





## Part A: Statistics for Economics

### Chapter 2 : Collection of Data

Q. NO	QUESTION	MARKS
1	What do you mean by Statistical Enquiry?	1
2	What do you mean by 'Data'?	1
3	If it is desired to conduct an enquiry into the age group of employees in a company and if such information is collected by the investigator from the workers themselves, then such data would be termed as .....	1
4	What is the difference between Questionnaire and the Schedule?	1
5	Why was Census 2021 postponed?	1
6	Write the formula of Absolute Error and Relative Error.	1
7	If a weighing machine states your weight as 75 kg, but you know that true weight is 74.5 kg, then the weighing machine has.....	1
8	Every unit of the population is investigated in a sample survey. (True / False)	1
9	<p>Alternatives:</p> <p>I. Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).</p> <p>II. Both Assertion (A) and Reason (R) are true and Reason is not the correct explanation of Assertion (A).</p> <p>III. Assertion (A) is true but Reason (R) is false.</p> <p>IV. Assertion (A) is false but Reason (R) is true.</p> <p>Assertion (A): Primary data is original.</p> <p>Reason (R): Primary data is collected by the investigator himself.</p>	1
10	State the demerits of primary data.	1
11	<p>KVS submits data on the number of students from different social categories studying in all KVs in the country to the Ministry of Education.</p> <p>Q-State whether the data so collected by the KVS is primary data or secondary data.</p>	1
12	<p>Q-Data collected by a student from the <b>government journals</b> to prepare a project report is a</p> <p>(a)primary data</p> <p>(b)secondary data</p> <p>(c)census data</p> <p>(d)none</p>	1
13	<p><b>India TV-CNX Opinion Poll:</b></p> <p>KCR-led BRS is likely to win most of the seats in Telangana, however it is expected to face a tough BJP challenge as the saffron party is predicted to gain some seats in the southern state.</p> <p>Q-The findings of the Opinion Polls of Various News Channels are based on</p> <p>(a)secondary data (c)census data (d)sample data (d)none</p>	1

14	 <p>Since its inception in 1970s, the NSSO has been conducting surveys on different socio-economic subjects and publishing in its quarterly journal <i>SARVEKSHANA</i>. It also compiles data for preparation of CPI and undertakes field works for Annual survey of industries and crop estimation which are useful for formulation of govt policies.</p> <p>Q-What kind of information is collected by the NSSO?</p>	1
15	<p>Assertion(A): Sample method of investigation is economical. Reason(R): Random sampling allows every item an equal probability of being selected.</p> <p>Q-Choose the correct alternative</p> <p>(i) A is true but R is false (ii) A is false but R is true (iii) A and R are true but R isn't the correct explanation of A (iv) A and R are true and R is the correct explanation of A</p>	1
16	<p>Q-Frame a two-way question relating to a questionnaire that you intend to design relating to your investigation on techniques of irrigation adopted by the farmers of your locality.</p>	1
17	<p>From the image show the sampling method.</p> 	1
18	<p>You are studying in a school which is nearly 200 kms away from your home town. As a student you are keen to collect statistical information relating to per capita income in your town. Which mode of data collection will you prefer to adopt? Support your answer with reason.</p>	1
19	<p>Q-In a village of 200 firms, a study was conducted to find the cropping pattern. Out of 75 firms surveyed it was found that only 50% grew rice. Identify the population and sample here.</p>	1
20	<p>A survey was conducted on measuring average height of the population. Certain sample size was selected in the survey. But there arises a difference between the true value and estimated value of the parameter and the sample.</p> <p>Q-What kind of statistical error is this?</p>	1
21	<p>“After many fluctuations the output of food grains rose to 132 million tonnes in 1978-79 from 108 million tonnes in 1979-80. Production of food grains then rose continuously to 252 million tonnes in 2015-16 and touched 272 million tonnes in 2016-17.”</p> <p>In this above statement, the food grain production in different years is not the same.”</p>	1

	Which type of data value is this ?	
<b>22</b>	A manager of a factory needs to study the socio –economic condition of workers of the factory . The trade union leader of the factory has already conducted a similar study. What values do you suggest to the manager of this factory to consider if this depends on the data collected by the trade union leader ?	<b>1</b>
<b>23</b>	“If you know about the popularity of a film star among school students, for this, you will have to enquire from a large number of students by asking questions from them to collect the desired information.” Which type of data is this?	<b>1</b>
<b>24</b>	“If a data regarding popularity of a film star is published in a report, any person uses this information.” Which type of data is this?	<b>1</b>
<b>25</b>	“The question should not be a leading question in a questionnaire, which gives a clue about how the respondent should answer.” Give an example.	<b>1</b>
<b>26</b>	Open-ended questions allow the more individualised responses, but they are difficult to interpret.” Give an example of an open ended question.	<b>1</b>
<b>27</b>	“close-ended questions are easy to use, score and codify for analysis, because all respondents can choose from the given options.” Give an example of a close-ended question.	<b>1</b>
<b>28</b>	“Once the questionnaire is ready it needs a pre-testing of the questionnaire.” What step is this called?	<b>1</b>
<b>29</b>	" The sex ratio of India ,as per the census conducted in 2011 was 940." What does this tell you about Indian society ?	<b>1</b>
<b>30</b>	Mr. Ramesh has prepared a questionnaire to study social phenomena of people in a society . A question set by him in the questionnaire asks about the religion of the respondents and also wants them to comment on other religions . Is it ethically right to design such a question ?	<b>1</b>
<b>31</b>	Read the following statements carefully and choose the correct alternatives given below: Statement 1 – Primary data are original in character.  Statement 2 – Data are collected by the investigator for his own purpose for the first time. Alternatives: a. Both statements are true. b. Both statements are false. c. Statement 1 is true and Statement 2 is false. d. Statement 2 is true and Statement 1 is false.	<b>1</b>
<b>32</b>	Read the following statements - Assertion (A) and Reason (R): Assertion (A) – Direct personal investigation is suitable when area of enquiry is limited and direct contact with the informants is necessary. Reason(R) – Direct personal investigation method is elastic as the investigator can adjust the question and language of communication. From the given alternatives choose the correct one: a. Both Assertion (A) and Reason (R) is true but Reason (R) is the correct explanation of Assertion (A)	<b>1</b>

	<p>b. Both Assertion (A) and Reason (R) is true but Reason (R) is not the correct explanation of Assertion (A)</p> <p>c. Assertion (A) is true but Reason (R) is false.</p> <p>d. Assertion (A) is false but Reason (R) is true.</p>											
<b>33</b>	<p>Identify the correct sequence of alternatives given in Column II by matching them with respective terms in Column I:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Column I</th> <th style="width: 50%;">Column II</th> </tr> </thead> <tbody> <tr> <td>A. Census method</td> <td>i. Totality of items under study</td> </tr> <tr> <td>B. Sample</td> <td>ii. Extensive study of diverse items</td> </tr> <tr> <td>C. Questionnaire</td> <td>iii. A smaller group selected from the universe</td> </tr> <tr> <td>D. Population</td> <td>iv. A list of questions pertaining to the investigation</td> </tr> </tbody> </table> <p>a. A-i, B-ii, C-iv, D-iii  b. A-ii, B-iii, C-iv, D-i  c. A-iii, B-iv, C-i, D-ii  d. A-iii, B-ii, C-i, D-iv</p>	Column I	Column II	A. Census method	i. Totality of items under study	B. Sample	ii. Extensive study of diverse items	C. Questionnaire	iii. A smaller group selected from the universe	D. Population	iv. A list of questions pertaining to the investigation	<b>1</b>
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<b>34</b>	<p>There are two statements given below, marked as Assertion (A) and Reason (R). Read the statements and choose the correct option.</p> <p>Assertion (A): Enumerator is a person who helps the investigator in collecting data.</p> <p>Reason (R): Investigator is a person who answers to the set of questions included in the questionnaire.</p> <p>From the given alternatives choose the correct one:</p> <p>a. Both Assertion (A) and Reason (R) is true but Reason (R) is the correct explanation of Assertion (A)</p> <p>b. Both Assertion (A) and Reason (R) is true but Reason (R) is not the correct explanation of Assertion (A).</p> <p>c. Assertion (A) is true but Reason (R) is false.</p> <p>d. Assertion (A) is false but Reason (R) is true.</p>	<b>1</b>										
<b>35</b>	<p>Fill in the blank with the correct alternative.</p> <p>Schedules and Questionnaires are a list of questions related to purpose of investigation. However, while questionnaires are filled by _____(investigator/respondent/enumerator), Schedules on the other hand are filled by _____</p> <p>(Investigator/ Respondent/ Enumerator)</p>	<b>1</b>										

<b>36</b>	An investigator has collected the required information by personal interview from the relatives of the unit of population. Identify the type of data and the method of data collection used.	<b>1</b>										
<b>37</b>	Fill in the blanks with suitable terms given in the bracket: While Census of India uses _____(Enumeration/ Estimation) method of data collection, NSSO is based on _____(Enumeration/ Estimation) method.	<b>1</b>										
<b>38</b>	There are two statements given below, marked as Assertion (A) and Reason (R). Read the statements and choose the correct option. Assertion(A): When items in population are diverse and complex, census method is suitable and will give desired results.  Reason (R): Census method cannot be adopted if the population is infinite. a. Both Assertion (A) and Reason (R) is true but Reason (R) is the correct explanation of Assertion (A) b. Both Assertion (A) and Reason (R) is true but Reason (R) is not the correct explanation of Assertion (A). c. Assertion (A) is true but Reason (R) is false. d. Assertion (A) is false but Reason (R) is true	<b>1</b>										
<b>39</b>	From the set of statements given in Column I and Column II, choose the correct pair of statements: <table border="1" data-bbox="337 1066 976 1388"> <thead> <tr> <th>Column I</th> <th>Column II</th> </tr> </thead> <tbody> <tr> <td>A. Primary data</td> <td>i. Collection of data from some agency</td> </tr> <tr> <td>B. Secondary data</td> <td>ii. First -hand data</td> </tr> <tr> <td>C. Random sampling</td> <td>iii. Each &amp;every unit of population has equal probability of getting selected</td> </tr> <tr> <td>D. Systematic Sampling</td> <td>Diverse characteristic of the population</td> </tr> </tbody> </table> Options: a) A-i b) B-ii c) C-iii d) D-iv	Column I	Column II	A. Primary data	i. Collection of data from some agency	B. Secondary data	ii. First -hand data	C. Random sampling	iii. Each &every unit of population has equal probability of getting selected	D. Systematic Sampling	Diverse characteristic of the population	<b>1</b>
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<b>40</b>	There are two statements given below marked as Assertion (A) and Reason (R). Read the statements and choose the correct option. Assertion (A): Sample method of investigation is economical. Reason (R): In sampling method only limited number of items are investigated. a. Both Assertion (A) and Reason (R) is true but Reason (R) is the correct explanation of Assertion (A) b. Both Assertion (A) and Reason (R) is true but Reason (R) is not the correct explanation of Assertion (A). c. Assertion (A) is true but Reason (R) is false.	<b>1</b>										

	d. Assertion (A) is false but Reason (R) is false.	
41	Q-Give examples of at least three cases where pilot survey is required.	3
42	While framing a questionnaire, what type of questions should be included?	3
43	The Ministry of Education is interested in determining the level of education of unmarried girls in the country. How would you organise a survey for this purpose?	3
44	“The method is used when the researcher has access to all the members. The researcher conducts face to face interviews with the respondents. Personal interviews are preferred due to various reasons. Personal contact is made between the respondent and interviewer. The interviewer has the opportunity of explaining the study and answering the queries of respondents.” Tell any three demerits of this method.	3
45	“A survey, which includes every element of the population, is known as Census or the Method of Complete Enumeration. If certain agencies are interested in studying the total population in India, they have to obtain information from households in rural and urban India. It is carried out every ten years. A house to house enquiry is carried out, covering all households in India. Demographic data on birth and death rates, literacy, employment, life expectancy, size and composition of population,” Explain any three qualities of this method with the name of this method.	3
46	You would have seen the television coverage on exit polls before the results of Lok Sabha election in 2014. Which sampling technique is used in such cases and how does it work ?	3
47	An investigator has collected the required information by personal interview with the informant. What type of data will it be called? Mention its two features.	3
48	What will be kind of data published by the railway department regarding the progress of railway, for an investigator? Mention its two features.	3
49	Do samples provide better results than surveys? Give reasons for your answer.	3
50	Write the three differences between Primary Data and Secondary Data.	3
51	Give two examples each of sample, population and variable.	3
52	Define the terms: (a) Investigator (b) Enumerator (c) Respondent	3
53	Write the methods of collecting Primary Data. Explain in brief.	4
54	What are the limitations of Secondary data?	4
55	Write the brief notes on National Sample Survey Organization.	4
56	In School quiz competition, 200 students filled the form. 30 students are to be selected for competition. It has been clearly specified that out of 30, 20 seats are reserved for general category students, 3 seats for students belonging to SC/ST category and remaining are of students belong to OBC category Which sampling technique according to you would be most suitable? Interpret any three features.	4
57	There is a debate competition in your school. Being School Captain, you have been entrusted with the responsibility of selecting the best orator from Class XI for the same. Identify the sampling technique that you would use for this purpose. Critically analyse any three merits	4
58	In this method, there exists a direct contact between investigator and units of population. Identify the method. When will it be suitable?	4

59	<p>“Do you know how a manufacturer decides about a product or how a political party decides about a candidate? They conduct a survey by asking questions or candidates from a large group of people. The purpose of surveys is to describe some characteristics like price, quality, usefulness and popularity etc. The most common type of instrument used in surveys is questionnaire/interview schedule. You must keep some points while making a questionnaire.” Write four points while making a questionnaire.</p>	4
60	<p>“ The first task in selecting a sample is to identify the population. Once the population is identified, the researcher selects a method of studying it. If the researcher finds that a survey of the whole population is not possible, then he or she selects a representative sample. A sample is representative of a group or section of the population.” What are the good qualities of the sample.</p>	4
61	<p>Unpublished data or literature is known as grey literature in research. (The term ‘grey literature’ also includes data published in a non-commercial form, such as a conference proceeding.) These data are collected by the Government organisations and others, generally for their self-use or office record. Unpublished data is useful mainly in secondary research , such as literature reviews and systematic reviews. It provides pointers to new research and perhaps also research paths to avoid. Preprints are a growing form of unpublished data these days and have proved very useful in guiding research in critical areas such as Covid -19.published source of data are government publications, semi-government publications, publications of research institutions, international publications etc. (a) Data collected from unpublished/published are called_____. (b) In case of a ____answer are to be written by the enumerators specifically hired for the purpose. (c) _____publish data relating to education, health , births and death. (d) 76<sup>th</sup> round of NSSO was on_.</p>	4
62	<p>Differentiate between primary and secondary data. Illustrate your answer with example.</p>	4
63	<p>Give one example each from (a)sample (b)population (c)sampling error (d)Non-Sampling error</p>	4
64	<p>Which of the following methods give better result and why? (a)Census (b)Sample</p>	4
65	<p><b>Read the passage carefully and answer the questions on the basis of the same.</b> Questionnaire should be relevant to the survey objectives. Questionnaires therein should be arranged in smooth and logical flows to facilitate respondents recall. Wordings should be appropriate, specific and precise, avoiding leading and loaded terms or descriptions. The questionnaires should be tested on prospective respondents before they are finalized for use in surveys.Sensitive questions largely explain respondents reluctance to give truthful answers,and</p>	6

	<p>that gives rise to a major source of biased results. For questions that might elicit social disapproval, statistically sophisticated approaches such as randomized response techniques may have to be considered.</p> <p><b>Q1-While framing a questionnaire what kind of precautions are to be taken?</b></p> <p><b>Q2-What are the qualities of a good questionnaire?</b></p>	
66	<p>Q-What are the advantages and disadvantages of collecting primary data by</p> <p>(a) Personal interview</p> <p>(b) Mailing questionnaire</p>	6
67	<p>Q-Why is sample survey method preferred over census survey method? Give example where census method is inevitable and where sample methods are suitable to collect data.</p>	6
68	<p>"Stratified sampling is a sampling method using proportional representation.</p> <p>The population is divided into smaller subgroups (strata) with the number taken from each subgroup proportional to the size of the subgroup.</p> <p>The term stratification means to arrange something into groups.</p> <p>The larger the group, the more data entries will exist in the sample for that group.</p> <p>To find a stratified sample we need to know how many data entries are in each subgroup and the total sample size. Stratified sampling determines the number of items of data in each subgroup and so it requires a secondary sampling method to select the individual items of data.</p> <p>This is usually through using a simple random sampling technique (using a random number generator). This is why a stratified sample can also be called a stratified random sample"</p> <ol style="list-style-type: none"> <li>1) What is the use case of stratified sampling?</li> <li>2) Is stratified sampling independent?</li> <li>3) Write an example of a stratified random sample situation?</li> <li>4) What are the limitations of stratified sampling?</li> <li>5) Is stratified sampling non-probability sampling?</li> <li>6) Is stratified sampling method biased?</li> </ol>	6
69	<p>"As the name suggests, random sampling is one where the individual units from the population (samples) are selected at random. The government wants to determine the impact of the rise in petrol price on the household budget of a particular locality. For this, a representative sample of 30 households of that area are written on paper and mixed, then 30 names to be interviewed are selected one by one.</p> <p>In Random sampling, every individual has an equal chance of being selected. In the above example, all 300 sampling units of the population have a chance of being included in the sample of 30 units and hence the sample, such drawn, is a random sample. This is also called the lottery method."</p> <ol style="list-style-type: none"> <li>1) One of the most useful samplings is random sampling due to the?</li> </ol>	6



	<p>a) The nature is economical  b) More accurate in comparison to others  c) Free from personal biased  d) All of the above</p> <p>2) Out of these, which needs the small size sample to see its efficiency?  a) Quota sampling  b) Cluster sampling  c) Simple random sampling  d) None of the above</p> <p>3) The sampling that is based on probability, that is equal, is known as ____.</p> <p>4) The method of drawing a ____ is the fishbowl drawing.</p> <p>5) Sample is known to be the subset of?  a) Population  b) Data  c) Set  d) Information</p> <p>6) Which of these is an e example of probability sampling?  a) Lottery method  b) Quota sampling  c) Purposive sampling  d) Judgemental sampling</p>	
70	<p>Census of India is a decennial publication of the Government of India. It is published by the Registrar General and Census Commissioner, Under Ministry of Home Affairs, Government of India. It is a very comprehensive source of secondary data. It relates to population size and various aspects of demographic changes in India. Under the Ministry of Home Affairs, Government of India. It may be of historical interest that though the population census of India is a major administrative function; the Census Organisation was set up on an ad-hoc basis for each Census till the 1951 Census. The Census Act was enacted in 1948 to provide for the scheme of conducting population census with duties and responsibilities of census officers. The Government of India decided in May 1949 to initiate steps for developing systematic collection of statistics on the size of the population, its growth, etc., and established an organisation in the Ministry of Home Affairs under Registrar General and ex-Officio Census Commissioner, India.</p> <p><b>(1) Data originally collected in the process of investigation are known as _____(Primary data/ Secondary data).</b></p> <p><b>(2) Post independence, the first census of India was conducted in _____ (1949/ 1951).</b></p>	6

	<p><b>(3) Data collected on religion from census reports are:</b></p> <p>(a) Secondary data  (b) Primary data  (c) Either a and b  (d) Sample data</p> <p><b>(4) Identify the type of the following question: If plastic bags are only 5% of our garbage, should it be banned?</b></p> <p>(a) Ambiguous  (b) Leading  (c) Double negative  (d) None of the above</p> <p><b>(5) The data collected on the height of a group of students after recording their heights with measuring tape are</b></p> <p>(a) Primary data  (b) Continuous data  (c) Discrete data  (d) Secondary data</p> <p><b>(6) Direct personal investigation suffers from</b></p> <p>(a) Personal bias  (b) Excessive expenses  (c) Time consuming  (d) All the above</p>	
<b>71</b>	<p>Which of the following methods give better results and why?</p> <p>(a) Census  (b) Sample</p>	<b>6</b>
<b>72</b>	<p>As a Project Leader you have start a project work in the class. Project work is to be done in the group of five. In order to ensure inclusivity which sampling technique would you use? State its two benefits and two limitations.</p>	<b>6</b>
<b>73</b>	<p>For an Inter School Fest, you have to make an organising committee of your school consisting of total 10 students from science, commerce and humanities. There are 500 students in Class XI. Out of 500 students, 100 students are from science, 250 students belong to commerce and remaining are students from humanities.</p> <p>Answer the following questions on the basis of the information.</p>	<b>6</b>

	What is the population size and sample size? b) Identify the method of sampling that would be most suitable for the selection of organising committee? c) Define the method. d) How many students will be selected from commerce, science and humanities, as a part of organising committee? Show the calculation	
74	State merits and demerits of mailing questionnaire method of collecting data.	6
75	Give the advantages of Sample Method over Census Method.	6
76	Write the methods of collecting Secondary Data. Explain it.	6

## ANSWER

1	Statistical Enquiry refers to an investigation on a topic by any agency wherein relevant quantitative information is collected.
2	'Data' is a 'tool', which helps us to understand and analyses the problems by providing information.
3	Primary Data
4	Questionnaire is filled by the respondent, while a schedule is filled by the investigator.
5	Due to the advent of COVID -19 pandemic, Census 2021 was postponed until further orders as per Ministry of Home Affairs.
6	Absolute Error = Actual Value – Estimated Value Relative Error = (Actual Value – Estimated Value) / Estimated Value
7	Absolute Error = Actual Value – Estimated Value = 75 kg – 74.5 = 0.5 kg.  Relative Error = (Actual Value – Estimated Value) / Estimated Value = (75 – 74.5) / 75 = 0.0066
8	False.
9	I
10	(i). Expensive ; (ii). Time Consuming.
11	Secondary data
12	Secondary data
13	Sample data
14	Socio-economic data
15	(iii) A and R are true but R isn't the correct explanation of A
16	Are you dependent only on rainwater for irrigating the land ?
17	Heterogeneous population and random sampling
18	Mailing questionnaire as it is cheapest and easiest way of collecting primary data
19	Population=200 Sample=75
20	Sampling error
21	Variable
22	I suggest , the manager should consider that(i) The trade union leader is honest, experienced and unbiased.

	(ii) Respect to workers' views, truth ,honesty etc. was maintained by the trade union leader.
23	Primary data
24	Secondary data
25	Poor Q How do you like the flavour of this high-quality tea? Good Q How do you like the flavour of this tea?
26	1. What is your view about globalisation? What does a student want to do after college?
27	Two way answers like yes or no , multiple choice questions
28	Pilot survey
29	This conveys that Indian society is basically a male – dominated society.
30	No, this is ethically and morally incorrect. Drafting a questionnaire requires a great deal of responsibility. Questions which offend personal and religious sentiments of the respondents should be avoided.
31	a
32	b
33	b
34	c
35	Respondent, Enumerator
36	Primary data, Indirect oral investigation
37	Enumeration, Estimation
38	b
39	c
40	a
41	1.survey by a company before launching a new product in the market 2.survey by scientists before introducing a new medicine 3.survey by a publisher before publishing a new book
42	1.questions which is simple and specific to the objectives 2.questions with proper sequence and clear instructions 3.Only objective or mcq questions to be framed
43	1.Selecting the population size 2.Deciding the type survey census or sample survey 3.Selecting the method of collection of data
44	(a) It is an expensive method. (b) It need expert interviewers (c) It takes more time to complete the survey.
45	The name of the method is Census Method. Qualities of census method--- 1. This method collects data from each and every unit. 2. This method gives authentic results. 3. There are less chances of biasedness.
46	Random sampling technique is used for exit polls. A random sample of voters who exist at the polling booths are asked for whom they voted . On the basis of data collected , the prediction is made.
47	Information collected is an example of primary data.

	<p>Features of primary data are as follows:  Data are collected by the investigator for his own purpose for the first time.  This is the first- hand information.  They are original because information is collected from the source of origin.  It is costly in terms of time, efforts and money.</p>
48	<p>Information collected is an example of secondary data.</p> <p>Features of secondary data are as follows:  Data is collected from the information collected by an institution, agency or organisation who collected it for their own purpose.  They are less original because information is not directly collected from the source of origin.  It requires adjustment as per purpose as per the purpose of investigation.  It is relatively cheap in terms of time, efforts and money</p>
49	<p>Samples and surveys have their applicability and usability as the nature and purpose of investigation. Both have their own merits and demerits.  Samples provide reliable information selected scientifically.  These are less costly in terms of time, money and efforts.  Errors can be easily detected and modified due to smaller number of items selected to study</p>
50	<ol style="list-style-type: none"> <li>1. Primary data is collected by investigator himself whereas secondary data is collected from other sources like magazines, newspapers, journals, etc.</li> <li>2. Primary data is original, so it is reliable whereas secondary data is taken from others, so it is less reliable.</li> </ol> <p>Primary data is expensive and time – taken whereas secondary data takes less time and less expensive.</p>
51	<p>Variable: To test Intelligence Query level of students of a school and to test sex ratio of a country.</p> <p>Population: For testing Intelligence Query level of students of a school, population is number of students in the school and to find sex ratio in a country population is people living in that country.</p> <p>Sample: If we select 100 students to test IQ level of students of a school it is sample. Similarly if we find sex ratio by collecting data of 20% population at random, 20% of population is sample.</p>
52	<p>(a). Investigator: The person or agency who is conducting the statistical enquiry is called Investigator.</p> <p>(b). Enumerator: The person or agency that helps to the investigator in his activities is called Enumerator.</p> <p>(c). Respondent: The person from whom the investigator is collecting statistical information is called Respondent.</p>
53	<p>The following are the methods of collecting Primary Data :</p> <ol style="list-style-type: none"> <li>I. Direct Personal Interview: according to this method, data is collected by the investigator personally from persons who are the subject of enquiry.</li> </ol>

	<p>II. Indirect Personal Interview: an indirect personal enquiry is conducted to get necessary information from indirect sources.</p> <p>III. Telephonic Interview: the investigator asks questions over telephone, via call or sms and even online.</p> <p>IV. Information from Correspondents: here, local agents or correspondents are trained and appointed in the different part of the investigation area to collect the information.</p> <p>Mailed Questionnaires: questionnaires (a list of questions), along with a covering letter, are sent to informants by post, with request to answer and return it within a specified time.</p>
54	<p>One should use the secondary data with care and full precaution and should not accept them at their face value as they may be suffering from the following limitations:</p> <ol style="list-style-type: none"> <li>1. Data may not have been collected by following the proper procedure.</li> <li>2. Data collected may not be suitable for the required purpose. The information which was collected on a particular base may not be suitable and relevant to an enquiry.</li> <li>3. The data may have been influenced by biased investigation or personal prejudices.</li> <li>4. It may be obsolete and not suitable to the present period.</li> <li>5. It may not satisfy a reasonable standard of accuracy.</li> <li>6. Collected data may not cover the full period of investigation.</li> </ol>
55	<p>NSSO is a government organization under the Ministry of Statistics and Programme Implementation. The National Sample Survey (NSS), initiated in the year 1950, is a nationwide, large scale continuous survey operation conducted in the form of successive rounds. It was established on the basis of a proposal from Prof. P.C. Mahalanobis to fill up data gap for socio-economic planning and policy making through sample surveys. On March 1970, the NSS was reorganized and known as the National Sample Survey Office.</p> <p>The NSSO headed by a Director General Chief Executive Officer has four divisions, namely, Survey Design and Research Division (SDRO Field Operation Division (FOD), Data Processing Division (DPD) and Coordination Publication Division (CPD). A Deputy Director General heads each division except FOD. An Addition Director General heads FOD.</p>
56	<p>Quota sampling</p> <p>In this method, population is divided into different groups or classes called as quotas. These quotas are created on the basis of their different characteristics. Number of sample units to be picked from each quota is also fixed. This method is simple and least expensive. This method is too much based on the personal biasness of the investigator.</p>
57	<p>Technique used would be Deliberate sampling.</p> <p>In this method sample is selected from the population based on the purpose of the investigation.</p> <p>Sample is selected deliberately by the investigator which in his opinion is considered as best to represent the population.</p> <p>All units of population do not have equal chance to get selected</p> <p>It is simple technique of sampling</p>

58	<p>The method is Direct Personal Investigation.  There is direct contact between Investigator and Respondents  Investigator approaches the respondents and information is collected directly and personally by the investigator through oral discussions.  Field of investigation is small.  Greater degree of originality is required.  Secrecy in information is to be kept.</p>
59	<ul style="list-style-type: none"> <li>(a) The questionnaire should not be too long.</li> <li>(b) The questionnaire should be easy to understand.</li> <li>(c) The questionnaire should be arranged in an order.</li> <li>(d) The series of questions should move from general to specific.</li> </ul>
60	<ul style="list-style-type: none"> <li>1. A good sample is generally smaller than a population.</li> <li>2. It provides reasonable accuracy.</li> <li>3. A good sample provide information is less time</li> <li>4. A good sample provides information at a low cost.</li> </ul>
61	<ul style="list-style-type: none"> <li>(a) secondary data</li> <li>(b) schedule</li> <li>(c) Semi-Government Publication</li> <li>(d) Persons with disabilities and drinking water</li> </ul>
62	<ul style="list-style-type: none"> <li>1.Data which are collected directly from the field /source is called primary data but data which are already collected by one party are used by another party for some purpose are called secondary data</li> <li>2.primary data are focussed but secondary data are not original and needs adjustment</li> <li>3.the sources of primary data are surveys, observations and experiments while that of secondary data are internal records, government publications etc</li> </ul>
63	<ul style="list-style-type: none"> <li>1.Sample-Blood sample taken by pathology labs</li> <li>2.census-population data collected by NSSO</li> <li>3.Sampling error-picking a sample from the telephone directory may have erroneous inclusion because some people may have shifted to other cities.</li> <li>4.Non sampling error-If a person is counted twice in a survey.</li> </ul>
64	<p>Suitability of census survey and sample survey may depend upon the nature of population and degree of accuracy sought.</p> <ul style="list-style-type: none"> <li>1.census survey is better when the area under investigation is small</li> <li>2.census survey is better when data required is authentic, original and important</li> </ul> <p>While</p> <ul style="list-style-type: none"> <li>1.sample survey is better when the area under investigation is large</li> <li>2.sample survey is better when items of the universe are homogeneous</li> </ul>
65	<p>Precautions taken</p> <ul style="list-style-type: none"> <li>1.keep it short and simple</li> <li>2.avoid double barrelled questions</li> <li>3.avoid negatives or double negatives</li> <li>4.Don't assume respondents are experts</li> </ul> <p>Good Qualities</p> <ul style="list-style-type: none"> <li>1.limited no of questions</li> <li>2.questions should be in proper order</li> <li>3.No personal questions</li> <li>4.Avoid calculation</li> </ul>

66	<p>Personal interview method</p> <p>Advantages</p> <ol style="list-style-type: none"> <li>1. provides good response rate</li> <li>2. provides greater opportunity to observe the behaviour and attitude of the respondent</li> </ol> <p>Disadvantages</p> <ol style="list-style-type: none"> <li>1. Individual biasness</li> <li>2. decision hesitancy</li> </ol> <p>Mailing questionnaire</p> <p>Advantages</p> <ol style="list-style-type: none"> <li>1. economical</li> <li>2. wide coverage</li> </ol> <p>Disadvantages</p> <ol style="list-style-type: none"> <li>1. validity or reliability is low</li> <li>2. poor or late responses</li> </ol>
67	<p>Sample survey is preferred over census survey because it reduces cost both monetary terms and staffing requirements. It reduces time needed to collect and process the data and produce results as it requires a smaller scale of operation</p> <p>Whereas Census or complete enumeration method is inevitable where detailed information about the respondent is highly necessary or that of the information is needed to be original from the point of view of framing policies like socio-economic data are required by the government or census survey.</p>
68	<ol style="list-style-type: none"> <li>1) Stratified random sampling is typically used by researchers when trying to evaluate data from different subgroups.</li> <li>2) Yes, stratified sample is obtained by taking samples from each stratum or subgroup of a population and within each stratum selecting sites using an independent random sample</li> <li>3) Let's say 100 (<math>N_h</math>) students of a school having 1000 (<math>N</math>) students were asked questions about their favorite subject. It's a fact that the students of the 8th grade will have different subject preferences than the students of the 9th grade, so different strata will be made and random selection from each strata.</li> <li>4) <ol style="list-style-type: none"> <li>1) the selection of appropriate strata for a sample may be difficult.</li> <li>2) A second disadvantage is that arranging and evaluating the results is more difficult compared to a simple random sampling.</li> </ol></li> <li>5) No, The selected sample from different strata is combined to have a single sample. Stratified sampling is the technique of probability sampling</li> </ol> <p>This method ensures that each subgroup is a fair representation of the entire, and that your sample is not biased towards any particular characteristic.</p>
69	<ol style="list-style-type: none"> <li>1) All of the above</li> <li>2) Simple random sampling</li> <li>3) Simple random sampling</li> <li>4) Random sample</li> <li>5) Population</li> <li>6) Lottery method</li> </ol>
70	<ol style="list-style-type: none"> <li>1) Primary data</li> <li>2) 1951</li> <li>3) Secondary data</li> <li>4) Leading question</li> <li>5) Primary data</li> <li>6) All of the above</li> </ol>



<b>71</b>	<p>Both the methods have their own merits and demerits. The usage of the method depends on the nature and purpose of investigation.</p> <table border="1" data-bbox="342 285 1219 464"> <tr> <td data-bbox="342 285 781 317">Census Method</td> <td data-bbox="781 285 1219 317">Sample Method</td> </tr> <tr> <td data-bbox="342 317 781 464">Information is collected from each and every unit of population</td> <td data-bbox="781 317 1219 464">Information is collected from a smaller group of population and the results are then generalised for all.</td> </tr> </table> <table border="1" data-bbox="342 491 1219 737"> <tr> <td data-bbox="342 491 781 737">This applicable when area of investigation is small.</td> <td data-bbox="781 491 1219 737">This is applicable when area of investigation is large</td> </tr> </table> <table border="1" data-bbox="342 737 1219 982"> <tr> <td data-bbox="342 737 781 982">This method gives accurate and reliable results</td> <td data-bbox="781 737 1219 982">This method may not be reliable and accurate.</td> </tr> </table> <table border="1" data-bbox="342 982 1219 1226"> <tr> <td data-bbox="342 982 781 1226">This is expensive in terms of time, efforts and money</td> <td data-bbox="781 982 1219 1226">This is less expensive in terms of time, efforts and money.</td> </tr> </table>		Census Method	Sample Method	Information is collected from each and every unit of population	Information is collected from a smaller group of population and the results are then generalised for all.	This applicable when area of investigation is small.	This is applicable when area of investigation is large	This method gives accurate and reliable results	This method may not be reliable and accurate.	This is expensive in terms of time, efforts and money	This is less expensive in terms of time, efforts and money.
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<b>72</b>	<p>Random sampling should be used.  Each and every unit of population has equal chance of getting selected in the sample  This method is used when population is homogeneous in nature.  It is economical in terms of time, efforts and money  It is time saving  It is possible when area of investigation is large.</p>											
<b>73</b>	<p>(a) Population size=500 and Sample size=10  Stratified / Mixed sampling—It is a combination of random and deliberate sampling.  While the Strata in the population are created on the basis of purpose of investigation. Sample units from the Strata are then selected randomly.  No. of students selected=Group size/Population size x Sample size  No. of students selected from science= <math>100/500 \times 10 = 2</math> students  No. of students selected from commerce= <math>250/500 \times 10 = 5</math> students  No. of students selected from humanities= <math>150/500 \times 10 = 3</math> students</p>											
<b>74</b>	<p>Under mailing questionnaire method, a list of questions pertaining to the investigation is prepared and sent to each informant by mail with a request to complete and return it by a given</p>											

	<p>data. The informants write the answers against the questions and return the completed questionnaires to the investigator.</p> <p>Merits:</p> <ol style="list-style-type: none"> <li>(1) Less expensive: It is relatively less expensive than other methods.</li> <li>(2) Wider area: It is the only method where the field of investigation is very vast and the information is spread over a wide geographical area.</li> <li>(3) No possibility of personal bias: There is any room for personal bias and prejudice on the part of the investigators.</li> <li>(4) Originality: This method is original and fairly reliable, because the information is supplied by the concerned persons themselves.</li> </ol> <p>Demerits:</p> <ol style="list-style-type: none"> <li>(1) Limited use: This method cannot be used when the informants are illiterate or uneducated.</li> <li>(2) Low response rate: It involves some uncertainty about the response. In many cases, the respondents do not return the questionnaire.</li> <li>(3) Lack of flexibility: This method lacks flexibility because, when questions are not properly replied, these cannot be changed to obtain the required information.</li> <li>(4) Not accurate data: The information supplied by the informants may not be correct and it may be very difficult to verify the accuracy.</li> </ol>
75	<p>Sample method has the following merits or advantages over the census method :</p> <ol style="list-style-type: none"> <li>(i) Less time-consuming: Since the sample is a study of the part of the population, considerable time is saved when a sample survey is carried out. Time is saved not only in collecting data but also in processing it.</li> <li>(ii) Less cost: Under sample method, lot of expenses is saved in terms of money and labour not only in the collection of data but also in the administration, transport and training etc. This is because in sample method, a part of the population is studied and examined to arrive at the desired conclusion.</li> <li>(iii) Greater Scope: In certain types of enquiry, highly trained personnel or specific equipment are needed to obtain and analyses the data. In such cases, sampling methods are more suitable.</li> </ol>

	(iv) More detailed information: Since the sample method saves time and money, it is possible to collect more detailed information in a sample survey.
76	<p>There are two main sources of collecting Secondary Data, these are:</p> <ol style="list-style-type: none"> <li>1. Published Sources; and</li> <li>2. Unpublished Sources.</li> </ol> <p>Published Sources:</p> <p>Some of the published sources of secondary data are:</p> <ol style="list-style-type: none"> <li>(i) Government Publications: Ministries of the Central and State Governments in India publish a variety of Statistics as their routine activity. As these are published by the Government, data are fairly reliable.</li> <li>(ii) Semi-Government Publications: Semi-Government bodies (such as Municipalities and Metropolitan Councils) publish data relating to education, health, births and deaths. These data are also fairly reliable and useful.</li> <li>(iii) Reports of Committees and Commissions: Committees and Commissions appointed by the Government also furnish a lot of statistical information in their reports. Finance Commission, Monopolies Commission, Planning Commission are some of the notable commissions in India which supply detailed statistical information in their reports.</li> <li>(iv) Publications of Trade Associations: Some of the big trade associations, through their statistical and research divisions, collect and publish data on various aspects of trading activity. For example, Sugar Mills Association publishes information regarding sugar mills in India.</li> <li>(v) Publications of Research Institutions: Various universities and research institutions publish information as findings of their research activities. In India, for example, Indian Statistical Institute, National Council of Applied Economic Research publish a variety of statistical data as a regular feature.</li> </ol> <p>Unpublished Sources:</p> <p>There are some unpublished secondary data as well. These data are collected by the government organizations and others, generally for their self-use or office record. These data are not published. This unpublished numerical information is used as secondary data.</p>