Q1. What is Statistics?

statistics is science of collectiong ,organizing and analyzing data.

Q2. Define the different types of statistics and give an example of when each type might be used.

1)Descriptive 2)Inferential

descriptive Statistics, the Data or Collection Data are described in a summarized way, whereas in inferential Statistics, we make use of it in order to explain the descriptive kind

Q4. Categorise the following datasets with respect to quantitative and qualitative data types:

qualitative data:

(i) Grading in exam: A+, A, B+, B, C+, C, D, E

(ii) Colour of mangoes: yellow, green, orange, red

quantitative:

(iii) Height data of a class: [178.9, 179, 179.5, 176, 177.2, 178.3, 175.8,...]

(iv) Number of mangoes exported by a farm: [500, 600, 478, 672, ...]

Q5. Explain the concept of levels of measurement and give an example of a variable for each level.

Nominal: the data can only be categorized ex : City of birth

Ordinal: the data can be categorized and ranked ex:Top 5 Olympic medallists

Interval: the data can be categorized, ranked, and evenly spaced ex:Temperature in Fahrenheit or Celsius

Ratio: the data can be categorized, ranked, evenly spaced, and has a natural zero ex:student mark in class

Q6. Why is it important to understand the level of measurement when analyzing data? Provide an example to illustrate your answer.

It is important to understand the level of measurement of variables in research, because the level of measurement determines the type of statistical analysis that can be conducted, and, therefore, the type of conclusions that can be drawn from the research.

Q7. How nominal data type is different from ordinal data type.

Nominal data is a group of non-parametric variables, whereas Ordinal data is a group of non-parametric ordered variables. Ordinal data is analyzed by mode, median, quartiles, and percentile, whereas nominal data is analyzed by grouping variables into categories and calculating the distribution mode

Q8. Which type of plot can be used to display data in terms of range?

Histogram

Q9. Describe the difference between descriptive and inferential statistics. Give an example of each type of statistics and explain how they are used.

Inferential statistics helps to compare data, make hypotheses and predictions. Descriptive statistics explains already known data related to a particular sample or population of a small size. Inferential statistics, however, aims to draw inferences or conclusions about a whole population

Descriptive statistics is used to describe the characteristics of the population using a sample. Inferential statistics uses various analytical tools to draw inferences about the population using samples. Measures of central tendency and measures of dispersion. Hypothesis testing and regression analysis.

Q10. What are some common measures of central tendency and variability used in statistics? Explain how each measure can be used to describe a dataset.

1)mean: Mean is the ratio of sum of all the observations and total number of observations in a data set. For example, mean of 2, 6, 4, 5, 8 is: Mean = (2 + 6 + 4 + 5 + 8) / 5 = 25/5 = 5

2)median :A median is the centre value of a given list of observations when arranged in an order. For example, a list of observations is 33, 55, 77, 22, 11. Arranging in ascending order, we get: 11,22,33,55,77 Hence, the median is 33.

3)mode : A mode, in statistics, is defined as the value that has higher frequency in a given set of values. It is the value that appears the most number of times.

ex: (2,2,2,3,4,4,5,5,5,5,6,7) mode is 5

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