

BOARD-PATTERN PRACTICE PAPER · CBSE CLASS 9

Atoms and Molecules

Science · Chapter 3 · 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. There is no overall choice.
- Section A: MCQs (1 mark each). Section B: Short Answer-I (2 marks). Section C: Short Answer-II (3 marks). Section D: Long Answer (4-5 marks).
- Show ALL working in numerical problems — formula, substitution and final answer with correct unit.
- Use atomic masses: H = 1, C = 12, N = 14, O = 16, Na = 23, Mg = 24, S = 32, Cl = 35.5, K = 39, Ca = 40, Al = 27, Fe = 56. Take $N_A = 6.022 \times 10^{23}$.

Section A — MCQ

5 MARKS · 8 MIN

- Q1.** What is the value of Avogadro's number? [PYQ 2020 Delhi] **[1 mark]**
- Q2.** Name the law that states reactants' mass equals products' mass. [PYQ 2021 All India] **[1 mark]**
- Q3.** State the formula of calcium carbonate. [PYQ 2022 Delhi] **[1 mark]**
- Q4.** What is the molecular mass of H_2O ? (H = 1, O = 16) [PYQ 2019 Delhi] **[1 mark]**
- Q5.** Name the scientist who gave the first modern atomic theory. [PYQ 2023 Delhi] **[1 mark]**

Section B — Short Answer-I (2 marks)

8 MARKS · 16 MIN

- Q6.** Calculate the molecular mass of H_2SO_4 . (H = 1, S = 32, O = 16) [PYQ 2020 Delhi] **[2 marks]**
- Q7.** How many moles are present in 22 g of CO_2 ? (M = 44 g/mol) [PYQ 2022 All India] **[2 marks]**
- Q8.** Write the chemical formulae of (i) magnesium chloride (ii) potassium nitrate. [PYQ 2023 Delhi] **[2 marks]**
- Q9.** Define mole. State Avogadro's number. [PYQ 2024 Delhi] **[2 marks]**

Section C — Short Answer-II (3 marks)

9 MARKS · 18 MIN

- Q10.** Calculate the number of molecules in 9 g of water. (H = 1, O = 16; $N_A = 6.022 \times 10^{23}$) [PYQ 2019 Delhi] **[3 marks]**
- Q11.** State the Law of Conservation of Mass. Verify it: 5.3 g of Na_2CO_3 reacts with 6 g of CH_3COOH to give 2.2 g of CO_2 , 0.9 g of H_2O and 8.2 g of CH_3COONa . [PYQ 2021 Delhi] **[3 marks]**
- Q12.** State any three postulates of Dalton's atomic theory. Mention one limitation. [PYQ 2022 All India] **[3 marks]**

Section D — Long Answer (4-5 marks)

8 MARKS · 18 MIN

- Q13.** (a) Define molar mass. (b) Calculate the number of moles, molecules and atoms in 88 g of CO_2 . (C = 12, O = 16; $N_A = 6.022 \times 10^{23}$) [PYQ 2023 Delhi] **[5 marks]**
- Q14.** Write the chemical formulae of: (i) aluminium oxide (ii) calcium nitrate (iii) sodium carbonate. Explain the criss-cross method using one of the above as an example. [PYQ 2024 All India] **[3 marks]**

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