ANSWER KEY & MARKING SCHEME · CBSE CLASS 11

Collection of Data (Statistics for Economics)

Economics · Chapter 2 · Use this with the Board Paper · Companion to Quick Drill

HOW TO USE

Attempt the Board Paper first (closed-book, full time). Then come here. For 2-mark+ questions, compare your answer to the model. For 3-4 mark questions, also consult the **Topper Templates** below — these show the exact step-by-step structure that scores full marks per CBSE marking-scheme conventions.

MODEL ANSWERS · BOARD PAPER

Section A — Very Short Answer (1 mark x 5)

Q1. Define primary data. [1 mark]

Ans: Primary data are data collected by the investigator himself for the first time, directly from the field, for a specific enquiry.

Q2. Who fills in a schedule? [1 mark]

Ans: A trained enumerator (investigator) fills in a schedule by reading the questions to the respondent.

Q3. How often is the Census of India conducted? [1 mark]

Ans: Once every ten years (a decennial census).

Q4. What does NSSO stand for? [1 mark]

Ans: National Sample Survey Office.

Q5. What is a pilot survey? [1 mark]

Ans: A small trial run of the questionnaire on a few respondents before the main survey, to test it for flaws and estimate cost and time.

Section B — Short Answer I (3 marks x 3)

Q6. Distinguish between a questionnaire and a schedule. [3 marks]

Ans: QUESTIONNAIRE: a printed list of questions that the RESPONDENT fills in himself, often sent by mail/email; merits — low cost and wide coverage; demerit — works only with literate respondents and has a low response rate. SCHEDULE: the same kind of questions, but filled in by a trained ENUMERATOR who reads them to the respondent; merits — works with illiterate respondents and gives a high, accurate response rate; demerit — expensive. The core difference: in a questionnaire the respondent fills the form; in a schedule an enumerator does.

Q7. Distinguish between sampling and non-sampling errors. [3 marks]

Ans: A SAMPLING error arises because only a PART (sample) of the population is studied instead of the whole; it exists ONLY in sample surveys and DECREASES as the sample size increases. NON-SAMPLING errors arise from faults in collecting and processing data — wrong measurement, ambiguous/leading questions, non-response, biased answers, and mistakes in recording or tabulation; they occur in BOTH census and sample studies and may even rise with a larger study. Thus they differ in cause: one is from sampling, the other from the data-handling process.

Q8. State any three qualities of a good questionnaire. [3 marks]

Ans: (1) It should be SHORT and simple — only necessary questions, in plain language. (2) Questions should be CLEAR and UNAMBIGUOUS, in a logical order (general to specific), and free of leading, embarrassing or personal questions. (3) It should prefer CLOSED-ENDED questions for easy tabulation and be PRE-TESTED by a pilot survey before use. [Any three valid qualities accepted.]

Section C — Short Answer II / Long Answer (4 marks x 4)

Q9. Distinguish between primary data and secondary data. [4 marks]

Ans: PRIMARY data are collected by the investigator himself for the first time for a specific enquiry; SECONDARY data are already collected by some other agency and reused. Bases of difference: (1) ORIGINALITY — primary are original and first-hand, secondary are second-hand; (2) COLLECTION — primary are freshly collected, secondary are already available (e.g., Census, NSSO reports, books); (3) COST & TIME — primary need more money and time, secondary are cheaper and quicker; (4) SUITABILITY & RELIABILITY — primary fit the enquiry exactly and are more reliable, while secondary may need adjustment and must be checked for reliability. Note: the same data are primary for the collector and secondary for any later user.

Q10. Explain any four methods of collecting primary data. [4 marks]

Ans: (1) DIRECT PERSONAL INVESTIGATION — the investigator collects data face-to-face from informants; accurate but costly and prone to personal bias, suited to a small area. (2) INDIRECT ORAL INVESTIGATION — the investigator questions third parties/witnesses who know about the units; covers a wide area but the information is second-hand. (3) MAILED QUESTIONNAIRE — a printed list of questions is sent to respondents who fill it themselves; cheap and wide but works only for literate respondents and has a low response rate. (4) SCHEDULE (enumerator-filled) — trained enumerators read the questions and record answers; works for illiterate respondents and is accurate but expensive. (Telephone interviews and information from local correspondents are also acceptable methods.)

Q11. Distinguish between the census method and the sample method of collecting data. [4 marks]

Ans: CENSUS (complete enumeration) method studies EVERY unit of the population; SAMPLE method studies only a representative PART and infers about the whole. Bases of difference: (1) COVERAGE — all units vs a part; (2) COST, TIME & LABOUR — census is expensive, slow and labour-heavy, sample is cheap and quick; (3) SUITABILITY — census suits a small or highly varied population and where complete detail is essential, sample suits a large population and is the only option when testing destroys the unit; (4) ERRORS — sampling error exists only in the sample method (and falls as the sample grows), while the census has no sampling error but can have large non-sampling errors due to its size. Example: the Census of India uses the census method; the NSSO uses the sample method.

Q12. Explain the Census of India and the NSSO as important sources of secondary data in India. [4 marks]

Ans: CENSUS OF INDIA: the most important source of demographic and socio-economic data, conducted ONCE EVERY TEN YEARS (decennial) by the Office of the Registrar General and Census Commissioner under the Ministry of Home Affairs, using complete enumeration (every person counted). It provides data on population, age, sex, literacy, occupation and housing down to the village level. NSSO (NATIONAL SAMPLE SURVEY OFFICE): set up by the Government of India to conduct nationwide SAMPLE surveys on a regular basis on socio-economic subjects such as employment and unemployment, household consumer expenditure, literacy and health. Contrast: the Census is a 10-yearly complete count, while the NSSO uses the sample method to give more frequent, detailed estimates at lower cost; both are key sources of secondary data used for policy.

★ TOPPER TEMPLATE — 3-mark: 'Distinguish between primary data and secondary data.'

Most school papers + SQP

Step 1 [1 mark]	**Define primary data**	PRIMARY data are data collected by the investigator HIMSELF for the FIRST TIME, directly from the field for a specific enquiry — they are original and have not passed through any other hands (e.g., a researcher surveying 200 households about their spending).
Step 2 [1 mark]	**Define secondary data**	SECONDARY data are data that have ALREADY been collected and processed by someone else and are then used by the investigator for a NEW purpose — taken from published or unpublished sources such as government reports, the Census, NSSO reports, books and websites.
Step 3 [1 mark]	**Two-column bases of difference**	Bases of difference: ORIGINALITY — primary are original, secondary are second-hand; COLLECTION — primary are freshly collected, secondary are already available; COST & TIME — primary cost more time and money, secondary are cheaper and quicker; SUITABILITY — primary fit the enquiry exactly, secondary may need adjustment. (Key idea: the SAME data are primary for the collector and secondary for a later user.)

COMMON LOSS OF MARKS:

- Writing a paragraph instead of clear point-wise / two-column differences.
- Saying primary and secondary are 'different data' rather than different SOURCES of the same data.
- Forgetting to give a concrete example (a survey for primary, the Census/NSSO for secondary).

★ TOPPER TEMPLATE — 4-mark: 'Distinguish between the census method and the sample method.'

Annual

Step 1 [1 mark]	**Coverage**	COVERAGE: the CENSUS (complete enumeration) method studies EVERY unit of the population, whereas the SAMPLE method studies only a representative PART (sample) of the population and infers about the whole from it.
Step 2 [1 mark]	**Cost, time and labour**	COST/TIME/LABOUR: the census method is EXPENSIVE, time-consuming and needs a large workforce; the sample method is far CHEAPER, FASTER and needs fewer enumerators because only a part is studied.
Step 3 [1 mark]	**Accuracy and suitability**	ACCURACY/SUITABILITY: the census gives complete, detailed information and suits a SMALL or highly varied population; the sample suits a LARGE population and is the only option when testing DESTROYS the unit (e.g., testing matchsticks). A well-designed sample can be highly reliable.
Step 4 [1 mark]	**Errors + example**	ERRORS/EXAMPLE: sampling error exists only in the SAMPLE method (and falls as the sample grows); the census avoids sampling error but is prone to large non-sampling errors due to its size. Example: the Census of India uses the census method (every person counted, once in 10 years); the NSSO uses the sample method.

COMMON LOSS OF MARKS:

- Claiming the census method is 'always more accurate' — it avoids sampling error but can have big non-sampling errors.
- Not giving the bases of difference as separate points.
- Omitting the standard examples (Census of India = census method; NSSO = sample method).

★ TOPPER TEMPLATE — 3-mark: 'Distinguish between sampling and non-sampling errors.'

Frequent

Step 1 [1 mark]	**Sampling error**	A SAMPLING error arises because only a PART (sample) of the population is studied instead of the whole, so the sample estimate differs from the true population value. It exists ONLY in sample surveys and DECREASES as the sample size increases.
Step 2 [1 mark]	**Non-sampling error**	NON-SAMPLING errors arise from faults in the actual process of collecting and handling data — wrong measurement, biased or ambiguous questions, non-response, wrong recording, and mistakes in processing/tabulation. They are not caused by sampling.
Step 3 [1 mark]	**Key contrast**	Key contrast: sampling error occurs ONLY in sample studies and shrinks with a bigger sample; non-sampling error can occur in BOTH census and sample studies and may even GROW with a larger study because more data means more chances of mistakes.

COMMON LOSS OF MARKS:

- Saying both errors fall as the sample grows — only the SAMPLING error does.
- Thinking non-sampling error occurs only in sample surveys — it occurs in the census too.
- Giving no examples of non-sampling error (non-response, measurement, processing).

MARKING SCHEME — GENERAL NOTES

- For 'distinguish' questions, full marks require clear point-wise / two-column differences with a stated BASIS for each point; a single undifferentiated paragraph caps the marks.
- Questionnaire-vs-schedule answers must state WHO fills the form (respondent vs enumerator) for the key mark.
- Census-vs-sample answers must NOT claim the census is 'always better'; the standard examples (Census of India = census; NSSO = sample) are expected.
- In sampling-vs-non-sampling, award the final mark only if the candidate notes that sampling error falls with size and is sample-only, while non-sampling error occurs in both methods.
- Census of India = every 10 years and conducted by the Registrar General (not the NSSO); the NSSO conducts sample surveys — both facts must be correct for the secondary-source mark.
- Accept any valid example in place of those given, provided it correctly illustrates the concept.