

Section A

Answers (1)

(i) (c) Research

(ii) (d) All of these

(iii) (c) Complete Randomized Block Design

(iv) (a) Null hypothesis

(v) (a) Experimental design

(vi) (b) Interview

(vii) (d) All of these

(viii) (d) All of these

(ix) (a) Tabulation

(x) (c) Interval level

Section B

Answers (2)

Definition of Research

① Research is more systematic activity directed

towards discovery and development on organised body of knowledge. At to John Best

② Research is a continuous cycle of scientific methods for finding solution of problems. At to Anonymous

## Importance of Research

- ① Development of knowledge :-
- ② Scientific study of social life:
- ③ Welfare of Humanity:
- ④ Classification of facts:
- ⑤ Social control & Prediction, etc.

③

Answer ③

Hypothesis is usually considered as the principle instrument in research. Its main function is to suggest new experiment and observation.

When we take about hypothesis, Hypothesis is a guess, a hunch (or) an assumption or the existence of some fact which serve to explain the connection of facts in a given situation.

A research hypothesis is a predictive statement capable of being tested by scientific methods. That relates on independent variable to some dependent variable.

### Definition of Hypothesis

"The hypothesis is a hunch, guess, imaginative idea which become ~~that~~ the basis for action or investigation?"  
AIC to Lundberg

Hypothesis is a combination of statement of the relation between two or more variables.  
AIC to Kerlinger

If means we can say that -

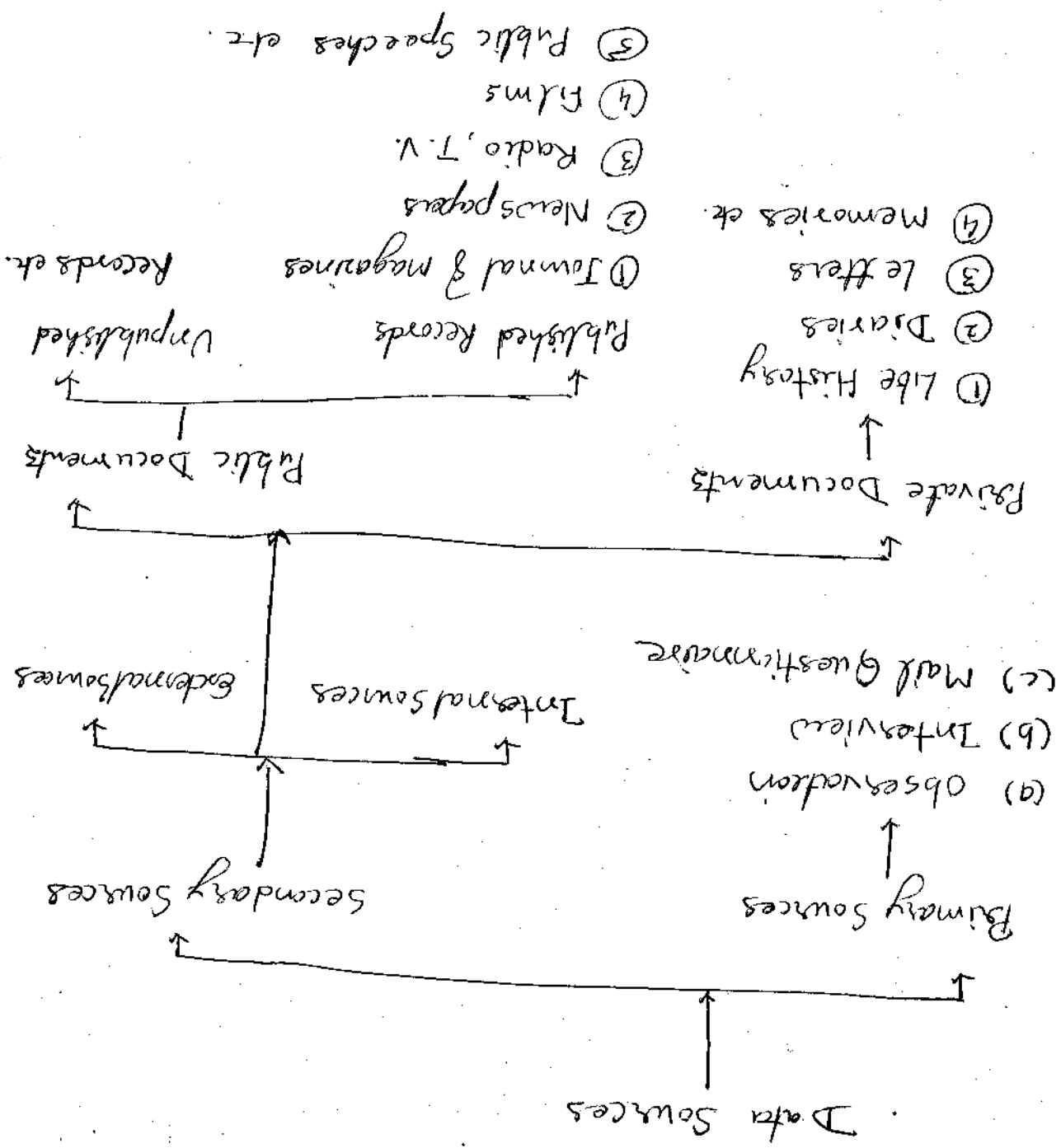
- Hypothesis is a hunch,
- Hypothesis establishes relationship of two variables.
- Hypothesis as a proposition which need to be tested.
- Hypothesis serves as a basis for research.

In sociology, quantitative research refers to the systematic empirical investigation of social phenomena via statistical, mathematical or numerical data or computational techniques.

Definition - "Quantitative research is explaining phenomena by collecting numerical data that are analysed using mathematically based methods (in particular statistics)."   
 At to Alaga and Grunderson (2000)

Main characteristics of Quantitative Research

- The data is usually gathered using more structured research instruments.
- The results are based on larger sample sizes that are representative of the population.
- The research study can usually be replicated or repeated, given its high reliability.
- Researcher has a clearly defined research question to which objective answers are sought.
- All aspects of the study are usually designed before data is collected.
- Data are in form of numbers and statistics.
- Project can be used to generalize concepts more widely, predict future results, or investigate causal relationships.
- Researcher uses tools, such as questionnaires or equipment to collect numerical data.



Answer 5

5

Answers 6

The text or context part of the research report provides the complete outline of the ~~research~~ report along with all details. Title of the research study is repeated at the top of the first page of the main text and then follows the other details on pages numbered consecutively, beginning with the second page. Each main section of the report should begin on a new page.

The main text of the report should have

the following sections:

- (i) Introduction
- (ii) Statement of findings & recommendations.

(iii) The results

(iv) The implications drawn from the results &

(v) The summary / suggestions, etc.

Randomized Block Design:

With a randomized block design, the experimenter divides subjects into subgroups called blocks, such that the variability within blocks is less than the variability between blocks. Then subjects within each block are randomly assigned to treatment conditions. Compared to a completely randomized design, this design reduces variability within treatment conditions and potential confounding, producing a better estimate of treatment effects.

Example:

Treatment	Placebo	Female	250
		Male	250
Vaccine	Placebo	Female	250
		Male	250

The Table shows a randomized block design for a hypothetical experiment. Subject assigned to blocks, based on gender. Then within each block, subjects are randomly assigned to treatments (either a placebo or a vaccine). For this design, 250 men get the placebo, 250 men get the vaccine, 250 women get the placebo and 250 women get the vaccine.

This design ensures that each treatment condition has an equal proportion of men and women. As a result, differences between treatment conditions cannot be attributed to gender.

Answer (8) Level of Measurement

Measurement is the assignment of numbers to objects or events, according to rules. Dr. W. Bredford Goodenok

A numeral is a symbol of the form "2", "3", "4", ... or I, II, III, ...

If have no quantitative meaning unless we give it such a meaning. It is simply a symbol of a special kind.

There are four types of Level of Measurement

- ① Nominal level
- ② Ordinal level
- ③ Interval level
- ④ Ratio level

① Nominal level of Measurement:

~~It is a~~ It is a ~~simple~~ system of assigning numbers or other symbols to event in order to label them.

Ex: The assignment of numbers of football players in order to identify them.

→ Nominal scale is least powerful level of measurement.



If indicates no order or distance relationship and has no arithmetic origin.

A nominal scale simply describes differences between things by assigning them to categories.

Ex: male & female [mutually exclusive but not both] (=) equivalent

Statistical measures used: Frequency multiple responses. Ordinal level: chi-square test, co-ohient

In this level of measurement numbers are used to indicate the order of magnitude of the observations. It is also called as ranking measurement.

Ex: If there are 4 types of fertilizers and and of different

they are ordered on the basis of quality as

Grade A  
Grade B  
Grade C  
Grade D

Ordinal scale only permit the ranking of items from highest to lowest.

Ordinal level measures have no absolute zero value and real difference between two value/rankings may not be equal.

The ordinal measurement includes not only the relations of equivalence ( $=$ ) but also the relations "greater than" ( $>$ ) or "less than" ( $<$ )

Statistical measures used: Co-efficient of correlation.

### ③ Interval level of Measurement:

It has the combined properties of ordinal & cardinal measures. An interval scale has an arbitrary zero point with further numbers placed at equal intervals.

Ex: Thermometer  
Properties: ( $=$ ), ( $>$ ), ( $<$ ), Known ratio of any two intervals. The joining limitation of the interval scale as the lack of true zero.

t test, F-test

Statistical measures used: Mean, standard deviation.

### ④ Ratio level of Measurement:

It has all the properties of the interval scale and also known ratios of any two scale values. Ratio scales have an absolute or true zero of measurement. It has the highest level of measurement.

- Properties:
- equidistance
  - greater than
  - less than
  - known ratio of any two intervals
  - known ratio of any two scale values
- Example: weight, height, year of experience

Answer ⑤

Precautions needed for writing a research report

- ① The length of the report should be long enough to cover the subject but short enough to maintain interest.
- ② A research report should not, if this can be avoided, be dull, if should be such as to sustain reader's interest.

③ The report should be written in an objective style

in simple language, avoiding expressions such as

"it means", "these may be" and the like.

③ Readers are often interested in acquiring a quick knowle-

dge of the main findings and as such ~~as~~ the report

must provide a ready availability of the findings.

④ For this purpose, charts, graphs, and statistical tables

may be used for the various results in the main

report in addition to the summary of important findings.

⑤ The layout of the report should be well and in

accordance ~~is~~ with the objective of the research problems.

⑥ The report should be free from grammatical mistakes.

⑦ The report must present the logical analysis of the

subject matter.

⑧ A research report should show cogency and

should necessarily be an attempt to solve some intellectual problem.

cont...

⑨ Towards the end, The report must also state the policy implications relating to the problem under consideration.

⑩ Appendices should be enlisted in respect of all the technical data in report.

⑪ Bibliography of sources consulted as a must for a good report and must necessarily be given.

⑫ Index is also considered an essential part of a good report.

⑬ Report must be attractive in appearance, neat & clean whether typed or printed.

⑭ Calculated confidence limits must be mentioned.

⑮ Objectives of the study, nature of the problem, methods employed and analysis techniques adopted must all be clearly stated in the beginning of the report in the form of introduction, etc.

Answers (10)

(a) Classification of Interviews according to the period of contact:

① Short contact interviews: for filling up schedules etc. a single sitting of small duration suffices.

② Prolonged contact interviews: In contact with research by schedule, the case-history method requires prolonged interviews.

(b) According to subject matter

① Qualitative interviews: The qualitative interviews are about complex and non-quantifiable subjects.

Ex: Interview held for case studies.

② Quantitative interviews: The quantitative interviews are those in which certain set facts are gathered about a large number of persons.

Ex: Census interviews.

③ Mixed interviews: In certain interviews both types of data - the routine and specialised - is sought. Some of it is quantifiable which some is not.

(c) According to Role

(1) Non-directive interviews: This is also known as free

or unstructured interview. This is a type of interview in which the interviewer exercises on control, provides ~~to ask~~ no direction and has no brief or pre-determined set of questions to ask. The interviewee merely engages the interviewee in talk and encourages.

② Focussed interview: A special features of focussed

interview which distinguish it from other types.

(a) This types of interview takes place when the interviewees are in a specialised concrete situation.

Ex: See a particular film or hear a particular Radio.

cont...

- ① Obtain prior knowledge of what to observe :-
  - ② Examine general and specific objectives :-
  - ③ Define and establish categories :-
  - ④ Observe carefully and critically :-
- Observation as a research data-gathering process, starts adherence to the spirit of scientific inquiry. The following standards which characterise observers and observations

### Guidelines to effective and useful observation

Answers 11

- ③ Repeated interview: This type of interview is eminently suited to trace the development of processes and to determine the factors or attitudes which are behind a given behaviour pattern or situation.
- (iv) In an interview of this type the inner feelings and emotional attitudes of the interviewees vis-a-vis a given problem or situation are given particular attention.
- (iii) This interview is done on the basis of an interview guide in which the field of inquiry and hypothesis that is prior to the beginning of the interview.
- (ii) This type of interview is possible in those concrete circumstances which have been analysed better hand.

- ⑤ Rate specific phenomena independently :-
- ⑥ Devise a method of Recording Results :-
- ⑦ Become well acquainted with the recording instruments-
- ⑧ Observers should separate the trafs from their interpretation at a later time -
- ⑨ Observations are to be checked and verified, whenever possible, by repetition or by comparison with those of other competent observers.