each group or class is called a class interval.
- The difference between the upper and lower limits of a class is called the class width.
- Frequency is the number of observations falling into each class interval.
- In a grouped data table, we use the following terms:
 - Class Interval: The range of values.
 - Frequency: Number of observations in a class.
 - Lower Limit: The smallest value of the class.
 - Upper Limit: The largest value of the class.
- Grouped data is often represented through a frequency distribution table.

Different Types of Examples with Solutions

Example:

Organizing Data into a Frequency Table

The marks of 10 students in a test are: 12, 15, 17, 14, 18, 12, 16, 14, 19, 17

Group the marks into intervals 10–12, 13–15, 16–18, 19–21.

Solution:

Marks (Class Interval)	Tally Mark	Number of students (Frequency)
10-12		2
13-15		2
16-18		4
19-21		2

Example:

Finding Class Width

Given the class interval 20–25, find the class width.

Solution: Class Width = Upper Limit – Lower Limit = 25 – 20 = 5

Example:

Interpreting a Frequency Table

Given the table:

Class Interval	Tally Mark	Frequency
0-10	Ш	5
10-20		8
20-30	ШШ	7

How many students scored between 0 and 30?

Solution:

Total students = 5 + 8 + 7 = 20

Example:

Constructing a Frequency Table from Data

Heights (in cm) of students are: 142, 150, 148, 151, 155, 143, 149, 152, 150, 144

Group into intervals 140–145, 146–150, 151–155.

Solution:

Class Interval	Tally Mark	Frequency
140-145		3
146-150		4
151-155		3

Summary Points

- Grouped data simplifies large sets of data by arranging them into intervals.
- Class intervals must not overlap.
- Frequency shows how many data points are in each class.
- Class width is found by subtracting the lower limit from the upper limit.
- Grouped data can be presented as frequency tables or histograms for better visualization.