

Biyani's Think Tank

Concept based notes

Survey Methods in Social Investigation

(BA Part-II)

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Preface

I am glad to present this book, especially designed to serve the needs of the students. The book has been written keeping in mind the general weakness in understanding the fundamental concept of the topic. The book is self-explanatory and adopts the “Teach Yourself” style. It is based on question-answer pattern. The language of book is quite easy and understandable based on scientific approach.

Any further improvement in the contents of the book by making corrections, omission and inclusion is keen to be achieved based on suggestions from the reader for which the author shall be obliged.

I acknowledge special thanks to Mr. Rajeev Biyani, *Chairman* & Dr. Sanjay Biyani, *Director (Acad.)* Biyani Group of Colleges, who is the backbone and main concept provider and also have been constant source of motivation throughout this endeavour. We also extend our thanks to M/Biyani Sikhshan Samiti, Jaipur, who played an active role in co-ordinating the various stages of this endeavour and spearheaded the publishing work.

I look forward to receiving valuable suggestions from professors of various educational institutions, other faculty members and the students for improvement of the quality of the book. The reader may feel free to send in their comments and suggestions to the under mentioned address.

Author

SOCIOLOGY

Scheme	Min. Pass Marks : 72	Max. Marks : 200
Paper-I	3 Hrs. duration	Max. Marks : 100
Paper-II	3 Hrs. duration	Max. Marks : 100

Note : There shall be two papers in all, and each paper shall be of three hours durations and of 100 marks. Each paper shall consist of two parts. The first part consisting two compulsory questions carry 40 marks. There shall be twenty multiple choice objective type questions of one marks each in the first compulsory question. The second compulsory question will comprise ten questions of two marks each. These will be short answer questions and answers should be of not more than twenty words. Marks may be deducted if the word limit is exceeded. This part of the question paper will be given maximum one hour duration and shall relate to all the three sections covering there by the entire course. The second part of the questions paper shall be divided into three sections comprising 6 essay type questions of 20 marks each. Candidates will be required to attempt 3 questions selecting one question from each section. This part of the questions paper shall be of 60 marks.

Paper-I : Survey Methods in Social Investigation

Section-A

1. Social research and social survey: meaning, scientific methods.
2. Data forms and sources.
3. Hypotheses.

Section-B

4. Techniques of data collection : Questionnaire, schedule interview, observation and case study.
5. Sampling.

Section-C

6. Tabulation : Presentation of data, simple and multivariate tables.
7. Averages : Mean, mode and median.

Content

S. No.	Chapter Name
1	Social Research
2	Social Survey
3	Hypothesis
4	Techniques of data collection
5	Sampling
6	Tables and tabulation
7	Averages
8	Key words
9	Solved Question Paper 2010
10.	Unsolved Papers 2011, 2009 - 2007

CHAPTER-1

Social Research

Q. 1 What is Social research?

Ans. Research is an endeavour to arrive at answers to intellectual and practical problems through the application of scientific method to the knowable universe. Re – search i.e. activities undertaken to repeat a search. In other words it refers to critical and exhaustive investigation or experimentation having its aim of revision of accepted conclusion in the light of newly discovered facts. Research is a systematic attempt to push back the bounds of comprehension and seek beyond the horizons of our knowledge some 'truth' or some reality.

D. Slushiness and M. Stephenson proposed a definition in the encyclopedia of social science proposed a definition-

- a) Manipulation of things, concepts or symbols.
- b) For the purpose of generalizing
- c) To extend correct or verify knowledge
- d) Knowledge may be used for construction of a theory or practice of an art.

The systematic approach concurring generalization and the formation of a theory is also research.

To summarize the term research refers to the systematic method consisting of –

- a) Enunciating the problem
- b) Formulation of hypothesis
- c) Analyzing the fact
- (d) Collecting the facts or data
- (e) Researching conclusion in the form of solution

Q. 2 What are the objectives of social research?

Ans. The purpose of research is to discover answer to question through the application of scientific procedure. The aim of social research is to find out the truth which is hidden and which has not been discovered yet. Following are the objective of social research –

- 1) To gain familiarity with a phenomenon or to achieve new insight into it (Studies with this object in view are termed as exploratory or formulative research studies).

- 2) To portray accurately the characteristics of a particular individual, similar or a group (Studies with this objective in view are known as description research studies)
- 3) To determine the frequency with which it occurs or with which it is associated with something else. (Studies with this object in view are known as diagnostic research studies)
- 4) To test a hypothesis of a causal relationship between variables (Such studies are known as hypothesis testing research studies)

Q.3 What are the qualities of researcher?

Ans. Sir Foster specified three main qualities:-

- a) Truthfulness corresponds to the desire for accuracy of observation and precision of statement.
- b) Receptivity to the hints and gestures of nature should be brought in to picture. It demands a systematic immersion in to the subject of concern to be able to catch the slightest hint that might give birth to significant research problem.
- c) Scientific enquiry, which needs a moral quality of courage, which helps a man to face a sudden difficulty as the coverage of steady first endurance.
- d) He needs to be cautious about his statements. According to Karl Pearson "The scientific man has strive at self elimination in his judgment to provide an argument which is as true for each individual mind for as for his own."

Q.4 What are the components of sociological research?

Ans. Main components of a research are:

1. Curiosity:

Science is knowledge of the physical or material world gained through observation and experiment. Research begins with a broad question that needs an answer.

2. Theory (Hypothesis)

Researcher creates an assumption to be proved or disproved with the help of data.

3. Experiment

Researchers design an experiment with steps to test and evaluate the theory (hypothesis) and generate analyzable data. Experiments have controls and a large enough sample group to provide statistically valid results.

4. Observation

Observing and recording the results of the experiment generated raw data to prove or disprove the theory.

5. Analysis

Statistical analysis on the data and organizing it so that it is understandable generates answers to the initial question. Data may show trends that allow for the broadening of the research.

6. Conclusions

Research following the scientific method will either prove or disprove the theory (hypothesis). What happened and why it needs to be explained by the researcher is concluded. Even when a theory (hypothesis) is disproved, valuable data collected in the research may lead to further research. The results are usually published and shared.

Q5. What are the sources of research problem?

Ans. Sources of research problem are:

- 1 Community
- 2 Own teaching experiences
- 3 Classroom lectures
- 4 Class discussions
- 5 Seminars/workshops/paper presentations
- 6 Internet
- 7 Reading assignments
- 8 Textbooks
- 9 Research reports
- 10 Consultation

Q.6 How is sociological research scientific in nature?

Ans. Research being a human effort frequently affects the subject matter and in effect changes the whole situation. The behavior of human being is affected by diverse factors such as environmental, temporal, and biological psychological and socio-cultural; all them affecting it contemporaneously. Hence, it is formidable task for a scientist to discover an order or principle which would apply to all men or the bewilderingly the complex human data. In social sciences, the laboratory is society, so controlled experimentation is impossible. Complexity of social data is not so well founded. One of the characteristic of social phenomenon is the cause and effect relationship is hard to be segregated. In social sciences, it does not make sense to ask which the cause is and which effect is. Social data typically pose certain problem when it comes to those being treated by the highly developed quantitative method of physical science.

Merton advises social scientist do not despair and harbor doubt whether a science of society is really possible, but with present limitation in view “develop social theories” applicable to limited range of data and slowly build their ways up toward more general theories of broader applicability.

Q.7 What is the utility of social research?

- Ans.**
- 1) Helps in guiding social planning. Adequate social planning depends for its success on systematic knowledge about the social resources and liabilities of the people and their culture.
 - 2) Since knowledge is a particular kind of power, social research, by afford firsthand knowledge about the organization and working of society and its institutions.
 - 3) Social research affords a more solid basis for people to hold whatever opinion they do light. Social Research helps in bringing to light the underlying oneness in the midst of bewildering variety or diversity of human societies.
 - 4) Social research provides a secure basis for remedial measures. Social researcher analyzes the problem in the total context; it provides sound guidelines for appropriate measure of welfare or reform.
 - 5) A researcher is charged with the responsibility of ascertaining some order among facts. They have the effect of setting our efforts at social planning and control on a sounder footing. The success of planning for social development depends to a great extent on our intimate knowledge of our own society as also of other societies.
 - 4) The social research, has it work in reference to different spatial temporal contexts each challenging his attack, is constantly faced with the need to improve upon his tools if need to fashion new tolls to match his skills with the task promoted by a situation.

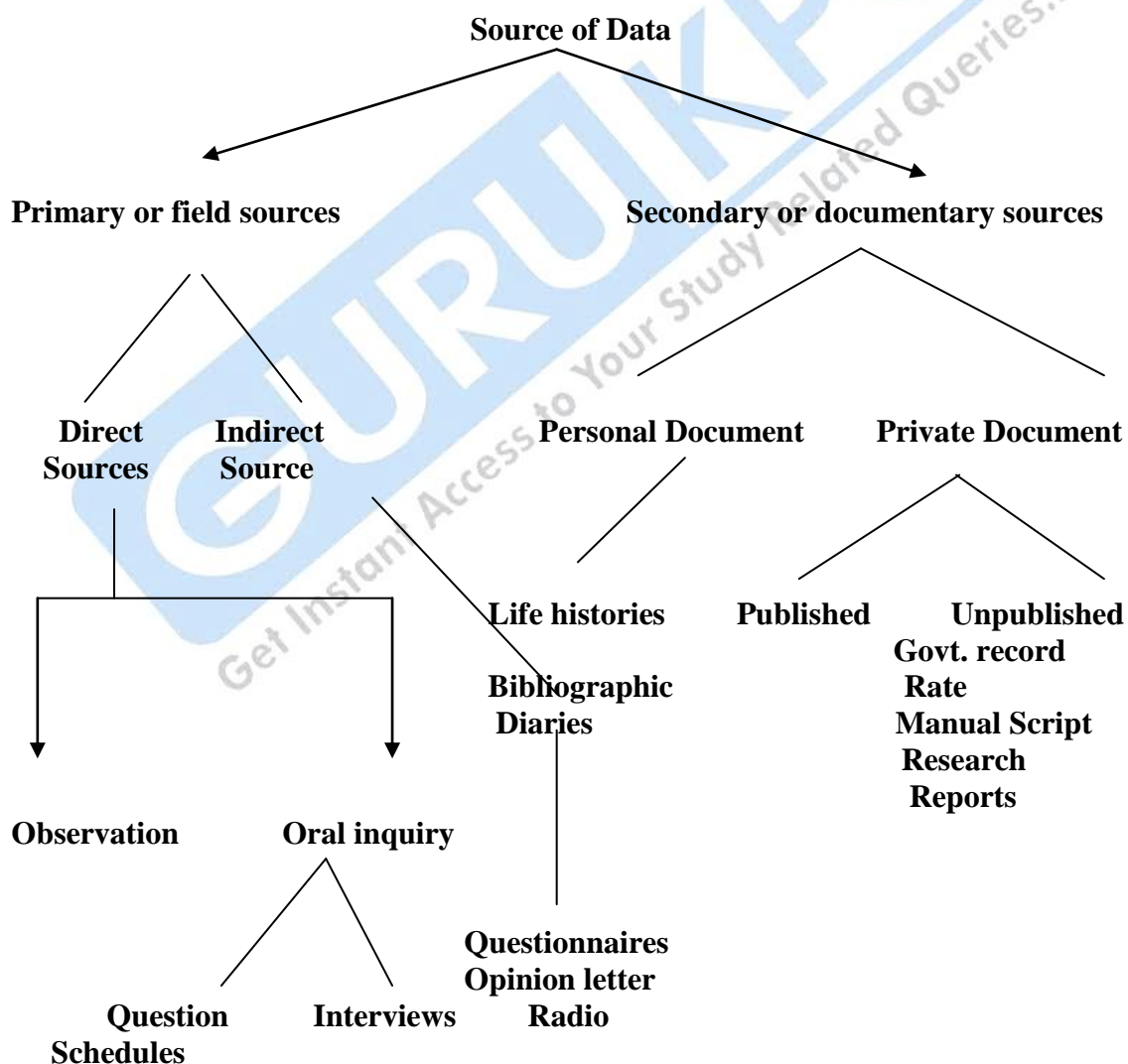
Q.8 What are the characteristics which give any social research the scientific status?

- Ans.** Scientific method referring as it does to a procedure or a mode of investigation by which scientific and Systematic knowledge in acquired is based on certain “article of faith”. Among these are-
- Reliance on empirical evidence
 - Use of relevant concept
 - Commitment to objectivity
 - Ethical neutrality
 - Generality
 - Prediction based on probability
 - Public methodology affording testing of conclusion through replication

Q.9 Discuss in brief forms and sources of data used in social research?

Ans. Main forms of data collection –

	Non verbal	Oral	Hand Written Overhead
Informal setting	Participant observation	Conversation use of information	Letter article
Formal unstructured setting	Systematic observation	Interview unstructured	Questionnaire-open ended
Formal structured Setting	Experimental technique	Interview Structured	Questionnaire structure



Q. 10 What are the types of social research?

Ans. Research method may be classified in to two –

- 1) Qualitative research
 - 2) Quantitative research
- 1) **Qualitative research** - Qualitative, logical or philosophical research of social research is old. Under this method the collected information is in the form of qualitative description or self experience. The inferences drawn in this method are naturally based upon logical or philosophical rules rather than facts.
- 2) **Quantitative research** – is subjected to various kinds of statistical analysis to establish relationship or test of validity of a hypothesis. Increasingly more and more use is made to convert description of social phenomena into numerical terms. Statistical measurement helps to establish relationship between two variables. Statistical methods are based upon analysis of mass data and for valid generalization fairly large number of cases is essential.

Research can also be classified in to two measures categories. They are –

- 1) Pure research
- 2) Applied research

According to Wilkinson & Bhandarkar ‘pure’ scientist would probably argue that knowledge itself is always of practical use in the end. The ‘applied’ scientist however is to see his research in a practical context from the onset. The problems of juvenile delinquency, old people etc. are instances of pure research.

According to Dewey “the method and conclusion of science do not remain within the science.” Even those who convey science as independent and isolated entity cannot deny that it does not remain such as practical fact.

Q11. What are the types of research design?

Ans. The research designs are of the following types:

- **Exploratory research**

Exploratory research is a type of research conducted for a problem that has not been clearly defined. Exploratory research often relies on secondary research such as reviewing available literature and sometimes on qualitative approaches such as informal discussions with consumers, employees, management or competitors, and more formal approaches through in-depth interviews, focus groups, projective methods, case studies or pilot studies. Results of exploratory research can provide significant insight into a given situation.

- **Descriptive research**

Descriptive research is used to obtain information concerning the current status of the phenomena to describe "**what exists**" with respect to variables or conditions in a situation. The methods involved range from the survey which

describes the status quo, the correlation study which investigates the relationship between variables, to developmental studies which seek to determine changes over time. Involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data.

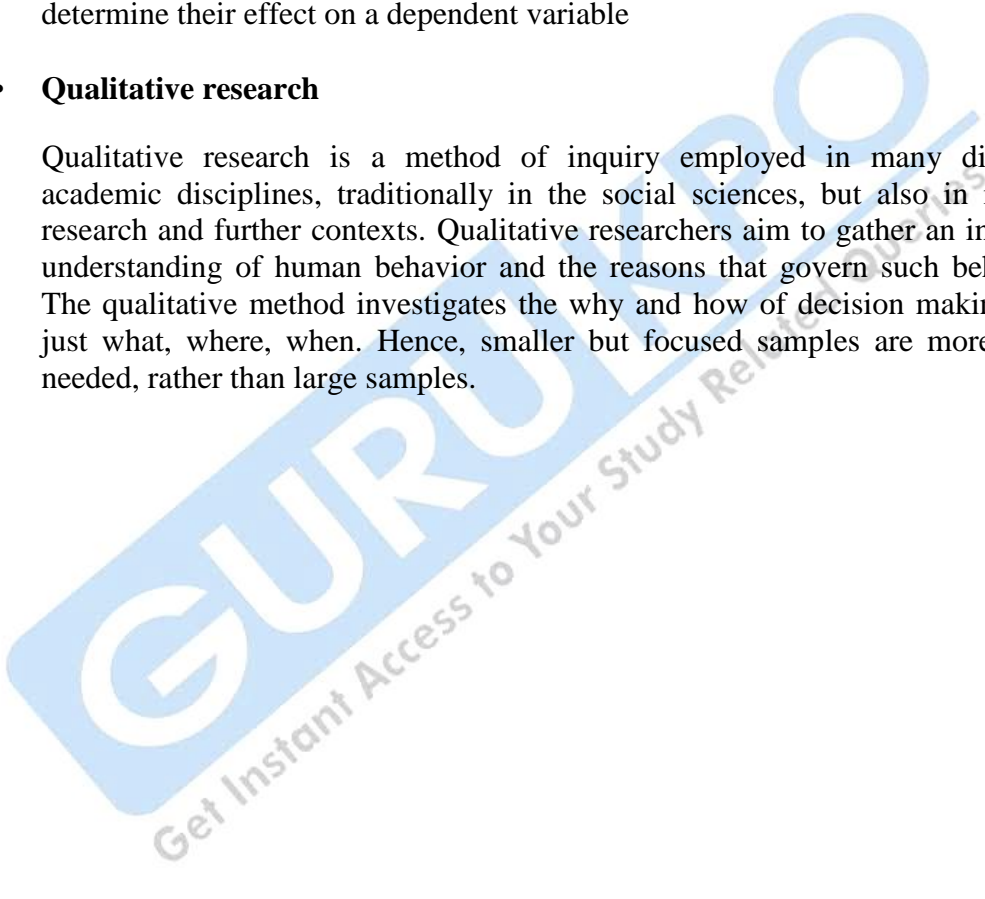
- **Experimental research design**

Experiments are conducted to be able to predict phenomenon. Typically, an experiment is constructed to be able to explain some kind of causation. Experimental research designs are used for the controlled testing of causal processes.

The general procedure is one or more independent variables are manipulated to determine their effect on a dependent variable

- **Qualitative research**

Qualitative research is a method of inquiry employed in many different academic disciplines, traditionally in the social sciences, but also in market research and further contexts. Qualitative researchers aim to gather an in-depth understanding of human behavior and the reasons that govern such behavior. The qualitative method investigates the why and how of decision making, not just what, where, when. Hence, smaller but focused samples are more often needed, rather than large samples.



CHAPTER-2**Social Survey****Q. 1 What is social survey?**

Ans. A social survey in its broadest sense has references to a firsthand investigation, analysis and co-ordination of economic sociological and other related aspect of a selected community with a primary purpose of formulating a programme for diagnosing the condition of the life and work of a community or a group, thus implying some frame in the mind of the surveyor or as to what the conditions ideally ought to be.

According to **C.A. Moser**, “The sociologists should look upon survey as way and supremely useful for exploring the field of collecting data around as well as directly on the subject or study so that problems is brought into focus and point worth studying are suggested.”

According to **Mark Abram**, “social survey is a process of which quantitative facts are collected about the social aspect of a community’s composition and act utility.” Following conclusion can be drawn –

- 1) Social survey is confined to the study of immediate problem of society eg. poverty, unemployment etc.
- 2) Its geographical area is sufficiently limited and its field of study is geographically localized.
- 3) The purpose of survey is to prepare constructive programme of social research or removal of immediate evils.
- 4) The facts are collected in a survey may form the basis of social research.
- 5) Characters take co – operation effort and use of scientific methods deals with the methodology and is equally applicable even to the social used.

Q. 2 What are objects of social survey?

Ans. According to Moser “A survey may be occasioned simply by a need for administrative facts on some aspect of public life or be designed to investigate some cause effect relationship or to throw fresh light on same aspect of sociological theory.”

- 1) **Supply of information on any problem.** According to Moser “the purpose many survey is simply to provide someone with information that could be government department.”
- 2) **Description of a phenomenon** – Survey helps the researcher to come in direct contact with the phenomenon under study and thus provide all details. The survey may be started without any specific hypothesis.

- 3) **Explanation of a phenomenon** – Many enquires are aimed to explain rather than to describe. Their function may be theoretical to test some hypothesis. This is the theoretical importance of survey. Survey may be general or specific.

Q. 3 What is subject matter of social survey?

Ans. Moser has divided the subject matters into four broad classes

- 1) **Demographic characteristics** – Include surveys about organization and working of family and other social institutions. Information regarding such matters such as family or house-hold composition, marital status, fertility, age etc.
- 2) **Social environments** – It covers all the social and economic factors to which people are subject including their occupation and income as well as housing conditions and social amenities.
- 3) **Social activities** – This is also a behavioral data and mainly depends with the actions or behaviour of respondents.
- 4) **Opinion and attitudes** – This group includes data regarding the level of information opinion and attitude of the people towards various social factors and expectation of the people. Knowledge of the level of information may be necessary as the basis of the nature of questions that may safely asked. It may also help to know the general level of knowledge of class of people.

Q.4 How many types of surveys are there?

- Ans.**
- 1) **General or specific survey** -: When a survey is conducted for collecting general information about any population, institution or phenomena with out any popular object or hypothesis is known as general survey. Specific survey is conducted for specific problems or for listing the validity of some theory or hypothesis.
 - 2) **Regular and ad-hoc surveys** - Some surveys are regular in nature and must be repeated after regular intervals. Rural credit survey of Reserve Bank of India credit annually is also of the same type.
Ad hoc surveys are undertaken once for all. They may also be conducted in phases if the area of investigation is large, the whole survey being finished in two or more installments.
 - 3) **Preliminary and final surveys** - : A preliminary surveys is generally known as pilot study and is for runner of the final survey. The purpose of this survey is to get first hand knowledge of the universe to be surveyed. Final survey is made after the pilot study is been completed.
 - 4) **Census and sample survey**: - In census survey every single unit in the universe is to be contacted and information from him is colleted in hand. In case of sample only a small part of is taken as representative of whole and data collected from it are made applicable to the whole universe.

Q.5 What is the process of planning a social survey?

Ans. –

1. **Selection of the problem**: - The first and foremost thing to be decided by the research worker is the selection of research problem. The research should be deeply interested, should be new, manageable limit, and have direct utility.
2. **Preliminary preparations**: - The research must acquaint him with all the material that is available on the matter.
3. **Selection of sample** :- Social phenomena is very vast. It is practically impossible to contact each and every person. More over this problem under study may not concern every body.
4. **Deciding the method of study** :- Prior planning should be made about how to proceed further. Researcher must be well acquainted with method of data collection, sample, universe to make the survey more feasible.
5. **Nature of information to be collected**:- It is very important to know about what type of information is collected whether complex or simple. On that being the type of data collection is decided. If the qualitative information is to be collected then case study should be chosen. If quantitative data is to be collected then questionnaire or schedule should be chosen.
6. **Organization of survey**: - Collection, classification, codification and presentation of data should be made.
7. **Report** :- After the data have been analyzed deductive are drawn. These generalizations are often put in the form of report.
8. **Pretesting or pilot study**: - Even after a theoretical preparation has been made some sort of trial survey is necessary to gain specific knowledge of the subject and get an idea of the various problems likely to be faced in the course of the study.
9. **Cost estimates**: - A prior estimate of cost expenditure is needed to carry forward the survey process.
10. **Time estimate** :- It is important to have prior information about the time consumption in social survey. Time factors are most important as it decides the quality of survey.

CHAPTER-3**Hypothesis****Q. 1 What is hypothesis?**

Ans. Ordinarily, when one talks about hypothesis, one simply means a mere assumption or some supposition to be proved or disapproved. Thus a hypothesis may be defined as a proposition or a set of proposition set forth as an explanation for the occurrence of some specific group of phenomenon either asserted merely as a provisional conjecture to guide some investigation or accepted as highly probable in the light of established facts.

Eg Students who receive counseling will show greater increased creativity than students not receiving counseling. According to Lundberg "The only difference between data gathering without hypothesis and gathering them with one is that in the latter case we deliberately recognize the limitation of our senses and attempt to reduce their fallibility by limiting our field of investigation." Simply stated, a hypothesis helps us see and appreciate the kind of data that must be collected in order to answer the research questions and the way in which they should be organized most efficiently. Cohen and Nagel highlighted the value of hypothesis, "we cannot take a single step forward in any inquiry unless we begin a suggested explanation or solution of difficulty which originated it."

According to Werkneister, "The guess as to the possible answer- are hypothesis which either solve the problem or guide him in further investigation."

Q. 2 What are characteristics of hypothesis?

Ans. –

- 1) Hypothesis should be clear and precise. If the hypothesis is not clear and precise the inferences drawn on its basis cannot be taken as reliable.
- 2) Hypothesis should be capable of being tested.
- 3) Hypothesis should state relationship between variables, if be capable of being tested.
- 4) Hypothesis should be limited in scope and must be specific. A researcher must remember that narrow hypothesis is generally more testable and should develop such hypothesis.
- 5) Hypothesis should be stated as far as possible in most simple terms so that the same is easily understandable by all concerns.
- 6) Hypothesis should be consistent with most known facts.
- 7) Hypothesis should be amenable to testing with in reasonable time.

- 8) Hypothesis must explain the fact that gave rise to the need for explanation. This means that by using the hypothesis plus other known and accepted generalization, one is able to deduce the original problem condition.

Q.3 What are the types and sources of hypothesis?

Ans: Good and Hatt have identified three levels:-

- 1) At lowest level of abstraction are the certain empirical uniformities
- 2) At relatively higher level of abstraction are hypothesis concerned with complex ideas whether logically derived relationships between empirical uniformities obtained. The function of such hypothesis is to create tools and formulate problems for further research in complex areas of investigation.
- 3) Highest level of hypothesis is concerned with the relation obtaining amongst analytic variables

Sources of Hypothesis

- 1) The general culture in which a science develops may form the basis of hypothesis.
- 2) Hypothesis originates in the science itself.
- 3) Analogies are often source of useful hypothesis.
- 4) Hypothesis is also consequences of personal, idiosyncratic experience.

Q.4 What are characteristics of good hypothesis?

Ans.

- 1) A hypothesis should be empirically testable..
- 2) It should be closest to things observable.
- 3) The hypothesis should be conceptually clear
- 4) The hypothesis must be specific
- 5) It should be related to a body of theory or some theoretical orientation.
- 6) Hypothesis should be related to available techniques

Q.5 What are the characteristics of testable hypothesis?

Ans.

- **Hypothesis must be conceptually clear.** The concepts used in the hypothesis should be clearly defined, operationally if possible. Such definitions should be commonly accepted and easily communicable among the research scholars.
- **Hypothesis should have empirical referents.** The variables contained in the hypothesis should be empirical realities. In case there are no empirical realities then it will not be possible to make the observations. Being handicapped by the data collection, it may not be possible to test the hypothesis. Watch for words like ought, should, are considered

- **Hypothesis must be specific.** The hypothesis should not only be specific to a place and situation but also these should be narrowed down with respect to its operation. Let there be a global use of concepts whereby the researcher is using such a broad concept which may be inclusive and may not be able to tell anything. For example somebody may try to propound the relationship between urbanization and family size. Yet urbanization influences in declining the size of families. But urbanization is such a comprehensive variable which hides the operation of so many other factors which emerge as part of the urbanization process. These factors could be the rise in education levels, women's levels of education, women empowerment, decline in patriarchy, accessibility to health services, role of mass media, and could be more. Therefore the global use of the word 'urbanization' may not tell much. Hence it is suggested that the hypothesis should be specific.
- **Hypothesis should be related to available techniques of research.** Hypothesis may have empirical reality; still we are looking for tools and techniques that could be used for the collection of data. If the techniques are not there then the researcher is handicapped. Therefore, either the techniques are already available or the researcher is in a position to develop suitable techniques for the study.
- **Hypothesis should be related to a body of theory.** Hypothesis has to be supported by theoretical argumentation. For this purpose the researcher may develop his/her theoretical framework which could help in the generation of relevant hypothesis. For the development of a framework the researcher shall depend on the existing body of knowledge. In such an effort a connection between the study in hand and the existing body of knowledge can be established. That is how the study could benefit from the existing knowledge and later on through testing the hypothesis could contribute to the reservoir of knowledge.

Q. 6 What is null and alternate hypothesis?

Ans. Whenever we want to treat the statistical analysis to any problem, we proceed with taking into consideration null hypothesis and alternate hypothesis.

Null hypothesis asserts that there is no difference between two populations in respect of some property and that the difference formed between the samples drawn from these populations is only accidental and unimportant.

H_0 (Null hypothesis) may be stated as: - The females and males do not differ in respect of the frequency of visiting cinema.

The alternate hypothesis is the statements of acceptance condition for each of the alternative courses of action or solution.

H_1 (Alternative hypothesis) may be stated as the females visit cinema of lesser than the males.

Q.7 Write two multivariable hypotheses?

- Ans.** 1. H_1 The average examination score produced by teaching method No. 1 is greater than the average that scores produced by teaching method No. 2.
2. H_2 The average examination score produced by teaching method No. 2 is greater than that of teaching method No. 1

Multiple Choice Questions: Hypothesis**Level A**

1. Hypothesis is not a/an
 - a. Tentative statement
 - b. Relational statement
 - c. Explanatory statement
 - d. Verified statement
2. Hypothesis is always
 - a. Always accepted
 - b. Always rejected
 - c. Either accepted or rejected
 - d. None of the above
3. Formulation of hypothesis required operationalization of
 - a. Concepts
 - b. Variables
 - c. Attitudes
 - d. All of the above
4. "Level of social disorganization, a magnitude of alienation and the rate of suicide variable are correlated." Is a
 - a. Non-directional bivariate hypothesis
 - b. Directional bi-variate hypothesis
 - c. Directional tri-variate hypothesis
 - d. Non-directional trivariate hypothesis
5. when a hypothesis is tested or verified and found to be true it becomes:
 - a. law
 - b. fact
 - c. theory
 - d. all of the above
6. when a theory works satisfactorily in real life situation and is accepted, it becomes
 - a. law

- b. fact
 - c. theory
 - d. all of the above
7. "There is no significant difference between the performance of woman and man as regards to teaching of Arts courses." Is a
- a. Rejected hypothesis
 - b. Accepted hypothesis
 - c. Alternate hypothesis
 - d. Testable hypothesis
8. When the statement is negatively stated, it is called as
- a. Alternate hypothesis(H_1)
 - b. Formulated hypothesis
 - c. Null hypothesis
 - d. None of the above
9. Hypothesis is a/an
- a. Assumption
 - b. Suspicion
 - c. Assertion
 - d. All of the above
10. Validity of hypothesis is
- a. Known
 - b. Unknown
 - c. Not certain
 - d. Unpredictable
11. "The average age of male students in the class is higher than that of the female students." Is a
- a. Generalization
 - b. Tentative statement
 - c. Hypothesis
 - d. All of the above
12. Level of significance chosen for accepting or rejecting hypothesis in social science is
- a. 1 percent
 - b. 2 percent
 - c. 5 percent
 - d. 10 percent
13. "The female commit suicide often than males" is a/an
- a. Alternate hypothesis
 - b. Null hypothesis

14. "The females and males do not differ in respect of the rate of suicide " is a/an
 - a. Alternate hypothesis
 - b. Null hypothesis
15. The verification process have out come
 - a. Right
 - b. Partially right
 - c. Wrong
 - d. None of the above
16. The hypothesis should be
 - a. Unidirectional
 - b. Bidirectional
 - c. Multidirectional
 - d. All of the above
17. Hypothesis should be
 - a. Empirically verifiable
 - b. Strong logical base for prediction
 - c. Provide clues for seeking solutions
 - d. All of the above

Level B

1. A hypothesis in which researcher stipulated that there will be no difference but does not specify its magnitude is called
 - a. Null hypothesis
 - b. Hypothesis of difference
 - c. Hypothesis of point prevalence
 - d. Hypothesis of association
2. Hypothesis which speculates a relationship between the impact of different combination of dependent variable or phenomenon then it is known as
 - a. Hypothesis of association
 - b. Null hypothesis
 - c. Hypothesis of point prevalence
 - d. Hypothesis of difference
3. In correct conclusion about the validity of hypothesis may be drawn if
 - a. The study design selected is faulty
 - b. The analysis is wrong
 - c. Method of data collection is inaccurate
 - d. All of the above
4. "A greater population of females than males is smokes in the study of population." Is a

- a. Statement
 - b. Hypothesis
 - c. Concept
 - d. All of the above
5. "When you reject a null hypothesis when it is true and when you accept a null hypothesis when it is false" is a
- a. Testable hypothesis
 - b. Erroneous hypothesis
 - c. Alternate hypothesis
 - d. All of the above

Answers
Level A

1. c	2. c	3. a	4. c
5. c	6. a	7. d	8. c
9. d	10. b	11. d	12. c
13. a	14. b	15. d	16. a
17. c			

Level B

1. b	2. a	3. d	4. b
5. b			

CHAPTER-4

Technique of data Collection Methods

Q.1 What do you mean by Collection of Data? Differentiate between Primary and Secondary Data.

Ans.: Collection of data is the basic activity of statistical science. It means collection of facts and figures relating to particular phenomenon under the study of any problem whether it is in business economics, social or natural sciences.

Such material can be obtained directly from the individual units, called primary sources or from the material published earlier elsewhere known as the secondary sources.

Difference between Primary & Secondary Data

	Primary Data	Secondary Data
Basic nature	Primary data are original and are collected for the first time.	Data which are collected earlier by someone else, and which are now in published or unpublished state.
Collecting Agency	These data are collected by the investigator himself	Secondary data were collected earlier by some other person.
Post collection alterations	These data do not need alteration as they are according to the requirement of the investigation	These have to be analyzed and necessary changes have to be made to make them useful as per the requirements of investigation.
Time & Money	More time, energy and money has to be spent in collection of these data.	Comparatively less time and money is to be spent.

Q. 2 What are the techniques of data collections?

Ans. Data collection methods are used for collection of data for social research. While deciding about the method of data collection to be used for the study the researcher should be well acquainted with types of data: Primary and Secondary. The primary data are those which are collected a fresh and for the first time and thus happens to be original in character. The secondary data are those sort of data that researcher would be using for the study and accordingly he will have to select one or the other method of data collection.

Important techniques of primary data collection: -

- 1) Observation method
- 2) Interview method
- 3) Questionnaire
- 4) Schedule
- 5) Interview
- 6) Case study
- (7) Content analysis

Q.3. Differentiate between primary and secondary data.

Ans. Primary and Secondary Data:

Primary data are collected by the investigator through field survey. Such data are in raw form **and** must be refined before use. **On** the other hand, secondary data are extracted from the existing published or unpublished sources.

Q.4. What do you mean by sampling?

Ans. Sampling is that part of statistical practice concerned with the selection of a subset of individual observations within a population of individuals intended to yield some knowledge about the population of concern, especially for the purposes of making predictions based on statistical inference.

Q.5. What are the sources of secondary data collection?

Ans. Secondary data are the other people's statistics, where other people includes governments at all levels, international bodies or institutions like IMF, IBRD, etc., or other countries, private and government research organisations, Reserve Bank of India and other banks, research scholars of repute, etc. Broadly speaking we can divide the sources of secondary data into two categories: published sources and unpublished SOW.

A) Published Sources

- 1) Official publications of the government at all levels - Central, State, Union
- 2) Official publications of foreign countries.
- 3) Official publications of international bodies like IMF, UNESCO, WHO, etc.
- 4) Newspapers and Journals of repute, both local and international.

- 5) Official publications of RBI, and other Banks, LIC, Trade Unions, Stock Exchange, Chambers of Commerce, etc.
- 6) Reports submitted by reputed economists, research scholars, universities, commissions of inquiry, if made public. Some main sources of published data in India are:

Central Statistical Organization (C.S.O.): It publishes data on national income, savings, capital formation, etc. in a publication called National Accounts Statistics.

National Sample Survey Organization (N.S.S.O.): Under Ministry of Statistics and Programme Implementation, this organization provides us **data** on all aspects of national economy, such as agriculture, industry, labor and Consumption expenditure.

Reserve Bank of India Publications (R.B.I.): It publishes financial statistics. Its publications are Report on Currency and Finance, Reserve Bank of India Bulletin, Statistical Tables Relating to Banks in India, etc.

B) Un-published Sources

- 1) Unpublished findings of certain inquiry committees.
- 2) Research workers' findings.
- 3) Unpublished material found with Trade Associations, Labor Organizations and Chambers of Commerce.

Q. 6 Give the meaning of questionnaire and characteristics of questionnaire?

Ans. A questionnaire consists of a number of questions printed in a definite order on a form.

John Calting called it a written – verbal stimulus and written verbal response. Questionnaire is a device for collecting data from large, diverse and widely scattered group of people. It is used in gathering objective, quantitative data as well as in securing information of a qualitative nature. In questionnaire, it is only research tool employed, though it is useful in conjunction with other methods of investigation.

Questionnaire is a document containing questions related to the specific requirement of a statistical investigation for collection of information which is filled by the informants personally.

Requirements of a good **questionnaire** :-

- Questions should be simple, clear and short.
- Simple alternative or multiple choice questions.
- Unambiguous and precise.

- Questions should be in sequence.
- Directly relative questions.
- Test of accuracy.
- No restricted questions affecting personal whims.
- Assurance of secrecy to the informants.
- Probability of a perfect answer.

Characteristics of questionnaire:-

- 1) A questionnaire is a list of question which are typed and mailed to respondents or handed over to them personally.
- 2) The questionnaire is sent to respondents which are filled by respondents on their own.
- 3) The questionnaires are sent only to literate respondents.
- 4) The questionnaire is sent to respondents with the objective of collecting information related to different topic.
- 5) It affords great facilities in collecting data from large, diverse and widely scattered group.
- 6) There is low cost even when the universe is large and is widely spread geographically.
- 7) Respondents have adequate time to give out answer.
- 8) Respondents, who are not easily approachable, can also be reached conveniently.
- 9) Large samples can be made use and thus can be made more dependable and reliable.
- 10) Large number of units can be covered by making small sample even in a pilot survey and then can be updated and revised in the survey.
- 11) A questionnaire should be developed in an interactive style.

Q.7 What are advantages of questionnaire?

Ans.

- 1) Questionnaire contains specific, clear cut direction; the persons charged with the collection of data need expert themselves on offering additional explanation or instruction.
- 2) Since the questionnaire approach makes it possible to cover, at the same time, a large number of people spread over a large territory, it is more economical in terms of money, in terms of money, time and energy.
- 3) It is impersonal technique.
- 4) It ensures anonymity. The respondent has a great confidence that they will not be identified as holding a particular view or opinion.
- 5) It is free from the bias of the interviewer.
- 6) Respondents have adequate have time to go through questions and answer at his ease.

- 7) Large samples can be made use of and thus the result can be made more dependable and reliable.
- 8) These are low cost even when the universe is large and widely spread geographically.

Q. 9 – What are demerits of questionnaires?

Ans. –

- 1) Questionnaire can be administered only on subject with considerable amount of education.
- 2) Low rate of return of the duly filled in questionnaire, bias due to no response is often determined.
- 3) It is difficult to know whether writing respondents are truly representative.
- 4) The proportion of return is usually low due to their ignorance and negligence.
- 5) If the respondents misinterpret the question, then there are chances of ambiguous answers which will not be valid for social research.
- 6) It is not appropriate for deep and long studies.
- 7) It cannot be mailed to illiterates.
- 8) Incomplete entries lead to problems to researcher.
- 9) If the handwriting of respondent is not clear then researcher is not able to put up the matter in a right way.
- 10) This method can be considered as the slowest of all the methods.
- 11) The questionnaire can be considered more useful if they are filled up with good sense of responsibility also knowledge or awareness about the subject or question is very much needed if the question content is related to certain social issues.
- 12) The response to a question may be influenced by the response to other questions.
- 13) It is possible to consult others.
- 14) A response cannot be supplemented with other information.

Q. 10 – What are the types of questionnaire?

Ans. – Structured / standardized questionnaires.

Unstructured / non – structured questionnaires.

Structured questionnaire are those in which there are definite, concrete and preordained questions with additional questions limited to those necessary to clarify inadequate answer or to elicit more detailed responses.

In unstructured questionnaire the interviewer is free to arrange the forms and timings of the enquiry. The questions here are open ended and gather information not only to issues but also suggestions to any structure. The type of questions are more flexible to consider kindly angle of information.

Q. 11 – What are forms of questions which can be considered in questionnaire?

Ans. – 1) Open – ended question: - Here the respondent is free to answer as per his convenience either in detailed format or in a summary. The respondent is not given with pre-set option of answer for the question.

2) Closed ended questions: - The possible answer all set in the questionnaire and the respondent ticks the category that best describe the respondent's answer.

SCHEDULE**Q. 1 – What do you understand by schedule?**

Ans. A schedule is like a questionnaire, is a list of questions, which assists in the collection of data or requisite first hand information. Under this method, the researcher or investigator himself presents the questionnaire to the respondents. According to Good and Hatt, "Schedule is a name usually applied to a set of questions which are asked and filled in by an interviewer in a face to face interview with another person."

A schedule is an important tool for study of different problems, and is used frequently by educationalists, social scientists or other behaviorists.

According to Kerlinger "A schedule of information includes factual information, opinion and attitude and reason for behavior, opinion and attitude."

Q. 2 – What is the difference between questionnaire and schedule?

Ans. –

- 1) The questionnaire is generally sent through mail to informants to be answered as specified in a covering letter. Schedule is generally filled out by the research worker or the enumerator, who can interpret questions when necessary.
- 2) To collect data through questionnaire is relatively cheap and economical since we have to spend money only in preparing the questionnaire and in mailing the same to respondents. To collect data through schedule is relatively more expensive since considerable amount of money has to be spent in appointing enumerators and in imparting training to them.
- 3) Non – response is usually high in case of questionnaire as many people do not respond and many return the questionnaire without answering all questions. But it is not so in case of schedule. The researcher can make sure that the schedule is duly filled and handed over to the researcher.
- 4) In case of questionnaire, it is not always clear as to who replies, but in case of schedule the information is collected well in time as they are filled in by the enumerator.
- 5) Questionnaire method can be used only when respondents are literate and cooperative, but in case of schedule the information can be gathered even when the respondents happen to be illiterate. Wider and more representative distribution of sample is possible under the questionnaire method, but in

respect of schedule there usually remain the difficulty in sending enumerators over a relatively wider areas.

- 6) The success of questionnaire method lies more on the quality of the questionnaire itself, but in case of schedule much depends upon the honesty and competence of enumerator.
- 7) In order to attract the attention of respondents, the physical appearance of questionnaire must be quite attractive, but this may not be in case of schedule as they are to be filled in by enumerator and not by respondents.
Along with schedule, observation method can also be used but such a thing is not possible while collecting data through questionnaire.

Q. 3 – What are types of schedules?

Ans. –

- 1) **Observation schedules** – It contains same specific aspects on which the observer has to concentrate and which he has to collect information.
- 2) **Rating schedules** – The opinion, views and attitudes of the people are ranked by giving different knowledge.
- 3) **Document schedules** – This schedule is used to record data collected from case histories, official records and document, biographies, books etc.
- 4) **Institution survey schedules** – This schedule collects the information related to the institution.
- 5) **Interview schedules** – This is used during an interview to give it a controlled and structured form.

Q. 4 – What is observation technique of data collection?

Ans. – It is objective phenomenon through which we notice something with complete interest. It is not use “looking around or looking at something” but observing. John Dollard states “the primary research instrument would seem to be observing human intelligence trying to make sense out of human experiences.” Observation becomes a scientific techniques when it -

- 1 – Serves a formulated research purpose
- 2 – Is planned systematically.
- 3- Is recorded systematically.
- 4- Is subjected to checks and controls on validity and reliability.

Karl weick – “the selection, recording and encoding of that set of behaviour and setting concerning origination which is consistent with empirical”.

Wolf has defined **observation** – By observation be meant the act of apprehending things and events, their attribute and their concerti relationships, also the direct awareness of our method experiences.

Q. 5 – What are types of observation?

Ans. – Good and Hatt –

Simple – Uncontrolled,
Participant,
Non – participant
Controlled observation – Systematic

P.Y. Young – Non – controlled- Participant,
Non – participant
Controlled

- 1) **Unstructured observation** – The conditions under which the observation is made on the types of material noted and recorded and are left to the observer and to factor which may happen to influence him.
 - i. **Participant observation** – In direct observation, the external observer may become a stimulus to the event. It is based on the theory that an interpretation of an event can only be approximately correct, when it is a composite of two points of view, the outside and inside.
 - ii. **Non – participant observation** – It is observing without hiding one's identity. Observation may be of non-participant type as and when observing and recording is done in natural setting or in an experimental situation.

Q. 6 – What are interview method and type of interview methods?

Ans. – It involves a person designated as the interviewer asking questions (mostly) in a face to face contact to the other person or persons, designated as the interviewee who give answer to those question. The interview method of collecting data involves presentation of oral – verbal stimuli and reply in terms of oral – verbal responses.

- 1) **Personal interviews** – Personal interview method require a person known as the interviewer asking the question generally in a face to face contact to other person or persons.
 - a) **Structured interview** – Involves the use of set of predetermined question and of highly standardized techniques of recording.
 - b) Unstructured interviews are characterized by flexibility of approach to questioning.
 - c) **Focused interview** is meant to focus attention on the given experience of Respondent and its effects.
 - d) **Clinical interviews** – is concerned with broad underlying feelings or motivation or with course of individual's life experience.

- e) **Non directive interview** – is simply to encourage the respondent to talk about the given topic with minimum of direct questions.
- f) **Telephone interview** – this method of collecting information consists of contacting respondents on telephone itself.

Q. 7 – What do you understand by case study method?

Ans. –The English philosopher, Hebert Spencer, was among the first to use case material in his comparative study of different cultures. Under this method the case- history documents, poetry, folk songs, picture can be collected related to that issue.

Following are the criteria for evaluating case study method: –

- 1) The subject must be viewed as a specimen in a cultural series.
- 2) The organic matter of action must be socially relevant.
- 3) The strategic role of the family group in transmitting the culture must be recognized.
- 4) The social institution must be carefully and continuously specified.

Multiple Choice Questions: Data collection Techniques

Level A

1. Observation, interview, questionnaire are _____ method of data collection
 - a. Primary sources
 - b. Secondary sources
 - c. both a and b
 - d. none of the above
2. _____ is a type of observation technique when a researcher is not involved in activities of the group but remains passive observer:
 - a. Direct observation
 - b. Indirect observation
 - c. Participant observation
 - d. Non-participant observation
3. Follow-up letter is used in
 - a. Case study
 - b. Interview
 - c. Schedule
 - d. Questionnaire
4. Panel interview is one in which researcher studies :
 - a. One selected group at one point of time
 - b. Different groups over different times
 - c. Same groups or respondents over different times
5. Closed questions are framed in

- a. Questionnaire
 - b. Schedule
 - c. Both a and b
6. The rate of response is high in
- a. Questionnaire
 - b. Schedule
 - c. Both a and b
7. The most appropriate technique of collecting information illiterate population is
- a. Questionnaire
 - b. Schedule
 - c. Interview
 - d. Observation
8. Closed question is a part of
- a. Questionnaire
 - b. Schedule
 - c. Interview
 - d. All of the above
9. The technique of data collection more effective for sensitive issue is:
- a. Questionnaire
 - b. Interview
 - c. Interview schedule
 - d. Observation
10. Observation can be made under:
- a. Natural condition
 - b. Controlled condition
 - c. Both a and b
11. In _____ method, the researcher has almost complete freedom to provide content and structure
- a. Unstructured interview
 - b. Structured interview
 - c. Conditional interview
 - d. Unconditional interview
12. In in-depth interview the researcher is involved with
- a. Repeated face-to-face interaction
 - b. To understand perspective of interviewee
 - c. Both a and b
 - d. None of the above
13. If you are to find the impact of child sexual abuse on people, the method of interview technique used can be
- a. In-depth interview

- b. Focused group interview
 - c. Narratives
 - d. Oral histories
14. _____ interview technique involves active and passive listening of event, incidence, case study
- a. Oral history
 - b. In-depth interview
 - c. Narratives
 - d. Focus group interview
15. _____ is/are unstructured interview technique
- a. In-depth interview
 - b. Focus group interview
 - c. Narratives and oral histories
 - d. All of the above
16. _____ is a written list of questions, the answers to which are recorded by respondents
- a. Schedule
 - b. Questionnaire
 - c. Interview schedule
17. If the respondent is reluctant to discuss with an investigator about the topic of study then the method of data collection chosen should be:
- a. Questionnaire
 - b. Schedule
 - c. Interview schedule
 - d. None of the above
18. If the respondents are scattered over wide geographical area then the method of data collection chosen should be:
- a. Schedule
 - b. Questionnaire
 - c. Both a and b
 - d. None of the above
19. If the study population is illiterate very young or old, or handicap then the technique of data collection used is
- a. Questionnaire
 - b. Schedule

Level B

1. When a careful observation of a unit is observed and also standardized then the observation technique is known as
- a. Structured observation
 - b. Unstructured observation

- c. Controlled observation
 - d. Uncontrolled observation
2. When the observation is done in a natural setting, then it is known as
- a. Structured observation
 - b. Unstructured observation
 - c. Controlled observation
 - d. Uncontrolled observation
3. When an observer observes as a detached emissary without any attempt on his part to experience through participation what others feel, the observation type is known as:
- a. Structured observation
 - b. Unstructured observation
 - c. Telephonic interview
 - d. Focused interview
4. In _____, the interviewer's function is simply to encourage the respondent to talk about the given topic with a bare minimum of direct questioning
- a. Focused interview
 - b. Clinical interview
 - c. Non-directive interview
 - d. Telephonic interview
5. _____ is concerned with broad underlying feelings or motivation or with the course of individual's life experience
- a. Focused interview
 - b. Clinical interview
 - c. Non-directive interview
 - d. None of the above
6. _____ are usually postal sized cards which are used by dealers of consumer durables to collect information regarding their products:
- a. Warranty cards
 - b. Store audit
 - c. Pantry audit
 - d. Consumer panels
7. _____ are shown to respondents who asked to describe what they think the pictures represent
- a. Rorcharch test
 - b. Thematic appreciation test
 - c. Esenzqing test
 - d. Holtzman Ink blot test
8. _____ is an intensive investigation of a particular unit under consideration
- a. Interview
 - b. Observation
 - c. Case-study
 - d. Interview schedule

9. _____ questions are designed to permit a free response from the subject rather than one limited to certain stated alternatives
- Structured questions
 - Standardized questions
 - Open-ended questions
 - Close-ended questions
10. _____ sources provide data gathered at first hand
- Primary
 - Secondary
 - Tertiary
 - All of the above

Answers**Level A**

18. a	19. d	20. d	21. b
22. c	23. a	24. b	25. d
26.	27. c	28. a	29. c
30. c	31. a	32. d	33. c
34. a	35. b	36. a	37. a

Level B

1. d	2. c	3. a	4. c
5. b	6. a	7. b	8. c
9. d	10. a		

CHAPTER-5**Sampling**

Q. 1 What is sampling?

Ans Sampling may be defined as the selection of some part of an aggregate or totality on the basis of which a judgment or inference about the aggregate or totality is made.

Sampling is the method of obtaining information from a portion of the larger group of population. Population represents the total set of things under consideration about which some information is desired. It is also known as universe for the investigation. The sample is the sub-set of the population selected for investigation by some method.

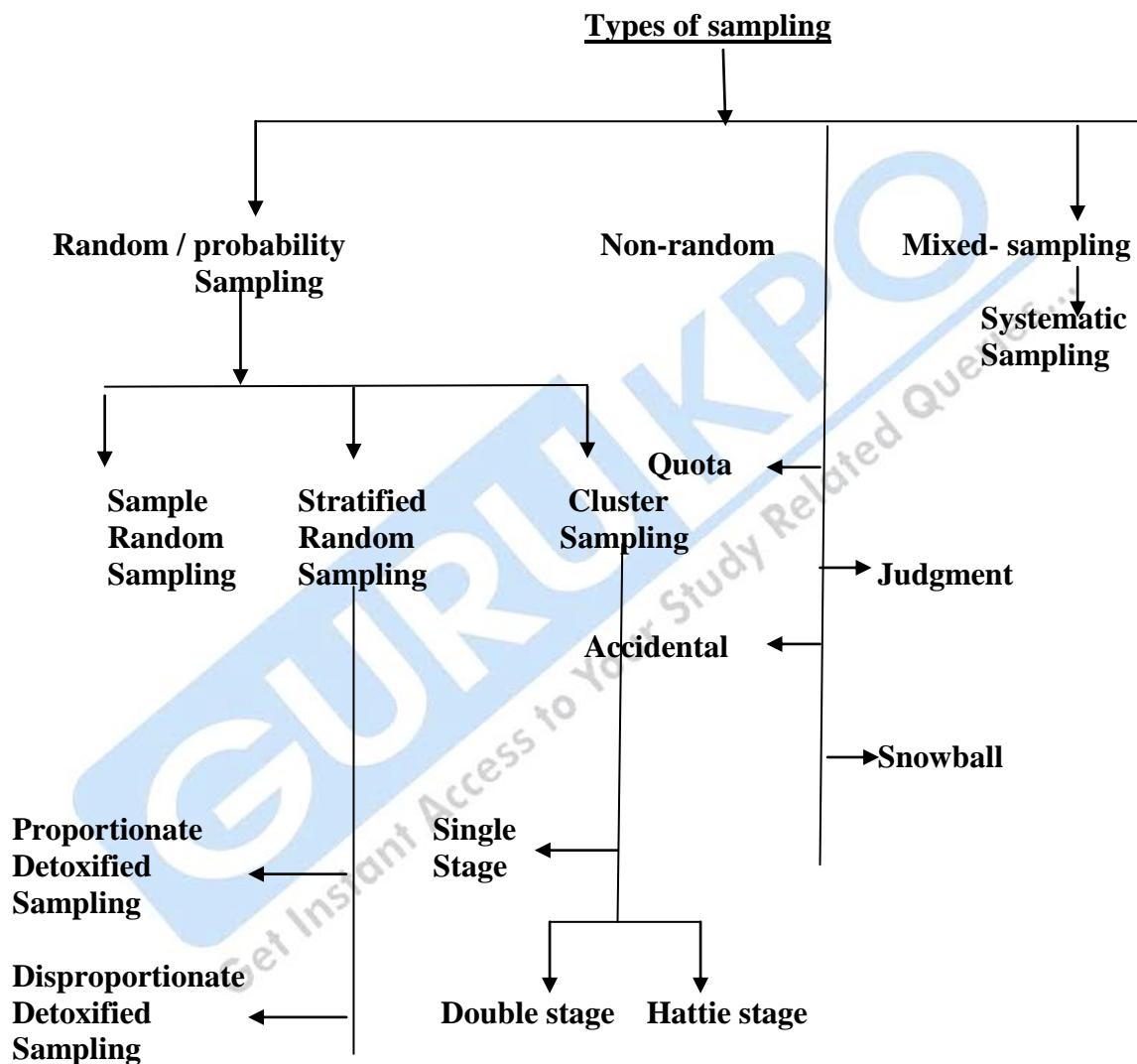
Sampling, is the process of selecting a few (sample) from bigger group to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation or outcome regarding the bigger group.

Sampling terminology - The class, families living the city or electorates from which you select a few students, families, electors to question in order to find answers to your research question are collected the population or study population.

- The small group of students, families or electors from whom you collect the required information to estimate the average age of the class.
- The number of students, families or electors from whom you obtain the required information in called sample size.
- The way you select students, families or electors is called the sampling design.
- Each student, family or elector that becomes the basis for selecting your sample is called the sampling unit.
- A list identifying each student, family or elector in the study population is called sampling frame

Q. 2 – Discusses the type of sampling

Ans. - Types of sampling_Random / probability sampling design – For a sampling design it is called a random or probability sample, it is imperative that each element in the population has an equal and independent chance of selection of the sample.

**Q. 3 – What are the principles of sampling?**

Ans. – The theory is based on two principles:–

- a) Principle of statistical regularity.
- b) Principle of inertia of large number
- a) The principle of statistical regularity is based on the statistical theory of probability. King writes “The law of statistical regularity lays down that

large number of items chosen at random from large group are almost sure on the average to possess the characteristics of the large group.” The term random means that each and every unit should have an equal chance of being included in the sample.

- b) This principle is of great importance in sampling theory. It states that other being equal, the more accurate the results are likely to be large numbers tend to be more stable than the small ones. When the numbers are large, the variations in the different units tend to balance each other, with the result that variation in the aggregate is small.

Q. 4 – What are the sources of sampling bias?

Ans. – According to Werner Z Hirsch there are two of sources of bias –

- 1) Unrepresentative respondents
- 2) Prejudices against the survey oppressor
- 3) Questionnaire bias
- 4) Interview bias
- 5) Changing disposition of respondents
- 6) Unrepresentative survey time
- 7) Handling of late report
- 8) Non response
- 9) In appropriate statistical method
- 10) Investigator prediction and partiality

Accident sampling – By using this method, the investigator simply reach out and pick up the cases that are early accessible to him and select a pre – designated sample size.

Q. 5 – What is random sampling?

Ans. – C.H. Moser holds the opinion that “A sample is said to be random when each unit a drawn has a probability identical to the probability of all the other units which might have been drawn in its place.

In short a random sample is a replica of the universe. Following methods can be adapted to drawn random sample.

- 1) By rotating the drawn
- 2) Lottery method
- 3) By systematic method
- 4) Random numbers
 - a) Tippet’s random numbers
 - b) H.G. Kendall & Babington – Smith random sampling
 - c) Rand corporation random sample
 - d) Scandecore

Q. 6 – What is stratified random sampling?

Ans. – The heterogeneous population is first divided with homogenous group also know as strata according to criteria such as educational level, age-group, sex & religion. It is a method to increase representativeness and contributes to more

efficiency. The number of unit selected from each stratum is proportional to the numbers of unit is that stratum in the population. Types of stratified random sampling are:

- 1) Proportional stratified sampling
- 2) Disproportional stratified sampling
- 3) Stratified weighted sampling

Q. 7 – What are the method of non – probability sampling?

Ans. – a) Purposive or Judgment sample – Here with the knowledge of good judgment and a appropriate strategies, one can handpick the case to be included in the sample which develop satisfactory in relation to ones research need.

b) Convenience sampling – Here the chunk population in selected. This method can be used when the universe in not clearly defined.

c) Quota sampling -Which this method an investigation gets a definite quota definite groups of the universe

d) Accident Sampling : By using the method, the investigator simply reach out and picked up the cases that are easily accessible to him and select a pre-designated sample size.

Q8 . What are the various sampling methods?

Ans. Sampling methods are as follows:

Probability and non probability sampling A **probability sampling** scheme is one in which every unit in the population has a chance (greater than zero) of being selected in the sample, and this probability can be accurately determined. The combination of these traits makes it possible to produce unbiased estimates of population totals, by weighting sampled units according to their probability of selection.

Non probability sampling is any sampling method where some elements of the population have *no* definite chance of selection, or where the probability of selection can't be accurately determined. Probability sampling may be of the following types:

Simple random sampling

In a simple random sample ('SRS') of a given size, all such subsets of the frame are given an equal probability. Each element of the frame thus has an equal probability of selection: the frame is not subdivided or partitioned. This minimizes bias and simplifies analysis of results.

Systematic sampling

Systematic sampling relies on arranging the target population according to some ordering scheme and then selecting elements at regular intervals through that ordered list. Systematic sampling involves a random start and then proceeds with the selection of every k th element from then onwards. In this case, $k = (\text{population size} / \text{sample size})$. It is important that the starting point is not automatically the first

in the list, but is instead randomly chosen from within the first to the k th element in the list. A simple example would be to select every 10th name from the telephone directory (an 'every 10th' sample, also referred to as 'sampling with a skip of 10').

Stratified sampling

Where the population embraces a number of distinct categories, the frame can be organized by these categories into separate "strata." Each stratum is then sampled as an independent sub-population, out of which individual elements can be randomly selected. Dividing the population into distinct, independent strata can enable researchers to draw inferences about specific subgroups that may be lost in a more generalized random sample.

Cluster sampling

It is an example of 'two-stage sampling' or 'multistage sampling': in the first stage a sample of areas is chosen; in the second stage a sample of respondents *within* those areas is selected.

Multistage sampling Multistage sampling is a complex form of cluster sampling in which two or more levels of units are embedded one in the other. The first stage consists of constructing the clusters that will be used to sample from. In the second stage, a sample of primary units is randomly selected from each cluster (rather than using all units contained in all selected clusters). In following stages, in each of those selected clusters, additional samples of units are selected, and so on. All ultimate units (individuals, for instance) selected at the last step of this procedure are then surveyed.

This technique, thus, is essentially the process of taking random samples of preceding random samples. It is not as effective as true random sampling, but it probably solves more of the problems inherent to random sampling. Moreover, It is an effective strategy because it banks on multiple randomizations. As such, it is extremely useful.

Multistage sampling is used frequently when a complete list of all members of the population does not exist and is inappropriate. Moreover, by avoiding the use of all sample units in all selected clusters, multistage sampling avoids the large, and perhaps unnecessary, costs associated traditional cluster sampling.

Non Probability sampling:

Quota sampling, in **quota sampling** the population is first segmented into mutually exclusive sub-groups, just as in stratified sampling. Then judgment is used to select the subjects or units from each segment based on a specified proportion. It is this second step which makes the technique one of non-probability sampling. In quota sampling the selection of the sample is non-random. For example interviewers might be tempted to interview those who look most helpful. The problem is that these samples may be biased because not everyone gets a chance of selection. This random element is its greatest weakness and quota versus probability has been a matter of controversy for many years.

Convenience sampling (sometimes known as **grab** or **opportunity sampling**) is a type of non probability sampling which involves the sample being drawn from that part of the population which is close to hand. That is, a sample population selected because it is readily available and convenient. It may be through meeting the person or including a person in the sample when one meets them or chosen by finding them through technological means such as the internet or through phone. The researcher using such a sample cannot scientifically make generalizations about the total population from this sample because it would not be representative enough. For example, if the interviewer was to conduct such a survey at a shopping center early in the morning on a given day, the people that he/she could interview would be limited to those given there at that given time, which would not represent the views of other members of society in such an area, if the survey was to be conducted at different times of day and several times per week. This type of sampling is most useful for pilot testing.

Multiple Choice Questions: Sampling

Level A

1. _____ method consist of the selection for study, a portion of the universe
 - a. Data collection
 - b. Sampling
 - c. Tabulation
 - d. All of the above
2. _____ is the only method of investigation where the unit are destroyed during the process of investigation
 - a. Data collection
 - b. Tabulation
 - c. Sampling
 - d. Schedule
3. _____ is a method in which each unit has a known zero-probability
 - a. Non- probability sampling
 - b. Probability sampling
4. In sampling method, the population is divided into a number of sub-population
 - a. Simple random sampling
 - b. Stratified random sampling
 - c. Proportional stratified sampling
 - d. Systematic random sampling
5. _____ is also known as multi stage sampling
 - a. Cluster sampling
 - b. Systematic sampling
 - c. Sequential sampling

- d. Simple random sampling
6. _____ sampling involves selecting units for a sample on the basis of opinion of one or more person
- a. Judgment
 - b. Quota sampling
 - c. Stratified sampling
 - d. Cluster sampling
7. The aim in selecting a sample is to :
- a. Achieve maximum precision in your estimate within a given sample size
 - b. Avoid bias in the selection of your sample
 - c. Both a and b
 - d. None of the above
8. There are two types of stratified sampling
- a. Proportionate and disproportionate
 - b. Structured and unstructured
 - c. Cluster and un-cluster
 - d. Proportional and un-proportional sampling
9. Snowball sample is
- a. A type of random sample
 - b. A type of probability sample
 - c. A type of non-probability sample
 - d. Not a type of sample
10. sampling frame is a list of :
- a. sample unit
 - b. population unit
 - c. type of sample
 - d. Not a type of sample
11. N/n formula is used to determine
- a. Sample size
 - b. Sampling fraction
 - c. Sampling error
 - d. Weighted sample
12. When no new information is coming from your respondents, it is called as
- a. Sample size
 - b. Population mean
 - c. Saturation point
 - d. Sample statistic

13. The way you select students, families or election is called as
 - a. Sampling unit
 - b. Sampling frame
 - c. Sampling design
 - d. Sample statistics
14. 'Equality of chance' is not a characteristics of
 - a. Stratified
 - b. Systematic
 - c. Multistage sampling
 - d. Quota sampling
15. Sampling ratio and sampling interval are the terms used in
 - a. Stratified sample
 - b. Systematic
 - c. Multi stage sampling
 - d. Quota sampling
16. The aim/s of sampling is/are to:
 - a. Avoid bias in the selection of your sample
 - b. Achieve minimum precision in estimates with in the given sample size
 - c. Sampling is done by non-random method
 - d. The sampling frame for testing the sample
17. Non- random sampling are
 - a. Quota/accidental/judgmental/ snowball
 - b. Cluster/ single strata/ double stage/ multistage
 - c. Proportionate / disproportionate
 - d. All of the above
18. In systematic sampling the sampling frame is divided into numbers of segments are called
 - a. Segments
 - b. Interval
 - c. List
 - d. All of the above
19. The standard deviation of the sampling distribution of a statistics is known as its
 - a. Error
 - b. T-ratio
 - c. Standard error
 - d. None of the above

20. The ways through which information can be acquired
- Census method
 - Sampling method
 - Both a and b
 - None a and b

Level B

1. A random table consists of some digits which have been generated by a random process. The table available are:
- Tipette's Random Sampling numbers
 - M.G.Kendall and Babington Smith
 - Sndecre's 10000 random numbers
 - All of the above
2. The following statement "For a given degree of precision, it will take a smaller number of cases to determine the state of affairs in the first stratum than in the second
- P.V Young
 - Goode and Hatte
 - Karl Pearson
 - Jahoda
3. _____ is an aggregate of all the cases that conform to some designated set of specifications
- Sample
 - Design
 - Information
 - Population
4. Some characteristics of universe are intensively studied and the sample size is very small
- Judgment sampling
 - Quota sampling
 - Convenience sampling
 - Accidental sampling
5. _____ technique is applied on the basis of the region or are
- Self selected
 - Inter penetrating
 - Line sampling
 - Area sampling

6. _____ technique was proposed by Prof P.C. Mahalanobis
- Self selected
 - Inter penetrating
 - Line sampling
 - Area sampling
7. When an investigation gets a definite quota or different groups (i.e social class, age, group-ethnic group) of the universe, then it is known as
- Quota sampling
 - Convenient sampling
 - Accidental sampling
 - Judgment sampling
8. _____ technique was designed by Abraham Wald
- Multiple
 - Double
 - Sequential
 - Multi stage
9. To avoid bias in sampling one should
- Not substitute one sample for another
 - Make use of trained investigator
 - By using the sample and designing easily answerable questionnaire
 - All of the above
10. A substantially different approach to the problem of determining a reliably desired sample is
- Sample size
 - Stability test
 - Sampling error
 - None of the above

Answers**Level A**

38. b	39. c	40. b	41. b
42. c	43. a	44. c	45. a
46. c	47. a	48. b	49. c
50. c	51. d	52. a	53. a
54. b	55. b	56. a	57. c

Level B

6. d	7. c	8. d	9. a
10. d	11. a	12. a	13. c
14. d	15. b		

CHAPTER-6**Tables & Tabulation**

Q.1 What is the meaning of Classification? Give objectives of Classification and essentials of an ideal classification.

Ans.: Classification is the process of arranging data into various groups, classes and sub-classes according to some common characteristics of separating them into different but related parts.

Main objectives of Classification:-

- (i) To make the data easy and precise
- (ii) To facilitate comparison
- (iii) Classified facts expose the cause-effect relationship.
- (iv) To arrange the data in proper and systematic way
- (v) The data can be presented in a proper tabular form only.

Essentials of an Ideal Classification :-

- (i) Classification should be so exhaustive and complete that every individual unit is included in one or the other class.
- (ii) Classification should be suitable according to the objectives of investigation.
- (iii) There should be stability in the basis of classification so that comparison can be made.
- (iv) The facts should be arranged in proper and systematic way.
- (v) Data should be classified according to homogeneity.
- (vi) It should be arithmetically accurate.

Q. 2 – What are tables and how many types are then?

Ans. – Tables are most common method of presenting analysis data. It is the presentation of data in the form of rows and column. Tables offer a useful means of presentation large amount of detailed information in a small space.

Types of tables –

- 1) **Univariate table** – when the information is displayed about one variable then it is called uni-variate table. Ex. - Respondents of age (Frequency table for one population hypothetical data) -:

Age	No of respondents
<20 years	2
20 – 24 years	12
25 – 29 years	19
Total	43

- 2) **Bi-variate tables** – When the table contain information regarding two variable the n it is known as bivariate table.
- 3) Ex. –

	Age		
Attitudes towards college politics	20	20 – 22	22 – 25
Strongly favourable	0	0	4
Favourable	0	3	5
Un certain	0	2	2
Cannot say	2	7	1

- 4) **Polymerase table** – Ex. –

	No. of respondents					
Attitudes towards politics college	> - 25		22 – 25		20 – 18	
	F	M	F	M	F	M
Strongly favourable	0	0	1	1	3	1
Favourable	0	0	1	2	3	2
Uncertain	1	1	4	3	1	0
Un favourable	4	8	12	2	8	7

Q.3 – What is variable?

Ans. – A variable is a feature or an item under observation different states of which can be measured and expressed in terms of quotation values. A variable represents certain characteristic feature data. Different ways of describing variables are –

- 1) **Discrete variable and continuous variable** – A discrete variable is one which when measured can take only one in liger like no of faculty, rooms in house etc. A continue variable is one in which when measured can arrange any real value and an such, has to be expensed in terms of a range of quotation values such as rights of number, profit of interrex, production of industry.
- 2) **Observable and latent variable** – A variable representing feature which can be observed in a survey is known as observable value. A variable which cannot be observed directly known as latent variable.
- 3) **Real and dummy variable** – A real variable is one for which observation are recorded during a survey. A dummy variable represents phenomenon, which in introduced at a later silage in the survey or during analysis.

- 4) **Co-explanatory and criterion variable** – A variable which can be confided a cure in the care and effect relationship among the variable under observation is known as carvel explanatory variable. When a variable dandling the effect of the explanatory or cased variable is known as critics variable.

Q. 4 – What are advantages and disadvantages of tabulation?

Ans. – Advantages of tabulation -

- 1) Tabulation helps to represent a clear cut picture of the complex more of data and makes it easy to understand. According to Prof. Bowley,” after tabulation instead of chaotic mass of infinitely varying items we have a definite general outline of the whole group in question.
- 2) Tabulation presents data in smallest possible space. This is very useful not only because some paper in saved but also because it gives greater clarity.
- 3) Tabulation makes the work of comparison easy. The correct method of studying the figure is to make their comparative analysis.
- 4) Tabulation is necessary for various kinds of statistical calculations. In finding out various statistical measurement like averages, dispersion, correlation etc. the data has to be arranged in the form of various kinds of statistical series.
- 5) Tabulation given significant form of classification. Event when data has been classified in to different groups, their significance are not clear unless they have been put is the form of suitable tables.

Limitation of tabulation –

- 1) As the tabulation contains figures and so they do not afford sufficient space for their description.
- 2) The tables cannot put the qualitative information.
- 3) The understanding of latter requires a special knowledge in the technique of understanding figure.
- 4) The tables are thus confined to utility to those persons only who have a specialized knowledge of the figure given in the tables and need no theoretical background to make their significance clear.

Q.5. How many types of Series are there on the basis of Quantitative Classification? Give the difference between Exclusive and Inclusive Series.

Ans.: There are three types of frequency distributions -

- (i) **Individual Series** : In individual series, the frequency of each item or value is only one for example ;marks scored by 10 students of a class are written individually.
- (ii) **Discrete Series** : A discrete series is that in which the individual values are different from each other by a different amount.

For example:

Daily wages	5	10	15	20
No. of workers	6	9	8	5

- (iii) **Continuous Series :** When the number of items are placed within the limits of the class, the series obtained by classification of such data is known as continuous series.

For example

Marks obtained	0-10	10-20	20-30	30-40
No. of students	10	18	22	25

Difference between Exclusive and Inclusive Series

	Exclusive Series	Inclusive Series
Limits	Upper limit of one class is equal to the lower limit of next class.	The two limits are not equal.
Inclusion	The value equal to the upper limit is included in the next class.	Both upper & lower limits are included in the same class.
Conversion	It does not require any conversion.	Inclusive series is converted into exclusive series for calculation purpose.
Suitability	It is suitable in all situations.	It is suitable only when the values are in integers.

Q.6. What is Bivariate Frequency Distribution?

Ans.: A frequency distribution obtained by the simultaneous classification of data according to two characteristics is known as a bivariate frequency distribution.

Q.7. Define Tabulation. State the objectives of Tabulation and kinds of Tables.

Ans.: According to Blair, *"Tabulation in its broad sense is an orderly arrangement of data in columns and rows."*

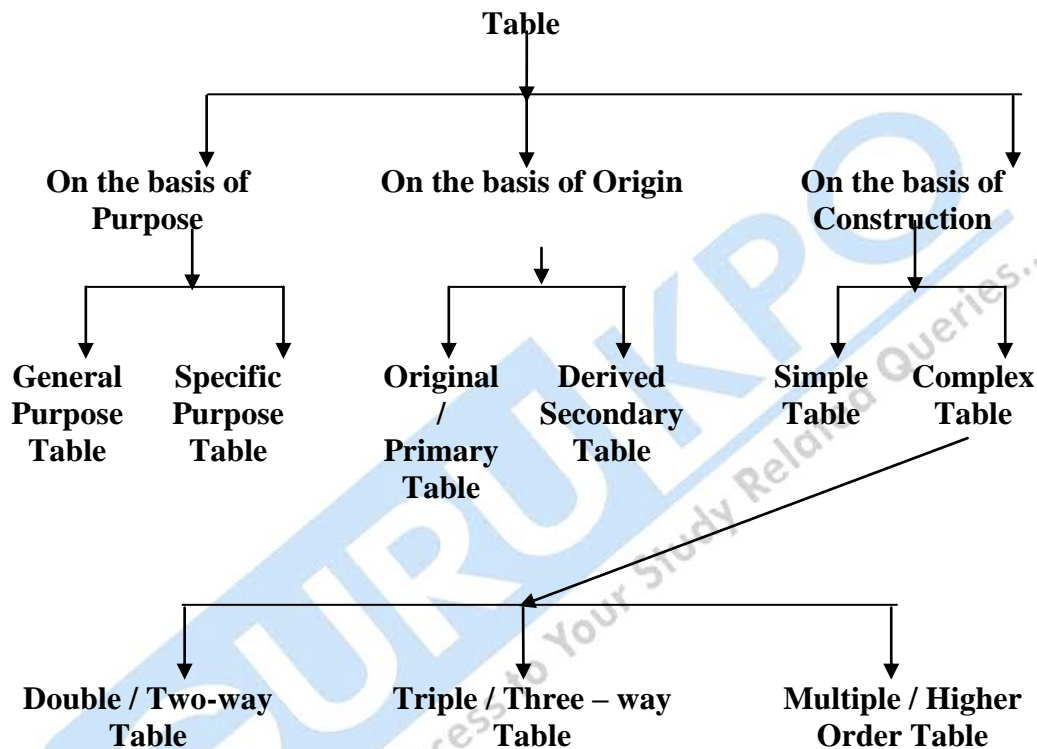
Tabulation is a process of presenting the collected and classified data in proper order and systematic way in columns and rows so that it can be easily compared and its characteristics can be elucidated.

Objects of Tabulation :

- Orderly and systematic presentation of data.

- Making data precise and stable.
- To facilitate comparison.
- To make the problem clear and self evident.
- To facilitate analysis & interpretation of data.

Kinds of Table : The different kinds of tables are shown in the following chart



Q.8 What are the main parts of a good Table?

Ans.: The number of parts depends mostly on the nature of the data. However, a table should have the following parts.

- Table No. :** Each table should be numbered so that the table may be referred with that number.
- Title :** Every table must be given a suitable title which should be short, clear and complete.
- Captions :** Caption refers to the column heading which explains what the column represents.
- Stubs :** Stubs are the designations of the rows or row headings.
- Body :** It is the heart of the table. The body of the table contains the numerical information.

- (vi) **Ruling and Spacing** : Ruling and leaving the space depends on the needs of the topic and makes the table attractive and beautiful.
- (vii) **Footnotes** : In order to explain the figures shown in the table, explanatory notes may be given at the end of the table.
- (viii) **Source** : At the end of the table, the source or origin of given data is mentioned.

Multiple Choice Questions: Tables and Tabulation

Level A

1. Which of the following is not an essential part of a table
 - a. Heading of the table
 - b. Variable categories
 - c. Cell frequencies
 - d. Total
2. Tabulation is not helpful in
 - a. Presenting of data
 - b. Collection of data
 - c. Knowing distribution of data
 - d. Statistical analysis of data
3. _____ contains information about two variables
 - a. Univariate
 - b. Bivariate
 - c. Polyvariate
 - d. Multivariate
4. _____ represents data in understandable and interpretative way
 - a. Table
 - b. Graph
 - c. Data
 - d. Variable
5. _____ is a systematic arrangement of numerical information collected through investigation
 - a. Table
 - b. Collection of data
 - c. Variable
 - d. Coding
6. _____ table shows the division of data in two or more categories
 - a. Simple

- b. Complex
 - c. Both a and b
 - d. None of the above
7. A quantitative characteristic of sample is
- a. Population
 - b. Hypothesis
 - c. Parameter
 - d. Statistics
8. A variable which when measured can take only an integer value
- a. Observable variable
 - b. Real variable
 - c. Explanatory variable
 - d. Discrete variable
9. A variable representing features which can be observed directly in a survey is known as
- a. Discrete variable
 - b. Observable variable
 - c. Continuous variable
 - d. Latent variable
10. A variable which cannot be observed directly is known as
- a. Latent variable
 - b. Discrete variable
 - c. Observable variable
 - d. Continuous variable
11. A variable which is observed during a survey is called as
- a. Dummy variable
 - b. Real variable
 - c. Both a and b
 - d. None of the above
12. Explanatory variable are also known as
- a. Endogenous
 - b. Internal
 - c. Both a and b
 - d. Exogenous
13. _____ is used to predict the behaviour of that dependent variable with the change in the explanatory variable
- a. Multiple regression analysis
 - b. Multiple discriminant analysis
 - c. Multivariate analysis of variance

- d. Canonical correlation analysis
14. _____ is a part of the technical process in the statistical analysis of the data
- a. Data
 - b. Tabulation
 - c. Editing
 - d. Coding
15. A series is formed from data which are capable of exact measurement
- a. Grouped analysis
 - b. Continues data
 - c. Discrete data
 - d. None of the above
16. Items having values equal to the limits (both upper and lower) of a class are included in the frequency of that class
- a. Inclusive
 - b. Exclusive
 - c. Both a and b
 - d. None of the above
17. "Classification is the process of arranging things in groups or classes according to their resemblance or affinities." This definition is given by
- a. Jahoda
 - b. P.V. Young
 - c. Prof Connor
 - d. None of the above
18. When the measurement of individual items are arranged either in ascending or descending order, then it is known as
- a. Table
 - b. Array
 - c. Series
 - d. All of the above
19. Discrete series consist of two columns only, first, the size or measurement and second _____
- a. Data
 - b. Array
 - c. Frequency
 - d. Both a and b
20. Difference between upper and lower limit or total range of class is known as
- a. Lower limit
 - b. Class interval

- c. Class
- d. Limit

Level B

1. _____ is also known as repository or reference table
 - a. Simple table
 - b. Bi-variate table
 - c. Multi-variate table
 - d. General purpose table
2. When there are more than one factor to be compared, then it is called as
 - a. Univariate table
 - b. Bivariate table
 - c. Multivariate table
 - d. Complex table
3. When tabulation is to be done by hand using tally or score sheet, then it is known as
 - a. Hand
 - b. Mechanical
 - c. Both a and b
 - d. None of the above
4. _____ tabulation is done through machines
 - a. Hand
 - b. Mechanical
5. The use of graph and diagrams is made to remove complexity of tables
 - a. True
 - b. False

Answers

Level A

58. c	59. b	60. c	61. b
62. a	63. b	64. d	65. d
66. b	67. a	68. b	69. c
70. a	71. b	72. c	73. a
74. c	75. b	76. c	77. b

Level B

11. d	12. d	13. a	14. b
15. a			

CHAPTER-7**Averages**

Q. 1 – What are averages gives its utility in social research?

Ans. – An average may be defined as any figure or group of words that convey the qualities or characteristics of any group to the maximum extent.

Utility –

- 1) Average gives a bird's eye view of huge mass of statistical data regarding a problem.
- 2) Averages are extremely helpful for the purpose of comparison.
- 3) Average prepare basis for further analysis of data.
- 4) Average guide is the formulation of policies and all other business, social and political activities.
- 5) Averages are representative of whole group and on their basis, conclusion are derived regarding the particularities of the whole universe.

Q.2 What is meant by 'Data'?

Ans.: Data refers to any group of measurements that happen to interest us. These measurements provide information the decision maker uses. Data are the foundation of any statistical investigation and the job of collecting data is the same for a statistician as collecting stone, mortar, cement, bricks etc. is for a builder.

Q. 3 What do you understand by mode. What are its advantage and disadvantage?

Ans. Mode is the most common item of a series. According to Croxten and Cowden "The mode of a distribution is the value at the point around which the item tends to be most heavily concentrated. It may be regarded as the most typical of value. For example if we say that in a factory the wage of Rs.50/- is given to most of the laborers, then Rs.50/- is the modal wages

Merits -

- 1) It is very easy to locate, even just by glance we can take out the modal value.
- 2) It is affected by extra – ordinary measurement. The modal age of the students of a class will remain unaffected even if a few very young or much older students join the class.

- 3) It is not necessary to know the size of the entire unit.
- 4) It is directly applicable to largest number of means.
- 5) It can be expressed and located graphically

Demerits –

- 1) It is not amenable to further mathematical treatment.
- 2) It is undetermined and undefined. It changes with the size of class interval
- 3) It has limited application. The series must be symmetrical and form one single hump in frequency distribution.
- 4) Sometimes the highest frequency items are located in the very beginning or at the very end of the series.
- 5) Mode considers the frequencies of one group only are leaving out the other group.

Q. 4 What is median. What are its advantage and disadvantage?

Ans. Median is the value of the middle item of a series when it is arranged in ascending and descending order of magnitude. In the words of Conor, “the median is been defined as that value of the variable which divides the group in two equal parts, one part comprising all values greater and other all values less than the median.”

For example 5 students got marks in sociology 17,22,30,34 and 40 marks respectively. Here the values are already arranged in ascending order, so 30 marks will be taken as median marks they are marks of 3rd student who is located in the middle of the frequency.

Merits

1. It is rigidly defined and indefinite figures free from ambiguity are avoided.
2. It is also easy to understand and easy to calculate
3. It is not affected values of extreme items and as such are most representative than other averages.
4. It is not necessary to know values of all the items to calculate median even if the values of extreme items are not known, median can be calculated.
5. In many cases it can be located by mere inspection
6. It gives best result in a study of those phenomena which are incapable of direct quantitative measurement
7. It is not necessary to know values of all the items to calculate median.
8. In many cases it can be located by mere inspection
9. It gives best result in a study of those phenomena which are incapable of direct quantitative measurement.

Demerits

1. It is not based on all observation of the series, hence not representative in many cases.
2. It is not suitable for further algebraic treatment, hence its use is limited
3. It cannot be ascertained without arranging the item in ascending or descending order or magnitude.
4. It is more likely to be affected by fluctuation of sampling than the means.

5. In continuous series median has to be interpolated, which in many case may not be true.

Ques. 4

Find out Modal wage from the following data:

Wages (in Rs.)	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of Laborers	6	10	12	16	13	8	7

Solution**Grouping Table**

Wages Group X	Frequency					
	1	2	3	4	5	6
0-10	6	16	22	28	38	41
10-20	10					
20-30	12	28	29	15	15	15
30-40	16					
40-50	13	21	15	15	15	15
50-60	8					
60-70	7	15	15	15	15	15

Column No.	Size of Item						
	0-10	10-20	20-30	30-40	40-50	50-60	60-70
1			I	I			
2							
3				I	I		
4				I	I	I	
5		I	I	I			
6			I	I	I		
Total		1	3	6	3	1	

From the above table it appears that the modal group is 30-40 as it has concentration of maximum number of frequencies. Now by applying the following formula of interpolation, we can locate the mode.

$$Z = L_1 + \frac{\Delta_1}{\Delta_1 + \Delta_2} \times i$$

Here L_1 = Lower Limit of the Modal groups
 Δ_1 = $f_1 - f_0$; (16-12) = 4

$$\begin{aligned}\Delta_2 &= f_1 - f_2; (16 - 13) = 3 \\ I &= 30 - 20 = 10\end{aligned}$$

By substituting the values

$$30 + \frac{4}{4 + 3} \times 10$$

$$30 + \frac{4 \times 10}{7} \times 10$$

$$30 + 5.71 = \text{Rs. } 35.71 \text{ Modal Wage}$$

We can also use the following formula and get the same result:

$$Z = L_1 + \frac{f_1 - f_2}{2_{f_1 - f_0 - f_2}} \times i$$

Ques.5

Find out mode from the following data:

Central Size	2.5	7.5	12.5	17.5	22.5	27.5	32.5	37.5
Frequency	5	9	12	21	20	15	8	3

From the next Grouping table it appears that the maximum concentration of item is around two intervals, 15-20 and 20-05. In order to decide which of these two groups has the maximum concentration, we can this method.

Solution

Probable Model Classes	15-20	20-25
1. Frequency of the preceding Class	13	21
2. Frequency of the Modal Class	21	20
3. Frequency of the Succeeding Class	20	15
	54	56

Class Intervals	Frequencies						Classes of Max. Freq.
	1	2	3	4	5	6	
0-5	5	14	22	27	43	5	
5-10	9						1
10-15	13	34	41	43	5	5	2
15-20	21						5
20-25	20						5

25-30	15	54	3
30-35	8	35	1
35-40	3	23	
		11	
		26	
		56	
		43	

The maximum concentration of the item is around 20-25 group, hence this is modal group. Further in the above table the frequency of the class preceding to the model class is higher, the following formula should be used.

$$Z = L_1 + \frac{f_2}{f_0 + f_2} \times i$$

$$20 + \frac{15}{21 + 15} \times 5$$

$$20 + \frac{15 \times 5}{36}$$

$$20 + 2.08 = 22.08 \text{ Mode}$$

S.No.	Calculation of Median Wages in Rs.
1	70
2	80
3	100
4	110
5	114
6	115
7	120

$$M = \frac{\text{the size of } \frac{(N+1)}{2} \text{th item} + \text{the size of } \frac{(N+1)}{2} \text{th item}}{2}$$

the size of 4th item is 110

Hence median wage is Rs.110

Ques 6**Find out median from the following data:**

Roll No.	1	2	3	4	5	6	7	8	9	10
Marks	10	27	24	12	25	27	20	15	18	29

Solution**Calculation of Median Marks**

S.No.	Marks
1	10
2	12
3	15
4	18
5	20
6	24
7	25
8	27
9	27
10	29

$$\begin{aligned}
 M &= \text{the size of } \frac{(N+1)}{2} \text{th item} \\
 &= \text{the size of } \frac{(10+1)}{2} \text{th item} \\
 &= \text{the size of } 5.5 \text{th item}
 \end{aligned}$$

Now the value of 5.5th item will be determined as follows:

$$\begin{aligned}
 \text{Size of 5.5th item} &= \frac{\text{size of 5th item} + \text{size of 6th item}}{2} \\
 &= \frac{20+24}{2} = \frac{44}{2}
 \end{aligned}$$

Median = 22 marks

Location of median in discrete series

Median in discrete series is determined as follows:

1. First we shall arrange the series according to the ascending or descending order of magnitude if it is not already arranged.
2. Then shall calculate the cumulative frequencies against each item.
3. After that we shall use the following formula and determine the median :

$$M = \text{the size of } \frac{(N+1)}{2} \text{th item}$$

Ques.7

Find out median height from the following data:

height inches	60	61	62	63	64	65	66
	50	60	40	70	72	40	28

Solution

Calculation of median height

Height	No. of students	Cumulative Frequency
60	50	50
61	60	110
62	40	150
63	70	220
64	72	292
65	40	332
66	28	360

$$M = \text{the size of } \frac{(N+1)}{2} \text{th item}$$

$$= \frac{(360+1)}{2} \text{th item}$$

$$= \text{the size of } 180.5 \text{th item}$$

It will be clear from the above figures that the value of items 151 to 220 is 63". The value of 180.5th item, thus is also 63". Hence median is 63".

$$N = \text{Number of item}$$

Ques.8

The monthly expenditure of 5 students of hostel is given below. Find out from it the average expenditure per student by direct as well as short cut method.

Rs. 132, 140, 144, 136, and 138

Solution**Direct method**

Calculation of mean expenditure of 5 students.

S.No.	Expenditure
1	132
2	140
3	144

4	136
5	138

$$\bar{X} = \frac{\sum X}{N} = \frac{690}{5} = \text{Rs. } 138$$

Short cut method

We take 144 as assumed average

S.No.	Expenditure	Deviation from assumed average A= 144 Dx
1	132	-12
2	140	-4
3	144	0
4	136	-8
5	138	-6
total	N = 5	$\sum dx = -30$

$$\bar{X} = A + \frac{\sum dx}{N} = 144 + \frac{-30}{5}$$

$$= 144 - 6 = \text{Rs. } 138$$

Calculation of Mean in Discrete Series

Direct Method

1. In a discrete series the values of the variable are multiplied by their respective frequencies and the products so obtained are totaled.
2. Then the total is divided by the total number of frequencies. the resulting quotient is the simple mean of the series.

Algebraically it can be expressed as follows :

$$\bar{X} = \frac{\sum fx}{N}$$

Here $\bar{X} = \text{Mean}$

$\sum fx = \text{Total of product of value of item with their frequencies}$

Short cut method

1. First we take one of the value as assumed average.
2. Then deviations of items from this assumed average are found out and multiplied by their respective frequencies. They are called $\sum fdx$
3. The total of these products is divided by the total frequencies and added to the assumed mean. The resulting figure will be the simple mean.

Algebraically we can express is the form of following :

$$X^- = \frac{A + \sum fdx}{N}$$

Here A = Assumed Average
 $\sum fdx$ = total of product of deviations
 Multiplied by their frequencies
 N = Total number of frequencies

Ques.9

Form the following series of marks obtained by 60 students calculate the mean marks by Direct and shortcut methods:

Marks	10	20	30	40	50	60
No. of Students	8	10	12	20	6	4

Solutions

Calculation of mean marks of 60 students

I Direct Method**II Shortcut Method**

Marks X	No. of Students	Total Marks fx	Marks X	No. of Students f	Dev from Assumed average A = 30 dx	total Deviations fdx
10	8	80	10	8	-20	-160
20	10	200	20	10	-10	-100
30	12	360	30	12	0	0
40	20	800	40	20	+10	200
50	6	300	50	6	+20	120
60	4	240	60	4	+30	120
Total	60			60		180

Marks	0-10	10-20	20-30	30-40	40-50	50-60
	10	15	20	25	18	12

Solution

Calculation of mean marks by Direct and shortcut method

Marks X	No. of Students f	Mid Values X	Total Marks fx	Deviations from A=25 dx = £ -A, dx 5-25	Total Deviation fdx
0-10	10	5	50	-20	-200
10-20	15	15	225	-10	-150
20-30	20	25	500	0	0
30-40	25	35	875	10	250
40-50	18	45	810	20	360
50-60	12	55	660	30	360
Total	100	-	3120	-	620

Direct Method

$$\begin{aligned}
 X^- &= \frac{\sum fx}{N} \\
 &= \frac{3120}{100} \\
 &= 31.20 \text{ marks}
 \end{aligned}$$

Shortcut Method

$$\begin{aligned}
 X^- &= A + \frac{\sum fd'x}{N} \\
 &= 25 + \frac{620}{100} \\
 25 + 6.20 &= 31.20 \text{ marks}
 \end{aligned}$$

Marks X	No. of Student f	Mid Values x	Deviations from A=25 dx	Step Deviation by 10 dx	Total Deviation fd'x	
0-10	10	5	-20	-2	-200	-20
10-20	15	15	-10	-1	-150	-15
20-30	20	25	0	0	0	0
30-40	25	35	10	1	250	25
40-50	18	45	20	2	360	18
50-60	12	55	30	3	360	18
Total	100	-	-	3	60	

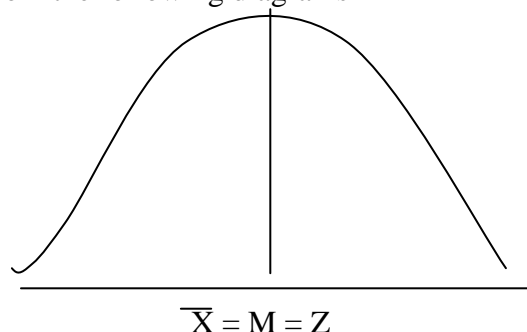
$$\begin{aligned}
 X^- &= A + \frac{\sum fd'x}{N} \\
 X^- &= 25 + \frac{62 \times 10}{100} = 25 + \frac{620}{100} \\
 25 + 6.20 &= 31.20 \text{ Marks}
 \end{aligned}$$

Q.10 What is Skewness? Why a Curve is said to be Skewed? How the Skewness of a Curve measured?

Ans.: Skewness refers to the asymmetry or lack of symmetry in the shape of a frequency distribution. In other words, skewness describes the shape of a distribution. A distribution is said to be 'skewed' when the mean and the median fall at different points in the distribution, and the centre of gravity is shifted to one side or the other – to left or right.

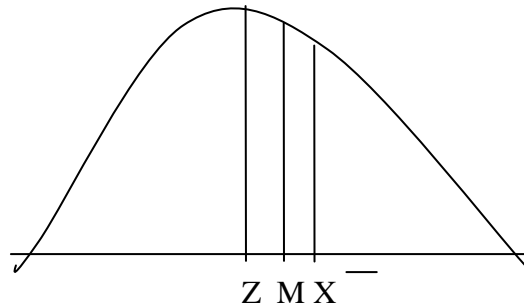
The concept of skewness will be clear from the following diagrams –

- i) **Normal or Symmetrical Distribution :** The spread of the frequencies is the same on both sides of the centre point of the curve. The curve drawn for such distribution is bell-shaped. The value of Mean, Median and Mode are equal

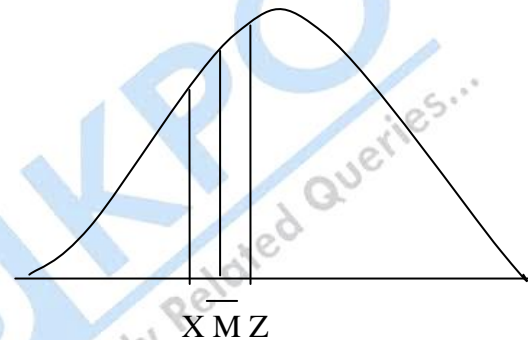


(ii) **Asymmetrical or Skewed Distribution** : A distribution which is not symmetrical is called a skewed distribution. It can be of two types:

- (a) **Positively Skewed Distribution** : In the positively skewed distribution, the curve has a longer tail towards the right and the value of mean is maximum and that of mode least and the median lies in between.



- (b) **Negatively Skewed Distribution** : In negatively skewed distribution, it has a longer tail towards the left and the value of mode is 'maximum' and that of mean least, the median lies in between the two.



In order to ascertain whether a distribution is skewed or not the following tests are applied.

Skewness is present if -

- If mean, median and mode are not equal.
- If the curve is not bell shaped.
- Quartiles are not equidistant from the median.
- If the sum of deviations from median and mode is not zero, and
- If the sum of frequencies on the two sides of the mode are not equal, the distribution has skewness.

Multiple Choice Questions: Averages

Level A

1. Averages are also known as
 - a. Central tendency
 - b. Proportion
 - c. Percentages
 - d. Fractions
2. A given distribution of quantities may not have
 - a. Mean
 - b. Media
 - c. Mode
 - d. All of the above
3. When calculated values of mean, median and mode are equal, the distribution is known as
 - a. Asymmetrical
 - b. Skewed
 - c. Bimodal
 - d. Symmetrical
4. The value of mean, median, and mode can never be same in a given distribution
 - a. True
 - b. False
5. Which of the following sequential relation of mean, median and mode is incorrect?
 - a. Mode, median, mean
 - b. Mean, median, mode
 - c. Mean, mode, median
6. There shall always be mean, median and mode in given distribution
 - a. True
 - b. False
7. Computation of median is the part of
 - a. Data presentation
 - b. Data processing
 - c. Data analysis
 - d. Data interpretation
8. Mean are also known as
 - a. Statistical averages
 - b. Statistical mean
9. _____ is the value of the middle item of series when it is arranged in ascending or descending degree of magnitude
 - a. Mean
 - b. Mode
 - c. Median
10. _____ is the most commonly or frequently occurred value in a series
 - a. Mean
 - b. Mode

- c. Median
- 11. The formula for calculating mean
 - a. $\bar{X} = \sum x/n$
 - b. $\bar{X} = \sum xn/n$
 - c. $\bar{X} = \sum Xi/n$
 - d. $\bar{X} = \sum n/x$
- 12. The formulae for calculating mean taking assumed mean is
 - a. $\bar{X} = A + \frac{\sum (xi-A)}{n}$
 - b. $\bar{X} = A$
 - c. $\sum d$
 - d. $\sum d/n$
- 13. Averages give a bird eye view of the huge mass of statistical data regarding a problem
 - a. True
 - b. False
- 14. Averages are representative of whole group
 - a. True
 - b. False
- 15. The ideal characteristic/s of average/s is/are
 - a. It should be rigidly defined
 - b. It should be based on all the observations of the series
 - c. It should be affected by fluctuations of sampling
 - d. All of the above
- 16. "The mode of a distribution is the value at a point around which the item tends to be most heavily concentrated." This definition is given by
 - a. Croxten and Cowden
 - b. Bailey
 - c. Jahoda
 - d. None of the above
- 17. The formulae for calculating mode
 - a. $\frac{\sum f}{n}$
 - b. $\frac{\sum f}{\sum x}$
 - c. $\frac{\sum f}{\sum x}$
 - d. $\frac{\sum f}{\sum x}$
- 18. Mode is
 - a. Not affected by extra- ordinary measurements
 - b. It is directly applicable to largest number of items
 - c. It is very easy to locate
 - d. All of the above
- 19. _____ is the size of middle item
 - a. Mean
 - b. Mode
 - c. Media
 - d. All of the above
- 20. The formulae for calculating median

- a. Df
- b. Dfg
- c. Fgh
- d. Hn

Level B

1. _____ can be located by mere inspection
 - a. Mean
 - b. Mode
 - c. Media
 - d. Averages
2. Median can be used to study those phenomenon which are incapable of direct quantitative measurement
 - a. True
 - b. False
3. Mean can be calculated in continuous series by
 - a. Direct method
 - b. Short cut method
 - c. Step deviation method
 - d. All of the above
4. Averages give greater importance to bigger items of a series
 - a. True
 - b. False
5. In a moderately asymmetrical distribution the formula is
 - a. $M = z - 1/3(g - z)$
 - b. $3M = 2a + z$
 - c. $Z = 3M - 2z$
 - d. All of the above
6. The ideal average
 - a. Brings validity to generalization
 - b. Makes comparison possible
 - c. Are more stable
 - d. All of the above
7. _____ gives group characteristics and take no consideration of the individual peculiarity
 - a. Mean
 - b. Mode
 - c. Median
 - d. Averages
8. The mean of the following data 6, 7, 10, 8, 9, 8, 7 is
 - a. 6
 - b. 7
 - c. 8
 - d. 9
9. _____ is an arithmetic averages of averages

- a. Comparative
 - b. Companion
 - c. Composite
 - d. None of the above
10. _____ is calculated by cumulating the figures of all period including current period and dividing the total by number of time period considered
- a. SCumulative
 - b. Progressive
 - c. Composite
 - d. All of the above

Answers**Level A**

78. a	79.	80. d	81. a
82. a	83. b	84. b	85. a
86. c	87. b	88. c	89. a
90. a	91. a	92. d	93. a
94. a	95. c	96. c	97. b

Level B

16. c	17. a	18. d	19. a
20. c	21. d	22. d	23. c
24. c	25. b		

CHAPTER-8**Keywords**

1. **Science:** Science is an objective, logical and systematic method of analysis of phenomena devised to permit the accumulation of reliable knowledge.
2. **Intra-Subjective:** is that repeated observation of constant phenomenon by the same observer will yield constant data.
3. **Inter-Subjectivity:** is only a more adequate formulation of what is generally meant by the objectivity in science.
4. **Ethical Neutrality:** in order to discover what is and to properly conceptualize what is, it is necessary for social scientist to bring no personal prejudice or bias to his study.
5. **Generality:** the conclusions of any imports in science are generalizations which is the statement of general applicability.
6. **Research:** A careful, critical inquiry or examination in seeking facts or principles, diligent investigation in order to ascertain something.
7. **Pure Research:** Research may be motivated by the desire to understand or for the sake of knowing.
8. **Applied Research:** Science need not be made much of, because the two are not mutually exclusive and there is a continual interplay between them, each contributing to the other in many ways.
9. **Objectivity:** The problem of impartiality or biaslessness is in part, a problem of objectivity. The problem of objectivity is one of knowing reality. Objectivity involves two other considerations, viz. the correct method of dealing with any question of how we know anything.
10. **Hypothesis:** A proposition, condition or principle which is assumed, perhaps without belief, in order to draw out its logical consequences and by this method to test its accord with facts which are known or may be determined.
11. **Hypothesis concerned with complex 'Ideal type':** These hypothesis aim to testing whether logically derived relationships between empirical uniformities

- obtain. This level of hypothesizing moves beyond the level of anticipating a simple empirical uniformity by visualizing a complex referent in society.
- 12. Concept:** A concept is an abstraction of observed things, events or phenomena. McClelland defines the term concepts as a short –hand representation of a variety of facts.
 - 13. Exploratory Studies:** The purpose of formulating a problem for more precise and structured investigation or of developing hypothesis.
 - 14. The Experience Survey:** some people in the course of their day to day experience, by virtue of their peculiar placement as officials, social workers, professionals, etc., are in a position to observe the effects of different policy actions and to relate these to problems of human welfare. the specialists acquire in the routine of their work, a rich fund of experience that can be tremendous value in helping social scientists to develop awareness about the important influences operating in a situation they may be called upon to study.
 - 15. Randomization:** It involves random assignment of members of a group of subjects to experimental and control groups. The assignments procedure must give each subject the same chance of being assigned to any of the alternative groups.
 - 16. Content Analysis:** Berelson defines content analysis as a research technique for the objective, systematic and quantitative description of the manifest content of communication.
 - 17. Observation:** The primary research instrument would seem to be the observing human intelligence trying to make sense out of human experience. One great asset of the observational technique is that it is possible to record behavior as it occurs.
 - 18. Controlled Observation:** Also known as unstructured observation. This is characterized by a careful definition of the units to be observed, information to be recorded, the selection of pertinent data for observation and standardization of condition of observation.
 - 19. Structured observation:** Consists in careful definition of categories under which the information is to be recorded, standardization of condition of observation, and is used mostly in studies designed to provide systematic description or to test casual hypothesis.
 - 20. Interview:** The interview approach simply stated, involves a person designated the interview asking mostly question in a face to face contact to the other person or persons, designated the interviewee who give answers to these questions.
 - 21. The Structured Interviews:** Such interviews involve the use of a set of pre determined questions and highly standardized techniques of recording. The reasons for standardization are to ensure that all respondents reply to the same

- questions. Structured interviews mostly involve the use of fixed, alternative questions.
- 22. Unstructured Interviews:** Unstructured interviews, as opposed to the structured ones, are characterized by a far too greater flexibility of approach to questioning the respondents. Non-structured interview involves much lesser standardization of relevant techniques and operations.
- 23. Focused Interview:** The main objective of this type of interview is to focus attention on the given experience of the respondent and its possible effects. The interviewer knows in advance the aspects of a question he has to cover.
- 24. The Clinical Interview:** This type of interview is quite similar to the focused interview, the primary difference between them being that the clinical interview is concerned with broad underlying feelings or motivations or with the course of individual's life experience, rather than with the effect of the specific experience, as in the focused interview.
- 25. The non directive interview:** the initiative is more or less completely in the hands of respondent. The term non-directive received its currency from a type of psychotherapy in which the patients is encouraged to express his feelings without any questions or suggestions from the viewing.
- 26. Variables:** the concept variable refers to any quantity or characteristic quantities which may possess different numerical values or categories.
- 27. The Questionnaire:** is usually mailed to the respondents and contains specific, clear-cut directions, the persons charged with the collection of data need not exert themselves on offering additional explanation or instructions.
- 28. Structured Questionnaire:** are those in which there are definite, concrete and preordained questions with additional questions limited to those necessary to clarify inadequate answers or to elicit more detailed responses.
- 29. Open-ended questions:** are designed to permit a free response from the subject rather than one limited to certain stated alternatives.
- 30. The Case Study method:** The method of exploring and analyzing the life of a social unit/entity be it a role-incumbent, a family; an institution or a community is known as case study method.
- 31. Census:** refers to a count or a study of all of the elements in the populations.
- 32. Universe:** is said to be a collection of things or people that one would like to say, his samples was selected from. A universe can be finite, well-defined as well as infinite and ill-defined.
- 33. The probability sampling design:** is that one can specify from each element of the population the probability or the statistical chance of its being included in the sample.
- 34. Simple Random Sample:** A simple random sample is selected by a process that not only gives to each element in the population an equal chance of being

- included in the sample but also makes the selection of every possible combination of cases in the desired size, equally likely.
- 35. Lottery Method:** This method involves the following steps:
- a. Each** member or item in the population is assigned a unique number.
 - b.** Each number is noted on a separate card or a chip.
 - c.** The card or chips are placed in a bowl and mixed thoroughly.
- 36. Systematic sampling:** This type of sampling is for all practical purpose, an approximation of simple random sampling. It requires that the population can be uniquely identified by its order.
- 37. Stratified Random Sampling:** In this the population is first divided into a number of strata. Such strata may be based on a single criterion. A simple random sample is taken from each strata and such sub-strata are brought together to form the total sample.
- 38. Cluster sampling:** The sample first samples out from the population, certain large groupings i.e. cluster. These clusters may be city, wards, households or several geographical or social units. The sampling of clusters from the population is done by simple or stratified random sampling methods. From these selected clusters, the constituents' elements are sampled out by recourse to procedures ensuring randomness.
- 39. Multi-phase Sampling:** It is sometimes convenient to confine certain questions about specific aspects of the study to fraction of the sample, while other information is collected from the whole sample. This procedure is known as multi-phase sampling.
- 40. Accidental Samples:** In accidental sampling, the researcher simply reaches out and picks up the cases that fall to hand, continuing the process till such time as the sample acquires a desired size.
- 41. Quota Samples:** one of the most commonly used methods of sampling in marketing researchers and election polls is the method of quota sampling. The basic objective of quota sampling is the selection of a sample that is replica of the 'population' with respect to which one would wish to elements in the population will be included in the sample and that these elements will be taken account of in proportions in which they obtain in the population.
- 42. Purposive or judgment samples:** The basic assumption behind judgment sampling is that with the exercise of good judgment and appropriate strategy one can handpick the right cases to be included in the sample and thus develops samples that are satisfactory in relation to one's research needs.
- 43. Optimum Sample:** An optimum sample for a study may be defined as that sample which fulfills the requirement of efficiency, representativeness, reliability and flexibility. The sample should be small enough to forestall

- unnecessary expense and large enough to help the researcher avoids sample error beyond the limit of tolerance.
- 44. Tabulation:** Tabulation is a part of the technical process in the statistical analysis of the data. The essential element in tabulation is the summarization of results in the form of statistical tables.
- 45. Ungrouped Data:** The data collected for the purpose of a statistical inquiry may be simple figures without any form or structure. Data obtained in this way are in a raw state for they have not gone through any statistical treatment.
- 46. Inclusive class Interval:** In inclusive class interval, items having values equal to the limit (both lower and upper) of a class are included in the frequency of that class.
- 47. Exclusive class Interval:** when the items equal to the size of either the lower limit or the upper limit are excluded from the frequency reckoning of that class, the class interval is known as exclusive.
- 48. The Arithmetic Mean:** The arithmetic mean is by far the most common among the averages. It is relatively, easy to calculate, simple to understand and widely used in statistical calculations.
- 49. The Median:** The median divides the series in such a manner that there are as many items above as there are below it.
- 50. The Mode:** It is defined as the value that is repeated most often in the data-set. In grouped data the mode is located in the class where the frequency is the greatest.
- 51. Range:** The range is defined as the difference between the highest and lowest values.
- 52. Quartile Deviation:** Quartiles are the point which divides the array or series of values into four equal parts each of which contains 25 percent of the items in the distribution.
- 53. Standard Deviation:** The most useful and frequently used measure of dispersion is the standard deviation or root-mean square deviation about that mean. The standard deviation is defined as the square root of the arithmetic mean of the square of the deviation about the mean.
- 54. Chi-square:** is a method of evaluating whether or not frequencies which have been empirically observed differ significantly from those which would be expected under a certain set of theoretical assumptions.
- 55. Degrees of Freedom.** The number of degrees of freedom means the number of independent constraints imposed on us in a contingency table.

CHAPTER-9

Case Study

1. Design a case study for social research on the topic Women empowerment through MGNREGA.
2. Design a case study to study the social issue in the movies showcased in the Bollywood.
3. Design a Frame a multivariate table using hypothetical data.
4. Design a questionnaire to study the joint family system in a village.
5. Design a Interview schedule to interview your Director sir about the social structure found in the institution

6.

B.A. (Part-II) EXAMINATION, 2010**(10+2+3 Pattern)****(Faculty of Arts)**

[Also common with Subsidiary paper of B.A. (Hons.) Part II]

(Three-Year Scheme of 10+2+3 Pattern)

SOCIOLOGY**Solved Question Paper****First Paper : Survey Methods in Social Investigation****Time: One Hour****Max. Marks. 40****OBJECTIVE TYPE QUESTION**

Question Nos. 1-20 (Each Question carries 1 mark). Write the correct Serial No. of answer in the bracket given at the end of each question. Question Nos. 21-30 (Each question carries 2 marks) Give the answers of these question in not more than 15-20 words each.

1. Social Research in not:
(a) controlled (b) empirical
(b) unplanned (d) cumulative
2. Which of the following cannot be a topic of social research ?
(a) a hardworking student failing in exam
(b) a boy and a girl gossiping with each other
(c) a group of senior students ragging a fresher
(d) communal riots
3. The book 'Survey Methods in Social Investigation' is authored by:
(a) black and Champion (b) goode and Halt
(b) moser and Kalton (d) young and Young
4. Which of the following cannot be a purpose of social survey?
(a) to know the extent of poverty
(b) to identify the patterns of poverty
(c) to eradicate poverty
(d) to develop a theory of poverty
5. Scientific method is not:

- (a) deductive (b) empirical
(c) objective (d) value laden
6. Data collected by the researcher are known as:
(a) primary data (b) secondary data
(c) educational status (d) all of the above
7. Which of the following is not the basis of qualitative data?
(a) age status (b) social class
(c) educational status (d) income interval
8. A 'null hypothesis' is a hypothesis of:
(a) no difference (b) some difference
(c) maximum difference (d) average difference
9. Which of the following statements is an example of null hypothesis?
(a) two groups (males and females) are homogeneous in terms of their incomes
(b) two groups differ in terms of their incomes
(c) tow incomes of males are more than that females
(d) the females earn less than males
10. Questionnaire is not a suitable technique of data collection, when:
(a) respondents are geographically dispersed
(b) financial sources are limited
(c) most of the respondents are illiterate
(d) time limit is an important factor
11. To investigate crime career of a professional criminal, the most appropriate technique of data collection is:
(a) questionnaire (b) interview schedule
(c) observation (d) case study
12. Do you smoke? It is a :
(a) contingency question (b) suggestive question
(c) quantitative question (d) filter question
13. No claim for representativeness is made in:
(a) random sample (b) cluster sample
(c) quota sample (d) stratified sample
14. The concept of 'sampling fraction' is used in:
(a) random sample (b) stratified sample

- (c) snowball sample (d) systematic sample
15. A bivariate table has at least:
 (a) 2 cells (b) 4 cells
 (c) 6 cells (d) 8 cells
16. A simple table is based on:
 (a) one variable (b) two variables
 (c) more than two variables (d) no variable
17. The magnitudinal order of types of averages in a given distribution will be :
 (a) mode>mean>median (b) median>mode>mean
 (c) mean>mode>median (d) mean>median>mode
18. A given distribution may not have:
 (a) mean (b) mode
 (c) median (d) all of the above
19. Which of the following measures is influenced by extreme values?
 (a) mode (b) mean
 (c) median (d) all of the above
20. The need of covering letter is associated with:
 (a) coast study (b) observation
 (c) interview (d) questionnaire

Answer:

1. (c)	2. (b)	3. (c)	4. (c)	5. (d)	6. (a)	7. (b)	8. (a)	9. (a)	10. (c)
11 (d)	12 (a)	13 (a)	14. (b)	15. (b)	16. (a)	17. (a)	18. (c)	19. (b)	20. (d)

21. Define objectivity.

Ans. Sociologist argues that "the belief in objectivity is a faith in 'facts, distrust in 'values,' and a commitment to their segregation." It refers to the prevailing ideology of newsgathering and reporting that emphasizes eyewitness accounts of events, corroboration of facts with multiple sources and balance of viewpoints.

22. What is naturalism?

Ans. **Naturalism** is the idea or belief that only natural (as opposed to supernatural or spiritual) laws and forces operate in the world and the idea or belief that nothing exists beyond the natural world. Natural laws are those we live with daily, e.g., it gets dark at night. Natural laws, arguably, also include the laws of modern science, e.g., those describing electrons, black holes, DNA, and the like. The strict naturalist believes that there are no supernatural agents or events, i.e., that there are only natural objects and events.

23. Write two limitations of secondary sources of data.

Ans. 1. Data may be out of date.
2. Data may be incomplete.
3. The format may be incompatible for internal examination.
4. Accuracy of secondary data is unknown.

24. How are quantitative data obtained?

Ans. Primary data can be obtained through questionnaire. Secondary data can be obtained through existing research, library searcher of statistical data.

25. Write two characteristics of a testable hypothesis.

Ans.: 1. **Hypothesis must be conceptually clear**
2. Hypothesis should have empirical referents.
3. Hypothesis must be specific.
4. Hypothesis should be related to available techniques of research.

26. What is follow-up letter?

Ans. A letter sent to someone who has made an inquiry about the questionnaire sent by the researcher so that the respondent can fill the questionnaire completely and accurately. This procedure may be expensive and time consuming.

27. Differentiate between structured and unstructured interview.

Ans. Structured interview – Involves the use of set of predetermined question and of highly standardized techniques of recording. Unstructured interviews are characterized by flexibility of approach to questioning.

28. Name any two types of samples, which are not based on random sampling procedure.

Ans. 1. **Accidental, Haphazard or Convenience Sampling**
2. Purposive sampling

3. Modal Instance Sampling
4. Expert Sampling
5. Quota Sampling
6. Non proportional quota sampling
 - Heterogeneity Sampling
 - Snowball Sampling

29. Define variable.

Ans. A *variable* is *any entity that can take on different values*. OK, so what does that mean? Anything that can vary can be considered a variable. For instance, *age* can be considered a variable because age can take different values for different people or for the same person at different times. Similarly, *country* can be considered a variable because a person's country can be assigned a value.

30. What is contingency table?

Ans.: A **contingency table** is a table of counts. A two-dimensional contingency table is formed by classifying subjects by two variables. One variable determines the row categories; the other variable defines the column categories. The combinations of row and column categories are called *cells*. Examples include classifying subjects by sex (male/female) and smoking status (current/former/never) or by "type of prenatal care" and "whether the birth required a neonatal ICU" (yes/no).

DESCRIPTIVE TYPE QUESTION

Attempt three questions, selecting at least one question from each section.

All question carry equal marks.

Time: Two Hour

Max. Marks. 60

Notes:

- (i) No supplementary answer-book will be given to any candidate. Hence the candidates should write the answer precisely in the main answer-book only.
- (ii) All the parts of one question should be answered at one place in the answer-book. One complete question should not be answered at different places in the answer-book.

Section-A

- 1. What is social survey? How is social survey different from social research? Discuss.
(Refer Page No.- 11)
- 2. Delineate the importance of hypothesis in social research. Describe the types of hypothesis.
(Refer Page No. 14 and 15)

Section-B

- 3. Describe in detail any one technique of data collection uses in social survey.
(Refer Page No. 16, 17, 18 & 19)
- 4. What are the salient features of a good sample? How are the units sampled when the population is heterogeneous and geographically dispersed? Explain.
(Refer Page No. 23, 24& 25)

Section- C

- 5. Write short notes on:
(a) Tabulation ((Refer Page No. 28)

- (b) Types of average (Refer Page No. 30, 31)
6. Calculate mean, median and mode for the distribution given below and write one line about the shape of distribution given below and write one line about the shape of distribution viewing of mean, median and mode :
- 7, 5, 1, 5, 3, 9, 7, 5, 3 (Refer Ques. 6 of Page No. 34)



B.A. (Part II) EXAMINATION

(10+2+3 Pattern)

(Faculty of Arts)

[Also common with subsidiary Paper of B.A. (Hons.) Part-II]

(Three Year Scheme of 10+2+3 Pattern)

Sociology

FIRST PAPER : Survey Methods In Social Investigation

Year-2011

Time : Three Hours

Max. Marks.:100

Answers of all the questions (objective as well as descriptive) are to be given in the main answer book only. Answers of objective type questions must be given in sequential order. Similarly all the parts of one question of descriptive part should be answered at one place in the answer book. One complete question should not be answered at different places in the answer book.

No supplementary answer book will be given to any candidate. Hence the candidates should write their answers precisely.

PART-I, OBJECTIVE

Maximum Marks: 40

Question Nos. 1-20 (Each question carries 1 mark). Question Nos. 21-30 (Each question carries 2 marks). Give the answers of these questions in not more than 15-20 each.

1. Survey is:
 - (a) a philosophy of research
 - (b) a technique of data collection
 - (c) a method of research
 - (d) all of the above
2. Social survey is not done, when:
 - (a) the goal of survey is to gain knowledge for the sake of knowledge

- (b) population is scattered over a large geographical area
 - (c) sampling is impossible
 - (d) the goal of research is to seek solution of some problem
3. The goal of social research is not:
- (a) exploration
 - (b) description
 - (c) explanation
 - (d) application
4. Which of the following has no place in scientific method?
- (a) Observation
 - (b) Facts
 - (c) Value Judgment
 - (d) General laws
5. The use of census report by a research student is an example of:
- (a) Primary source
 - (b) Secondary source
 - (c) Tertiary source
 - (d) All of the above
6. Which of the following is not a type of hypothesis?
- (a) Dichotomus hypothesis
 - (b) Complex hypothesis
 - (c) Null hypothesis
 - (d) Alternative hypothesis
7. Which of the following is not a technique of data collection?
- (a) Observation
 - (b) Survey
 - (c) Questionnaire
 - (d) Interview
8. Follow-up letter is part of:
- (a) interview
 - (b) observation
 - (c) schedule
 - (d) questionnaire
9. When in interview, an interview schedule is used by an interviewer, it is known as:
- (a) intensive interview
 - (b) qualitative interview
 - (c) structure interview
 - (d) unstructured interview

10. Which of the following is not true the case study?
- (a) It is detailed study of one
 - (b) It is holistic study of one
 - (c) It is useful in preliminary investigations
 - (d) It is useful in testing a hypothesis
11. Sampling frame is:
- (a) A list of units in population
 - (b) a list of selected units in a study
 - (c) a list of units who did not participate in study
 - (d) a list of units who were not included in study
12. Which of the following is not type of non-probability sample?
- (a) Convenience sample
 - (b) Snowball sample
 - (c) Systematic sample
 - (d) Haphazard sample
13. Snowball sampling is used:
- (a) When population is large
 - (b) when population is scattered
 - (c) when it is difficult to interview units
 - (d) when it is difficult to locate units
14. Tabulation is a part of:
- (a) data analysis
 - (b) data processing
 - (c) data collection
 - (d) data integration
15. a dummy table is:
- (a) a table without categories
 - (b) a table without body
 - (c) a table without cells
 - (d) a table without frequencies
16. Average are used for:
- (a) descriptive analysis
 - (b) Association Analysis
 - (c) inferential analysis
 - (d) all of the above
17. Mean = 18, median = 15 and mode = 12 would mean:
- (a) a bimodal distribution
 - (b) a normal distribution
 - (c) a positively skewed distribution
 - (d) a negatively skewed distribution

18. A given data distribution may not have:
(a) the mean (b) the median
(c) the mode (d) all of the above
19. The sum of deviations taken from mean will always be:
(a) a minimum value
(b) the maximum value
(c) zero
(d) equal to mean
20. Whose book has not been recommended in the syllabus?
(a) P.V. Young (b) C.A. Moser
(c) Alan Bryman (d) E.R. Babbie
21. Define Objectively.
22. What are two important goals of scientific method?
23. Write the meaning of social data.
24. Give an example of bivariate hypothesis.
25. What is interview guide?
26. What is sampling fraction?
27. Write two advantages and two limitations of observation.
28. Mention two conditions when median is a preferable measure of central tendency.
29. What is the meaning of 2x 2 table?
30. Write the names of books on research methods written by P.V. Young and goode and Hatt.

Part II

Descriptive Questions

Time: 2 Hours

M.M.: 60

Attempt three questions, selecting one question from each Section. All questions carry equal marks.

Section-A

1. Define scientific method. Delineate characteristics and limitations of scientific method.
2. What are the types of data? What are the advantages and limitations of secondary sources? Describe.

Section-B

3. Describe the rule of questionnaire construction. Differentiate between Questionnaire and schedule.
4. What are the salient features of participant observation? How are observation recorded? Discuss.

Section-C

5. Write short notes on:
 - (a) Parts of table;
 - (b) Averages
6. Calculate mean and median:

Age Group	Frequency
28-30	14
25-27	11
22-24	16
19-21	9
16-18	5

B.A. (Part II) EXAMINATION

(10+2+3 Pattern)

(Faculty of Arts)

[Also common with subsidiary Paper of B.A. (Hons.) Part-II]

(Three Year Scheme of 10+2+3 Pattern)

Sociology

FIRST PAPER : Survey Methods In Social Investigation

Year-2009

Time : Three Hours

Max. Marks.:100

Question Nos. 1-20 (Each question carries 1 mark). Write the correct Serial No. of answer in the bracket given at the end of each question. Question Nos. 21-30 (Each questions carries 2 marks). Give the answers of these questions in not more than 15-20 words each.

1. Survey is:
 - (a) a theory
 - (b) a method
 - (c) a technique
 - (d) all of above
2. Follow up letter used in:
 - (c) Case study
 - (d) Interview
 - (c) Schedule
 - (d) Questionnaire
3. Sampling frame is a list of:
 - (a) sample units
 - (b) population units
 - (c) types of sample
 - (d) sampling errors
4. N/n formula is used to determine:

- (a) Sample size
 - (b) sampling fraction
 - (c) sampling error
 - (d) Weighted sample
5. Snowball sample is:
- (a) a type of probability sample
 - (b) a type of random sample
 - (c) a type of non-probability sample
 - (d) not a type of sample
6. The author of the book survey methods in social investigation is:
- (a) P.V. Young
 - (b) E.R. Babbie
 - (c) K.D. Bailey
 - (d) C.A. Moser
7. When calculated values of mean, median and mode are equal, the distribution is known as:
- (a) Asymmetrical
 - (b) Skewed
 - (c) Bimodal
 - (d) Symmetrical
8. A given distribution of quantities may not have:
- (a) Mean
 - (b) Median
 - (c) Mode
 - (d) All of above
9. Which of the following is not a formula for calculating mean:

(a) $\bar{X} = \frac{\sum x}{N}$

(b) $\bar{X} = \frac{\sum f}{N}$

(a) $\bar{X} = \frac{\sum fx}{N}$

$$(d) \quad \bar{X} = \frac{\sum Xf}{N}$$

10. Average are also known as:
- (a) Central tendency
 - (b) Proportion
 - (c) Percentages
 - (d) Fractions
11. Social research is not the search for answer to:
- (a) Factual question
 - (b) Comparative Question
 - (c) Cognitive Questions
 - (d) Explanatory Questions
12. Which of the following is not an essential feature of social survey:
- (a) Measurement
 - (b) Sampling
 - (c) codifiable data
 - (d) Case analysis
13. The correct sequence of the following research steps is:
- (a) Research design, data collections, data processing and data analysis
 - (b) Research design, data processing, data collection and data analysis
 - (c) Research design, data analysis, data collection and data processing
 - (d) Data Collection, data processing, data analysis and research design
14. "Science, Commerce and Arts student do not differ with regard to their deviant acts" is an example of:
- (a) Univariate
 - (b) Bivariate hypothesis
 - (c) Trivariate hypothesis
 - (d) Multivariate hypothesis
15. Tertiary data are:
- (a) Generated by the researcher
 - (b) Generated by a person other than the researcher
 - (c) Analysed by a person other than the researcher
 - (d) not used in social research
16. The research questions, which elicit information directly related to the research topic are known as:
- (a) Primary questions
 - (b) Secondary question
 - (c) Tertiary questions
 - (d) Irrelevant questions

17. Which of the following is not a personnel observation:
 - (a) Personnel and non-personal observation
 - (b) Participant and non participant observation
 - (c) Structured and unstructured observation
 - (d) Direct and indirect observation
18. Panel interview is one in which researcher studies:
 - (a) One selected group at one point of time
 - (b) Different groups at one point of time
 - (c) Different groups at one point times
 - (d) Same groups of respondents over different times
19. Tabulation is not helpful in:
 - (a) Presentation of data
 - (b) Collection of data
 - (c) Knowing distribution of data
 - (d) Statistical analysis of data
20. Which of the following is not an essential part of a table?
 - (a) Heading of the table
 - (b) Variable categories
 - (c) Cell frequencies
 - (d) Total
21. What is interview guide?
22. Name any two types of non-probability samples.
23. Write the formula of calculating median in discrete series.
24. Give any one mathematical characteristic of mean.
25. Mention any two uses of bivariate tables.
26. Define data.
27. Give one example of closed question.
28. Define Science.
29. Write two limitations of scientific method.
30. Give one example of multivariate hypothesis.

Descriptive Question**Time: 2 Hours****M.M. 60**

Attempt three questions, selecting at least one question from each Section. All questions carry equal marks.

No supplementary answer book will be given to any candidates. Hence the candidates should write the answer precisely in the Main answer book only.

All the part of one question should be answered at one place in the answered book. One complete question should not be answered at different places in the answered book.

Section-A

1. Define social research. Describe the importance of hypothesis in social research.
2. Discuss in brief the forms and sources and data used on social research.

Section-B

3. Write short notes on any two of the following
 - (i) Observation
 - (ii) Interview
 - (iii) Case study
4. Discuss in brief the types of probability samples

Section-C

5. Write an essay on tabular presentation of data.
6. Compare mean, median and mode.

(10+2+3 Pattern)

(Faculty of

Arts)

[Also common with subsidiary Paper of B.A. (Hons.) Part-II]

(Three Year Scheme of 10+2+3 Pattern)

Sociology**FIRST PAPER : Survey Methods In Social Investigation****Year-2008***Time : Three Hours**Max. Marks.:100*

Question Nos. 1-20 (Each question carries 1 mark). Write the correct Serial No. of answer in the bracket given at the end of each question. Question Nos. 21-30 (Each questions carries 2 marks). Give the answers of these questions in not more than 15-20 words each.

1. In Tippet method how many four digit number list is three
 - (a) 10200
 - (b) 10400
 - (c) 10600
 - (d) 10800
2. What is done after data collection in Social Research:
 - (e) Determination of units
 - (f) Formulation of hypothesis
 - (c) Classification
 - (d) Pilot Study
3. Science starts from:
 - (a) Observation
 - (b) Schedule
 - (c) Questionnaire
 - (d) Structured interview
4. Who has given this definition "A sampling is a smaller representation of larger whole:
 - (a) Goode and Hatt

- (b) C.A. Moser
 - (c) P.V. Young
 - (d) Bogardus
5. Which of the following is selected by Grid method of sampling
- (a) Economic area
 - (b) Political area
 - (c) Social area
 - (d) Geographical area
6. Schedule is formulated by:
- (a) Respondent
 - (b) Researcher
 - (c) lecturer
 - (d) Government
7. Which of the following sources is life history in data collection?
- (a) Primary
 - (b) Secondary
 - (c) Both primary and secondary
 - (d) Neither primary nor secondary
8. Which of the following is the relationship among mean, median and mode:
- (a) $\text{Mode} = 3 \text{ Median} - 2 \text{ Mean}$
 - (b) $\text{Mode} = 2 \text{ Median} - 3 \text{ Mean}$
 - (c) $\text{Mode} = 4 \text{ Median} - 2 \text{ Mean}$
 - (d) $\text{Mode} = 2 \text{ Median} - 2 \text{ Mean}$
9. When researcher himself becomes a part of the study group the method is known as:
- (a) Observation
 - (b) Controlled observation
 - (b) Participant
 - (d) Unstructured interview
10. Which one of the following called discrete series:
- (a) 0-10, 10-20, 20-30, 30-40
 - (b) 3-5, 6-8, 9-11, 12-14
 - (c) 2-4, 4-6, 6-8, 8-10
 - (d) 1,2,3,4,5,6
11. Which of interview method was firstly used by R.K. Marton:
- (a) Repetitive interview
 - (b) Focused Interview

- (c) Interview
 - (d) Unstructured interview
12. Which of the following statement is false:
- (a) Goode and Hatt have given three types of Hypothesis
 - (b) In observation method ears are more used than eyes
 - (c) Questionnaire is used only for literate respondents
 - (d) Social research studies What is;
13. The author of the book scientific social survey and research is:
- (a) Goode and Hatt
 - (b) C.a. Moser
 - (c) Bogardus
 - (d) P.V. Young
14. Characteristic of scientific method is:
- (a) Objectivity
 - (b) Subjectivity
 - (c) Hypothetical
 - (d) None of the above
15. Which method can be used for the study of single social unit:
- (a) Interview method
 - (b) Random sampling method
 - (c) Case study method
 - (d) Survey method
16. Social research is not concerned with:
- (a) Exploratory questions
 - (b) Explanatory question
 - (c) Evaluative question
 - (d) Ethical question
17. Which of the following is not an objective of social research:
- (a) to explain problem
 - (b) to explore problem
 - (c) To describe problem
 - (d) to solve problem
18. A good average is one which is:
- (a) Based on all the observation in the distribution
 - (b) Not affected by the size of sample
 - (c) Not affected by extreme values
 - (d) characterized by all above characteristics
19. Which of the following is not a direct sources of data collection:

- (a) Observation
 - (b) Questionnaire
 - (c) Interview
 - (d) Schedule
20. When conclusions are drawn out on the basis of only one survey, it is:
- (a) Pilot survey
 - (b) Repetitive survey
 - (c) Last survey
 - (d) None of the above
21. Write two characteristics of a testable hypothesis
22. How is census method different from sampling method?
23. How is interval determined in regular interval method of random sampling?
24. Name any two parts of case studies.
25. Write any two characteristics of scientific method.
26. What is interview guide?
27. What is quasi participant observation?
28. Write any two differences between participant and non participant observation.
29. Write four qualities of a good interviewer.
30. Write formula of calculating mean from continuous series.

Descriptive Question

Time: 2 Hours

M.M. 60

Attempt three questions, selecting at least one question from each Section. All questions carry equal marks.

Section-A

1. What do you mean by social survey? Differentiate between social research and social survey.
2. What is primary data? Explain the sources of secondary data.

Section-B

3. Give the meaning of questionnaire. Write the points of differences between questionnaire and schedule.
4. What do you mean by sample? Explain the merits and demerits of Random sample.

Section-C

5. Discuss different types of tabulation. Also explain its advantages and limitations.
6. From the following distribution of marks. Obtained by 100 students, locate and Median and Mode.

Marks	No. of Students
0-10	8
10-20	30
20-30	40
30-40	12
40-50	10

B.A. (Part II) EXAMINATION

(10+2+3 Pattern)

(Faculty of Arts)

[Also common with subsidiary Paper of B.A. (Hons.) Part-II]

(Three Year Scheme of 10+2+3 Pattern)

Sociology

FIRST PAPER : Survey Methods IN Social Investigation

Year-2007

Time : Three Hours

Max. Marks.:100

Question Nos. 1-20 (Each question carries 1 mark). Write the correct Serial No. of answer in the bracket given at the end of each question. Question Nos. 21-30 (Each questions carries 2 marks). Give the answers of these questions in not more than 15-20 words each.

1. Hypothesis is:
 - (a) always accepted
 - (b) always rejected
 - (c) either accepted or rejected
 - (d) None of the above
2. It is possible to conduct social research without a sample:
 - (a) True
 - (b) False
3. Contingency table is not:
 - (a) Univariate table
 - (b) Bivariate table
 - (c) Complex table
 - (d) Multivariate table
4. The author of the book "Survey Method in Social Investigation is:
 - (a) Goode and Hatt
 - (b) P.V. Young
 - (c) C.A. Moser and Kalton
 - (d) Ram Ahuja
5. Hypothesis is not a/an:
 - (a) Tentative statement

- (b) Relational statement
 - (c) Explanatory statement
 - (d) Verified statement
6. The rate of response is high in:
- (a) Questionnaire
 - (b) In both questionnarire and schedule
 - (c) Schedule
7. Sampling frame is a:
- (a) List of serial number
 - (b) List of selected units
 - (c) List of not selected units
 - (d) List of population units
8. The value of mean, median and mode can never be same in a given distribution:
- (a) True
 - (b) False
9. Empirical research is based on:
- (a) Primary Sources
 - (b) Secondary Sources
 - (c) Historical Source
 - (d) All of above
10. A sociologist asking drug-addicts about the types of drugs they take is a:
- (a) Filter question
 - (b) Contingent Question
 - (c) closed question
 - (d) None of the above
11. The most appropriate technique of collecting information from a large illiterate populating is:
- (a) Questionnaire
 - (b) Schedule
 - (c) Interview
 - (d) Observation
12. There shall always be mean, median and mode values in a given distribution:

- (a) True
 - (b) False
13. $\frac{\sum fx}{\sum f}$ is the formula for:
- (a) Mean
 - (b) Median
 - (c) Mode
14. Which of the following sequential relation of mean, median and mode is incorrect:
- (a) Mode, median, mean
 - (b) Mean, median, Mode
 - (c) Mean, Mode, Median
15. Data analysis is desirable without data processing:
- (a) True
 - (b) False
16. Which of the following sample types is not based on random sampling process
- (a) Stratified sample
 - (b) Systematic sample
 - (c) Quota
 - (d) Area sample
17. Larger the size of sample, less biased would be the research, more authentic would be the findings is a :
- (a) Null hypothesis
 - (b) Null and non-directional hypothesis
 - (c) Research hypothesis
 - (d) Research and directional hypothesis
18. Social research is not:
- (a) Positivistic
 - (b) Non-positivistic
 - (c) Objective
 - (d) Empirical
19. The most appropriate technique for conducting social survey is:
- (a) Observation
 - (b) Questionnaire
 - (c) Case study

- (d) Interview schedule
20. Closed questions are framed in:
- (a) Questionnaire
 - (b) Schedule
 - (c) Questionnaire and schedule
 - (d) Neither in questionnaire nor in schedule
21. Why do sociologists need to use secondary sources? Give two reason.
22. What is the difference between a method and a technique?
23. Write formula of calculating mean and median in exclusive series.
24. Write two characteristics of a good researcher.
25. Write two multivariate hypotheses.
26. Give two examples of social surveys conducted by Indian Government administration.
27. What do you mean by a simple table?
28. Write names of two recommended in you syllabus for studying
29. What is census method?
30. Give two limitations of scientific method.

Descriptive Question

Time: 2 Hours

M.M. 60

Attempt three questions, selecting at least one question from each Section. All questions carry equal marks.

Section-A

7. What is social research? How is sociological research scientific in nature? Explain.
8. What are the various types and sources of hypothesis? Describe.

Section-B

9. Discuss in detail any one technique of data collection.
10. What are the characteristics of a good sample? Explain the process of selecting units in stratified sample.

Section-C

11. What are the various parts of table? Frame a multivariate table using hypothetical data.

Write an essay on the utility of average in social research.

Essential Readings

Research methodology :C.S khotari

ESSENTIAL READINGS:

A.R.Desai 1959 Rural Sociology India, Popular Prakashan, Bombay.

Rao M.S.A. 1974 Urban sociology in India, Orient Longman, New Delhi.

A.R.Desai 1979 Rural India in Transition, Popular Prakashan, Bombay.

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Alfred D' souza 1978 The Indian City; Poverty , Ecology and Urban development,
Manohar, New Delhi.

Ramakrishna Mukarjee The dynamics of rural society, Berlin A C. Mukherjee 1957

