

DATA AND THEIR REPRESENTATION

- **Statistics:** Statistics is a branch of mathematics which deals with collection, presentation, analysis, interpretation of data and drawing of inferences/conclusions there from.
- **Data:** Facts or figures, which are numerical or otherwise collected with a definite purpose.
- **Types of Data:**
 - Primary Data:** Data which an investigator collects for the first time for his own purpose.
 - Secondary Data:** Data which the investigator obtains from some other source, agency or office for his own purpose
- **Presentation of Data:**
 - Raw or Ungrouped Data:** The data obtained in original form and presented ungrouped without any re-arrangement or condensed form
 - An Array:** The Presentation of a data in ascending or descending order of magnitude.
 - Grouped Data:** Rearrangement or condensed form of data into classes or groups.
- **Range of Data:** Difference between the highest and lowest values in the data.
- **Frequency:** The number of times an observation occurs in data.
- **Class Interval:** Each group in which the observations/values of a data are condensed.
- **Class limits:** Values by which each class interval is bounded . Value on the left is called lower limit and value on the right is called upper limit.
- **Class size:** Difference between the upper limit and the lower limit.
- **Class mark of a class interval:** Mid value of a class interval = $\frac{\text{lower limit} + \text{upper limit}}{2}$
- **Cumulative Frequency of a class:** Total of frequencies of a particular class and of all classes prior to that class.
- **Graphical Representation of Data:**
 - Bar Graph:** A pictorial representation of data in which usually bars of uniform width are drawn with equal spacing between them on one axis and values of variable (frequencies) are shown on other axis.
 - Histogram:** A pictorial representation like bar graph with no space between the bars. It is used for continuous grouped frequency distribution.
 - Frequency Polygon:** A graphical representation of grouped frequency distribution in which the values of the frequencies are marked against the class mark of the intervals and the points are joined by line segments.

CHECK YOUR PROGRESS:

1. The class mark of the class 90 -120 is .
(A) 90 (B) 105 (C) 115 (D) 120
2. In a given data some variables are given with particular values, we want to represent these graphically, then we can represent these, using-
(A) Histogram (B) Frequency Polygon
(C) Bargraph (D) None
3. The range of the data 25, 18, 20, 22, 16, 6, 17, 15, 12, 30, 32, 10, 19, 8, 11, 20 is -
(A) 10 (B) 15 (C) 18 (D) 26

4. When the information is gathered from a source which already has the information stored, the data obtained is called-
 (A) Primary data (B) Secondary Data
 (C) Frequency data (D) Raw data
5. Class size of the class interval 5 -15 is -
 (A) 5 (B) 1 (C) 10 (D) 20
6. Upper class limits of the class interval 30 - 39 is-
 (A) 30 (B) 34 (C) 39 (D) 35
7. In a frequency distribution the mid value of a class is 10 and the width of the class is 6. The lower limit of the class is -
 (A) 6 (B) 7 (C) 8 (D) 12
8. Facts or figures collected with a definite purpose are called-
 (A) data (B) Histogram (C) Median (D) mode

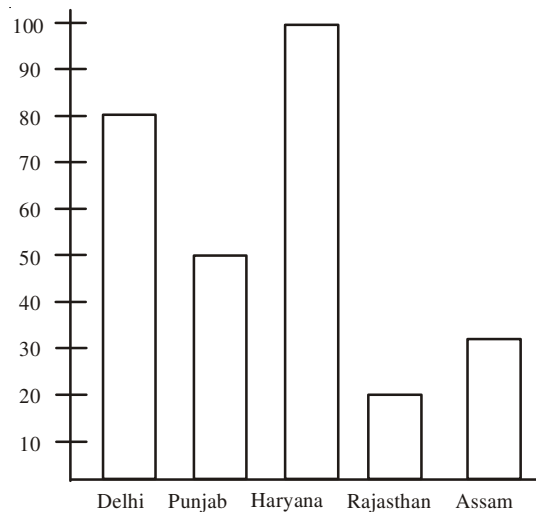
STRETCH YOURSELF

1. The following cumulative frequency distribution table shows the marks obtained by 55 students of class X. Represent this as frequency distribution table

Marks	Cumulative Frequency
Less than 5	2
Less than 10	8
Less than 15	21
Less than 20	38
Less than 25	49
Less than 30	53
Less than 35	55

2. The bar graph given below represents the tickets of different state lotteries sold by an agent on a day. Read the bar graph and answer the following:

- (iii) Of which state, minimum tickets were sold?
- (iv) Say true or false: The Maximum number of tickets is three times the minimum number of tickets.



- (i) How many tickets of Assam state lottery were sold.
- (ii) Of which state, maximum tickets were sold?

ANSWERS

CHECK YOUR PROGRESS :

- | | | | |
|------|------|------|------|
| 1. B | 2. C | 3. D | 4. B |
| 5. C | 6. C | 7. B | 8. A |

STRETCH YOURSELF :

			20 - 25	11
1.	Marks	No. of Students	25 - 30	4
	0 - 5	2	30 - 35	2
	5 - 10	6	2.	(i) 30 (ii) Haryana
	10 - 15	13		(iii) Rajasthan
	15 - 20	17		(iv) False