Name- Shreya H. Singh
Class - FY Msc(CA)
Rollno- 19

Subject - RM

Theory Assignment-1. ①

1) What is Research? List all characteristics of research.

- Research -

i) It is defined as a critical and exhaustive investigation to discover new facts, interpret them in light of known ideas, theories, and laws, resurrect current laws & theories in light of newly discovered facts, & apply the conclusion to pratical purposes.

ii) In other words, the systematic and objective examination and recording of controlled observations that may lead to the formation of generalizations, principles that result in prediction & potentially ultimate control of occurrences is referred to as research.

Characteristics -

i) Empricial
ii) Controlled
iii) Employs
iv) Analytical
v) Objective, Unbiased and logical
vi) Employs quantitative or statistical methods.

2) Explain the different research approaches in detail.

- 1) Qualitative research -

It is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The process of research involves emerging questions and procedures, data typically collected in the participant's setting, data

analysis inductively building from particulars to general themes, & the researcher making interpretations of the meaning of the data.

2) Qualitative research -

Is used to quantify the problem by way of generating numerical data or data that can be transformed into usable statistics. It is used to quantify attitudes, opinions, behaviours, and other defined variables - and generalize results from a larger sample population.

3) Mixed methods research -

It is an approach to inquiry involving collecting both quantitative and qualitative data integrating the two forms of data, & using distinct designs that may involve philosophical assumptions.

3) List all seven steps of the research process.

- a) Define research problem
- b) Review of Literature
- c) Formulate hypotheses
- d) Preparing the research design
- e) Data collection
- f) Data analysis
- g) Interpretation and report writing.

4) Differentiate bet^n Scientific Method Vs. Non Scientific Method.

parameters.	Scientific Method/ Research	Non-Scientific Method / Research
1) Definition	It refers to research that collects data using systematic methods & strategies.	It refers to research conducted without any systematic methods and scientific basis.
2) Nature	Can be repeated several times using the same methods & data.	Cannot be repeated since it uses intuition, personal experience, & personal beliefs.
3) Data Collection	Is collected using different techniques such as observation, formulation & testing hypothesis.	Data collection only uses observation.
4) Conclusion	Follows a logical & systematic process in arriving at a conclusion.	Does not follow any logical, scientific or systematic method.
5) Objective VS Subjective	Objective	Subjective

5) What are the different steps in scientific Method.

– 1) Ask a Question -

The scientific method starts when you ~~wask~~ ask a question about something that you ~~deserve~~ observe: How, what, when, who, which, why or where?

2) DO Background Research-

Rather than starting from scratch in putting together a plan for answering your question, you want to be a savvy scientist using library and Internet research to help you find the best way to do things and ensure that you don't repeat mistakes from the past.

3) Construct a Hypothesis-

A hypothesis is an educated guess about how things work. It is an attempt to answer your question with an explanation that can be tested. A good hypothesis allows you to then make a prediction.

4) Test your hypothesis by Doing an experiment-

Your experiment tests whether your prediction is acurate & thus your hypothesis is supported or not.

5) Analyze your Data & draw a Conclusion-

Once your experiment is complete, you collect your measurements and analyze them to see if they support your hypothesis or not.

6) Communicate Your Results-

To complete your science fair project you will communicate your results to others in a final report and / or a display board.

6) Explain terms :
a) Inductive logic & b) Deductive Logic.

A) Inductive logic -
i) When there is little to no existing literature on a topic, it is common to perform inductive research, because there is no theory to test.
ii) It consists of three stages:
a) Observation
- A low-cost airline flight is delayed
- Dogs A & B have fleas
- Elephants depend on water to exist

b) Seeking patterns
- Another 20 flights from low-cost airlines are delayed
- All observed dogs have fleas
- All observed animals depend on water to exist.

c) Developing a theory / general conclusion
- Low cost airlines always have delays
- All dogs have fleas
- All biological life depends on water to exist

B) Deductive logic -
i) When conducting deductive research, you always start with a theory.
ii) Reasoning deductively means testing these theories.
iii) It consists of four stages :
a) Start with an existing theory & create a problem statement
b)

b) formulate a falsifiable hypothesis, based on existing theory.
c) Collect data to test the hypothesis.
d) Analyze & test the data.
e) Decide whether you can reject the null hypothesis.