

## Worksheet: Chemical Kinetics

Gujarat State Board · Class 12 · Chemistry · 5 questions · 13 marks

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_ / 13

**Q1.** The half-life of a reaction is inversely proportional to the initial concentration. What is the order? [2 marks]

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**Q2.** A first-order reaction has  $k = 1.0 \times 10^{-3} \text{ s}^{-1}$ . Find  $t_{\text{half}}$  and the time for 75% completion. [3 marks]

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**Q3.** A zero-order reaction has  $k = 0.04 \text{ mol/L/s}$  with initial concentration 1 M. Find  $t_{\text{half}}$  and time for 90% completion. [3 marks]

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**Q4.** Doubling [A] doubles the rate; doubling [B] quadruples it. Write the rate law and overall order. [2 marks]

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**Q5.**  $k = 2.0 \times 10^{-3} \text{ s}^{-1}$  at 300 K and  $8.0 \times 10^{-3} \text{ s}^{-1}$  at 400 K. Find  $E_a$ . [3 marks]

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