Education that enlightens!

Data Handling

1. A collection of information is called the data. Data obtained in the original form is called a raw data.
2. To draw meaningful inferences, we need to organize the data systematically.
3. The systematic arrangement of data, either in ascending or in descending order, is called an arrayed data.
4. The number of times a particular observation occurs is called its frequency.
5. The difference between the highest and lowest values of the observations in a given data is called its range.
6. When the number of observations is large, the data is usually organized into groups, called class intervals.
7. Presentation of data in the form of groups (classes) along with the frequency of each class is called grouped data or frequency distribution.
8. Frequency distributions are of two types: (i) Discrete frequency distribution (ii) Continuous or grouped frequency distribution.
9. The lower value of a class interval is called its lower limit and the upper value of the class interval is called its upper limit.
10. The difference between the upper limit and lower limit of a class interval is called the class size. The mid-value of a class interval is called its class mark.
11. In a bar graph, bars of uniform width are drawn with various heights. The height of a bar represents the frequency of the corresponding observation.
12. A histogram is a pictorial representation of the grouped data in which class intervals are generally taken along the horizontal axis and class frequencies along the vertical axis. For each class a rectangle is constructed with base as the class interval and height determined from the class frequency such that there is no gap between any two successive rectangles.
13. Pie chart represents data in relative quantities by using the area of sectors in the circle.

Central angle for a component = $\left(\frac{\text{Value of the component}}{\text{Sum of the values of all components}} \times 360\right)^{\circ}$

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14. The words probable, chance etc. are used for an event which has some chance of uncertainty. In probability, we give a numerical value to certainty and uncertainty associated with any event.
    i. Experiment: An operation which can produce some well-defined outcomes it called an experiment.
    ii. Random experiment: An experiment in which all possible outcomes are known and the exact outcome cannot be predicted in advance, is called a random experiment.
    iii. By a trial, we mean performing a random experiment.
    iv. Event: The collection of all or some of the possible outcomes is called an event.

15. Let E be an event, then probability of occurrence of E is defined as

$$P(E) = \frac{\text{number of out comes favourable to E}}{\text{total number of possible outcomes}}$$

16. The probability of an event always lies between 0 and 1.