

.Name: Jamal Khan

ID NO: 13363

**Q:1** What is research explain systematically.

**Ans: MEANING OF RESEARCH**

- *Research in common parlance refers to a search for knowledge*
- *A scientific and systematic search for pertinent information on a specific topic.*
- *An art of scientific investigation*
- *A process of systematic scientific data.*

*Research is,*

- *Collection;* - Data Collection. Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes.
- *Analysis;* - Data Analysis. Different statistics and methods used to describe the characteristics of the members of a sample or population, explore the relationships between variables, to test research hypotheses, and to visually represent data are described.
- *And interpretation;*- Meaning of Interpretation Interpretation refers to the task of drawing inferences from the collected facts after an analytical and or experimental study. Interpretation also extends beyond the data of the study to inch the results of other research, theory and hypotheses.”

*As to find solutions to a problem.*


**Q:2** Differentiate between prospective cohort and retrospective cohort study design with the help of example.

**Ans: Prospective vs. Retrospective Cohort Study**

In a retrospective cohort study, the group of interest already has the disease/outcome. In a prospective cohort study, the group does not have the disease/outcome, although some participants usually have high risk factors.

**Retrospective example :** a group of 100 people with AIDS might be asked about their lifestyle choices and medical history in order to study the origins of the disease. A Second group of 100 people without AIDS are also studied and the two groups are compared.

**Prospective example:** a group of 100 people with high risk factors for AIDS are followed for 20 years to see if they develop the disease. A control group of 100 people who have low risk factors are also followed for comparison. A retrospective cohort study can be combined with a prospective cohort study: the researcher takes the retrospective study groups, and then follows the cohort in the future.

**Q3:** What is meant by Data, explain its types with examples.

**Ans:- Data:-** Data can be defined as a systematic record of a particular quantity. It is the different values of that quantity represented together in a set. It is a collection of facts and figures to be used for a specific purpose such as a survey or analysis. When arranged in an organized form, can be called information. The source of data ( primary data, secondary data) is also an important factor.

**Types of Data**

Data may be qualitative or quantitative. Once you know the difference between them, you can know how to use them.

- **Qualitative Data:** They represent some characteristics or attributes. They depict descriptions that may be observed but cannot be computed or calculated. For example, data on attributes such as intelligence, honesty, wisdom, cleanliness, and creativity collected using the students of your class a sample would be classified as qualitative. They are more exploratory than conclusive in nature.
- **Quantitative Data:** These can be measured and not simply observed. They can be numerically represented and calculations can be performed on them. For example, data on the number of students playing different sports from your class gives an estimate of how many of the total students play which sport. This information is numerical and can be classified as quantitative.

- **Examples:**

- *Quantitative Data:*

- Amount of money you have

- Height

- Weight

- Number of people living in your town

- Number of students who take statistics

- *Qualitative Data:*

- Hair color

- Blood type

- Ethnic group

- The car a person drives

- The street a person lives on