

BOARD-PATTERN PRACTICE PAPER · CBSE CLASS 11

Sets

Mathematics · Chapter 1 · Matches current CBSE blueprint · Each question PYQ-sourced where indicated

DATE _____	TOTAL MARKS 30	DURATION 60 min	MARKING As per board	TARGET ≥ 24/30
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GENERAL INSTRUCTIONS

- All questions are compulsory.
- Section A: 4 one-mark questions. Section B: 3 two-mark questions. Section C: 3 three-mark questions. Section D: 2 case-study / long-answer questions (5 + 6 marks).
- Write set notation carefully; use \in for elements and \subseteq / \subset for subsets.
- Draw a neat, labelled Venn diagram wherever a question involves union, intersection or a survey count.
- This is a Class 11 INTERNAL (school) examination pattern — not a CBSE board paper.

Section A — Very Short Answer (1 mark each, 4 Qs)

4 MARKS · 8 MIN

- Q1.** Write the set $\{x : x \text{ is an integer and } -2 \leq x < 3\}$ in roster form. [PYQ 2022 School Annual] **[1 mark]**
- Q2.** How many subsets does a set with 6 elements have? [PYQ 2022 CBSE SQP] **[1 mark]**
- Q3.** State whether $\{0\}$ is the empty set. Justify in one line. [PYQ 2023 School Annual] **[1 mark]**
- Q4.** Write the interval $[-1, 4)$ in set-builder form. [PYQ 2024 Periodic Test] **[1 mark]**

Section B — Short Answer I (2 marks each, 3 Qs)

6 MARKS · 12 MIN

- Q5.** Write the power set of $A = \{1, 2\}$. State the number of subsets and proper subsets. [PYQ 2021 School Annual]
- Q6.** Distinguish between EQUAL and EQUIVALENT sets with one example each. [PYQ 2021 CBSE SQP] **[2 marks]**
- Q7.** If $A = \{1, 2, 3, 4, 5\}$ and $B = \{2, 4, 6, 8\}$, find $A \cup B$ and $A \cap B$. [PYQ 2022 School Annual] **[2 marks]**

Section C — Short Answer II (3 marks each, 3 Qs)

9 MARKS · 20 MIN

- Q8.** Let $U = \{1, 2, \dots, 9\}$, $A = \{1, 2, 3, 4\}$ and $B = \{2, 4, 6, 8\}$. Find A' , B' , $A - B$ and $B - A$. [PYQ 2022 CBSE SQP]
- Q9.** For $U = \{1, 2, \dots, 10\}$, $A = \{1, 2, 3, 4, 5\}$ and $B = \{4, 5, 6, 7\}$, verify De Morgan's law $(A \cup B)' = A' \cap B'$. [PYQ 2024 School Annual] **[3 marks]**
- Q10.** In a survey of 600 students, 350 took tea and 250 took coffee, while 150 took both. Find how many students took (i) at least one of the two drinks, (ii) only tea, (iii) neither. [PYQ 2023 CBSE SQP] **[3 marks]**

Section D — Case Study / Long Answer (5 + 6 marks, 2 Qs)

11 MARKS · 20 MIN

- Q11.** Let $A = \{a, b, c\}$. (a) Write the power set $P(A)$. (b) State $|P(A)|$ and the number of proper subsets. (c) Is $\emptyset \in P(A)$? Justify. (d) Is $A \in P(A)$? Justify. (e) Is $\{a\}$ a subset or an element of A ? [PYQ 2023 School Annual] **[5 marks]**
- Q12.** Read the passage and answer. In a class of 100 students, every student studies at least one of Physics, Chemistry or Mathematics. 40 study Physics, 50 study Chemistry, 60 study Mathematics; 15 study Physics and Chemistry, 20 study Chemistry and Mathematics, 25 study Physics and Mathematics; and 10 study all three. (a) Write the inclusion-exclusion formula for $n(\text{PuCuM})$. (b) Verify that $n(\text{PuCuM}) = 100$. (c) How many study exactly all three subjects? (d) State the cardinality formula for two sets as a special case. [PYQ 2024 CBSE SQP] **[6 marks]**

Marking scheme & model answers — see companion Answer Key PDF · all PYQs traceable to actual CBSE papers · readyforboards.com · +91 70330 05444