

CHEMISTRY NOTEBOOK — Day 5

Chapter: States of Matter — Mole Concept Review (Day 5 Mixed)

(Boards + JEE)

1. Empirical & Molecular Formula Steps

Empirical formula process

1. Assume 100 g
2. Convert % → grams
3. Convert grams → moles
4. Divide by smallest mole
5. Multiply if needed to get whole numbers

Molecular formula

$$\text{Molecular formula} = (\text{Empirical formula}) \times n$$

$$n = \frac{\text{Molar mass}}{\text{Empirical formula mass}}$$

2. Stoichiometry Core Rules

- Balance equation FIRST
- Convert mass → moles
- Use mole ratio from equation
- Convert moles → required quantity (mass/volume)

Shortcut:

Balanced equation = complete roadmap

3. Combustion Reaction Pattern

General:



Mole requirement for CH₄:

