📍 DAY 5 – QUESTIONS REVIEW

Below you will check:

✔️ Correct approach

✔️ Mistake-prone areas

✔️ Expected reasoning

✔️ Rating of difficulty

PHYSICS REVIEW (3 Questions)

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1) Acceleration from velocity change

Concepts checked:

- Uniform acceleration
- Using $a = \frac{v-u}{t}$

Common mistakes:

- Wrong sign
- Using displacement formula unnecessarily

Expected difficulty: ★☆☆ (Easy)

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2) Velocity–Time Graph

Concepts checked:

- Graph interpretation
- Start from rest → origin
- Constant acceleration → straight line

Common mistakes:

- Drawing curve instead of straight line
- Confusing slope meaning

Expected difficulty: ★☆☆ (Easy)

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3) Relative Velocity

Concepts checked:

- 1D relative motion
- $v_{A/B} = v_A - v_B$

Common mistakes:

- Reversing direction signs
- Forgetting symmetric relation

Expected difficulty: ★☆☆ (Easy)

CHEMISTRY REVIEW (3 Questions)

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4) Empirical Formula

Concepts checked:

- Percentage → moles → simplest ratio
- Dividing by smallest mole value

Common mistakes:

- Not converting % to grams (assume 100 g)
- Rounding ratios incorrectly

Expected difficulty: ★★☆ (Medium)

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5) Molecular Formula

Concepts checked:

- Using $n = \frac{\text{Molar mass}}{\text{Empirical mass}}$
- Multiplying subscripts correctly

Common mistakes:

- Wrong empirical mass
- Forgetting to multiply all atoms

Expected difficulty: ★☆☆ (Easy)

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6) Stoichiometry – CH₄ + O₂

Concepts checked:

- Balance equation
- Mole ratio $CH_4 : O_2 = 1 : 2$

Common mistakes:

- Using mass instead of moles
- Wrong ratio

Expected difficulty: ★☆☆ (Easy)

MATHEMATICS REVIEW (3 Questions)

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7) Forming a Quadratic

Concepts checked:

- Using:
  $$x^2 - (\text{sum})x + (\text{product}) = 0$$

Common mistakes:

- Wrong signs
- Mixing sum/product

Expected difficulty: ★☆☆ (Easy)

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8) Vertex of Quadratic

Concepts checked:

- Formula: $x = -\frac{b}{2a}$
- Substituting back to find y

Common mistakes:

- Only finding x-coordinate
- Wrong substitution

Expected difficulty: ★☆☆ (Easy)

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9) Quadratic Inequality

Concepts checked:

- Factorization
- Checking region between roots (for $a > 0$)

Common mistakes:

- Writing equality instead of inequality
- Wrong interval direction

Expected difficulty: ★★☆ (Medium)

GENERAL CONCEPT REVIEW (1 Question)

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10) Weak Points Identification

Concepts checked:

- Self-reflection
- Using 3-layer revision method

Common mistakes:

- Writing vague weaknesses
- Not linking to actual study topics

Expected difficulty: ★☆☆ (Easy)