CHEMISTRY · CHAPTER 1

Some Basic Concepts of Chemistry

A 1-page guide for parents · 90-second read.

EXPECTED MARKS	TIME TO MASTER	HELPLINE
A well-prepared student should score 7-8 out of 8 on this chapter's questions. Below 4 usually means Class 9-10 formula-writing or basic ratio maths was never solid — fix that first.	**12-15 hrs**	**70330 05444**

WHAT THIS CHAPTER IS, IN PLAIN ENGLISH

This is the foundation chapter of all of Class 11 and 12 Chemistry. Your child learns how chemists COUNT atoms and molecules even though they are far too small to see, using a 'counting unit' called the mole (one mole = 6.022 x 10^23 particles, an unimaginably large number). They learn to convert between grams, moles, and number of particles; to work out the formula of a compound from experimental data; and to calculate exactly how much product a reaction will make (including spotting which ingredient 'runs out first'). They also learn three ways to describe how concentrated a solution is. It is mostly a NUMERICAL chapter — skill comes from solving problems, not from re-reading.

5 QUESTIONS TO ASK YOUR CHILD

- What is a mole, and how many particles are in one mole?
- How do you convert grams of a substance into number of moles?
- What is the difference between molarity and molality, and which one changes when you heat the solution?
- In a reaction, what is the 'limiting reagent' and why does it decide how much product forms?
- What is the difference between an empirical formula and a molecular formula?

WEAK-SPOT INDICATORS

- Cannot compute a molar mass (e.g. does not know H2SO4 = 98 g/mol) without the textbook.
- Decides the limiting reagent by comparing grams instead of moles.
- Confuses molarity (per litre of solution) with molality (per kg of solvent).
- Reports answers to 6 calculator digits, showing no grasp of significant figures.

WHEN TO WORRY — AND WHAT TO DO

If your child cannot independently solve a basic 'moles in X grams' numerical in under 3 minutes, they will lose 6-8 marks here and struggle through every later Physical Chemistry chapter,

because all of them assume mole fluency. The fix is 20 minutes of numerical practice daily, NOT re-reading the chapter.

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