Collection of Data

Standard difficulty · 20 questions · 40 marks · Time: 37 minutes

Name: _____ Date: _____ Score: ____ / 40

Write full answers in Sections B and C. Answers are on the last page — try every question first!

Section A — Choose the correct answer — 8 × 1 = 8 marks

1. Data collected by the investigator for the first time are called:
   (a) raw opinions **(b)** published data **(c)** secondary data **(d)** primary data

2. Which mode of collecting data has this feature: the least expensive and reaches remote areas?
   (a) a pilot survey **(b)** a census
   (c) mailed questionnaire **(d)** telephone interview

3. What is wrong with this survey question? “Don’t you think the library should open earlier?”
   (a) it is vague; give ranges to choose from
   (b) it is a leading question
   (c) it uses a double negative that pushes the answer
   (d) it adds a phrase that biases the answer

4. What is meant by “sampling bias”?
   (a) when some members of the population could never be selected
   (b) every unit has an equal chance of being selected
   (c) the list of all units from which a sample is drawn
   (d) a part of the population from which information is obtained

5. The incomes (₹) of five farmers are 1,000, 1,200, 1,400, 500, 900. A sample of two gives 1,000 and 1,400. What is the sampling error of the sample average?
   (a) ₹250 **(b)** ₹200 **(c)** ₹1,000 **(d)** ₹1,200

6. The names of 1,020 households are written on slips and 51 are drawn by lottery. Each household then has a chance of 1 in how many of being selected?
   (a) 25 **(b)** 51 **(c)** 20 **(d)** 1,020

7. A researcher mails 1,300 questionnaires and 962 come back filled in. What is the response rate?
   (a) 84 % **(b)** 26 % **(c)** 74 % **(d)** 13 %

8. Interviewing one household costs ₹220. How much is saved by surveying a 25% sample of 39,000 households instead of taking a census of all of them?
   (a) ₹6,457,000 **(b)** ₹2,145,000 **(c)** ₹8,580,000 **(d)** ₹6,435,000

Section B — Short answer — 8 × 2 = 16 marks

9. Distinguish between primary and secondary data.

10. Name the mode of collecting data (personal interview, mailed questionnaire or telephone interview) with each feature: (a) relatively low cost and a fairly high response rate (b) keeps respondents anonymous, best for sensitive questions

11. Explain each term: (a) random sampling (b) pilot survey

12. What is wrong with each survey question? (a) “What share of your income do you spend on food to stay healthy?” (b) “Do you spend a lot on mobile data?”

13. Which came first, and by how many years? (a) the NSS 60th round surveyed morbidity and health care (2004) (b) the Census began to be held regularly every ten years (1881)

14. The incomes (₹) of a population of five farmers are 1,300, 750, 600, 450, 1,200. Find the population average, the average of the sample 1,300 and 450, and the sampling error.

15. A study covers all 25,000 agricultural labourers of a district. (a) What is the population here? (b) How many labourers are in a 5% sample?

16. Of 1,700 mailed questionnaires, 1,292 are returned. Find the response rate and give one reason why mail surveys get low response.

Section C — Longer answers — 4 × 4 = 16 marks

17. Compare personal interviews, mailed questionnaires and telephone interviews.

18. Match each with its work: (a) the National Sample Survey (b) the Census of India (c) Sarvekshana. Choose from: runs continuous rounds of socio-economic surveys; counts the population and records literacy, sex ratio and migration every ten years; the journal in which NSS data are released.

19. The monthly incomes (₹) of five farmers are 1,250, 1,000, 1,450, 850, 1,400. (a) Find the population average. (b) A sample of two has 1,400 and 850: find its average. (c) What is the sampling error? (d) How can it be reduced?

20. A survey team must study 56,000 households, at ₹170 per household interviewed. (a) What would a census cost? (b) What would a 10% random sample cost? (c) Give two reasons, besides cost, for preferring the sample.

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Answer key

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Q	Answer	Working
1	**(d) primary data**	—
2	**(c) mailed questionnaire**	—
3	**(c) it uses a double negative that pushes the answer**	—
4	**(a) when some members of the population could never be selected**	—
5	**(b) ₹200**	population average 1,000, sample average 1,200; 1,200 − 1,000
6	**(c) 20**	1,020 ÷ 51 = 20
7	**(c) 74 %**	962 ÷ 1,300 × 100
8	**(d) ₹6,435,000**	39,000 × 220 × 75%
9	**Primary data are collected first-hand by the investigator; secondary data are taken from sources that collected them earlier, like reports.**	—
10	**(a) telephone interview (b) mailed questionnaire**	—
11	**(a) every unit has an equal chance of being selected (b) a try-out of the questionnaire on a small group**	—
12	**(a) it adds a phrase that biases the answer (b) it is vague; give ranges to choose from**	—
13	**The Census began to be held regularly every ten years, by 123 years**	2004 − 1881
14	**₹860, ₹875, ₹15**	4,300 ÷ 5; (1,300 + 450) ÷ 2
15	**(a) all 25,000 agricultural labourers of the district (b) 1,250**	5% of 25,000
16	**76%; e.g. people do not return it, return it blank, or it is lost in the mail.**	1,292 ÷ 1,700 × 100
17	**Personal interviews: highest response, clarification possible, but costly and slow. Mail: cheapest, reaches remote areas, no interviewer influence, but low response and no clarification. Telephone: low cost and quick, but not everyone has a phone and reactions cannot be seen.**	—
18	**(a) runs continuous rounds of socio-economic surveys (b) counts the**	—

Q	Answer	Working
	population and records literacy, sex ratio and migration every ten years (c) the journal in which NSS data are released	
19	**(a) ₹1,190 (b) ₹1,125 (c) ₹65 (d) by taking a larger sample**	5,950 ÷ 5
20	**(a) ₹9,520,000 (b) ₹952,000 (c) It takes less time, and a smaller team can be trained and supervised better, allowing more detailed questions.**	56,000 × 170; 10% of that