CHEMISTRY

NCERT - FULL MARKS CHEMISTRY(TAMIL)

CHEMICAL KINETICS - I

Questions A Choose The Correct Answer

1. $\mathrm{mol.dm}^{-3}\mathrm{sec}^{-1}$ is the unit of

A. rate

B. rate constant

C. order

D. active mass

Answer:

2. The elementary step with slow rate represents

    A. rate determining step

    B. maximum rate step

    C. third order rate

    D. overall order

Answer:

3. Molecularity is determined for

A. an elementary reaction

B. an overall reaction

C. an over all stoichiometric reaction

D. a fractional order reaction

Answer:

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Questions B Fill Up The Blanks

1. Decomposition of aqueous NH_4NO_2 proceeds by
_____reaction.

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2. Fractional orders are found in _____reaction.

3. In a _____reaction rate does not depend on the reactant

Questions C Match The Following

1.

7. slow step	a. experimentally
8. order	b. zero order
9. molecularity	c. rate determining step
10. unit of order .k.	d. maximum rate
11. rate independent of reactant	theoretical concept concentration
	f. $\sec^{-1}$

Questions D Write Very Short Answers

1. Define half life period.

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2. Name the factors that affect the rate of reaction.

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3. What is molecularity?

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4. Explain the rate determining step with an example.

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5. List the factors on which an order of the reaction depend.

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6. Write the rate law of $2N_2O_{5(g)} \rightarrow 4NO_{2(g)} + O_{2(g)}$ reaction.

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7. Define rate of reaction.

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1. Compare and contrast the terms, order and molecularity of a reaction.

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2. List the factors on which an order of the reaction depend.

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3. What is a pseudo order reactions? How do you experimentally determine the pseudo first order rate constant of acid hydrolysis ester reaction?

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4. Write the rate law of $2N_2O_{5(g)} \rightarrow 4NO_{2(g)} + O_{2(g)}$ reaction.

5. In I order reaction the initial concentration of the reactant as 0.05 mole/litre and the rate constant 1.5×10^{-3} min^{-1}. What is the initial rate of the reaction.

    A. 7.5×10^{-5} $mol\ lit^{-1}min^{-1}$

    B.

    C.

    D.

Answer:

6. If a reaction with $t1/2 = 69.3$ second, has a rate constant value of 10^{-2} per second. Calculate the order of the reaction.

A. One

B.

C.

D.

Answer:

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7. The time for half life of a first order reaction is 1 hr. what is the time taken for 87.5% completion of the reaction?

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1. $\mathrm{mol.dm^{-3}sec^{-1}}$ is the unit of

   A. rate

   B. rate constant

   C. order

   D. active mass

Answer:

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2. The elementary step with slow rate represents

   A. rate determining step

   B. maximum rate step

C. third order rate

D. overall order

Answer:

3. Molecularity is determined for

A. an elementary reaction

B. an overall reaction

C. an over all stoichiometric reaction

D. a fractional order reaction

Answer:

4. Decomposition of aqueous NH_4NO_2 proceeds by

_____reaction.

5. Fractional orders are found in _____reaction.

6. In a _____reaction rate does not depend on the reactant

7.

7. slow step	a. experimentally
8. order	b. zero order
9. molecularity	c. rate determining step
10. unit of order .k.	d. maximum rate
11. rate independent of reactant	theoretical concept concentration
	f. $\sec^{-1}$

8. Define half life period.

9. Name the factors that affect the rate of reaction.

10. What is molecularity?

11. What is a rate determining step?

12. List the factors on which an order of the reaction depend.

13. Write the rate law of $2N_2O_{5(g)} \rightarrow 4NO_{2(g)} + O_{2(g)}$ reaction.

14. Define the rate of a reaction.

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15. Compare and contrast the terms, order and molecularity of a reaction.

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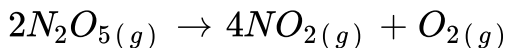**16.** List the factors on which an order of the reaction depend.

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17. What is a pseudo order reactions? How do you experimentally determine the pseudo first order rate constant of acid hydrolysis

ester reaction?

18. Discuss the rate of the reaction

$$2N_2O_{5(g)} \rightarrow 4NO_{2(g)} + O_{2(g)}$$

19. If a reaction with $t1/2 = 69.3$ second, has a rate constant value of 10^{-2} per second. Calculate the order of the reaction.

A. One

B.

C.

D.

Answer:

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20. The time for half life of a first order reaction is 1 hr. what is the

time taken for 87.5% completion of the reaction?

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