

BIO401 – BIOSTATISTIC
MID TERM IMPORTANT QUESTIONS

Q-1 What are percentiles?

A A percentile (or a centile) is a measure used in statistics indicating the value *below which* a given percentage of observations in a group of observations fall. For example, the 20th percentile is the value (or score) below which 20% of the observations may be found.

Q-2 Difference between frequency distribution and histogram.

A A frequency distribution shows **how often each different value in a set of data occurs**. A frequency distribution is a representation, either in a graphical or tabular format, that displays the number of observations within a given interval. The interval size depends on the data being analyzed and the goals of the analyst. The intervals must be mutually exclusive and exhaustive. Frequency [distributions](#) are typically used within a statistical context. Generally, frequency distribution can be associated with the charting of a [normal distribution](#). A histogram is the most commonly used graph to show frequency distributions. A **frequency histogram** is a graph with vertical columns that represent the frequency of a data point or range of data points occurring in a set of data. It's a really useful tool we can use to visualize a data set and make it easier to understand.

Q-3 What is meant by statistics?

A Statistics are defined as numerical data, and is the field of math that deals with the collection, tabulation and interpretation of numerical data. An example of statistics is **a report of numbers saying how many followers of each religion there are in a particular country**

Q-4 What is Quantitative variables and Qualitative variables?

A Quantitative Variables - **Variables whose values result from counting or measuring something**. Examples: height, weight, time in the 100 yard dash, number of items sold to a shopper. Qualitative Variables - Variables that are not measurement variables. Their values do not result from measuring or counting.

Q-5 What are types of sampling?

- Simple random sampling. ...
- Systematic sampling. ...
- Stratified sampling. ...
- Clustered sampling. ...
- Convenience sampling. ...
- Quota sampling. ...
- Judgement (or Purposive) Sampling. ...
- Snowball sampling

Q-6 What is an outlier?

A An outlier is **an observation that lies an abnormal distance from other values in a random sample from a population**.

Q-7 Write names of probability sampling.

A Probability sampling methods include **simple random sampling, systematic sampling, stratified sampling, and cluster sampling**.

Q-8 What are different shapes of distribution?

A **There are two main types of Distribution we are concerned with in statistics:**

- Frequency Distributions: A graph representing the frequency of each outcome occurring.
- Probability Distributions: ...
- The most common distribution shapes are:
- Symmetric:
- Bell-shaped:
- Skewed to the left:
- Skewed to the right:
- Uniform:

Q-9 What is primary and secondary Data?

A Primary data refers to the first hand data gathered by the researcher himself. **Secondary data means data collected by someone else earlier.** Surveys, observations, experiments, questionnaire, personal interview, etc. Government publications, websites, books, journal articles, internal records etc

Q-10 What is random error?

A A random error makes **the measured value both smaller and larger than the true value**; they are errors of precision. Random errors occur by chance and cannot be avoided. Random error is due to factors which we do not, or cannot, control.

Q-11 What is Cluster sampling and Systematic Sampling?

A **Cluster sampling** is a probability sampling technique where researchers divide the population into multiple groups (clusters) for research.

Systematic sampling is a type of probability sampling method in which sample members from a larger population are selected according to a random starting point but with a fixed, periodic interval. This interval, called the sampling interval, is calculated by dividing the population size by the desired sample size.

Q-12 What are types of distribution?

A There are many different classifications of probability distributions. Some of them include the **normal distribution, chi square distribution, binomial distribution, and Poisson distribution.**