|  |  |
| --- | --- |
| Division | 12th |
| Subject | Chemistry |
| Chapter | Chemical Kinetics |
| Author | Ruhani kashni |
| Category | 04 |

|  |
| --- |
| The activation energy of the reaction can be determined from the slope of which of the following graphs  (2012) |
| ln K Vs T |
| T/ln K Vs 1/T |
| ln K Vs 1/T |
| ln k Vs 1/ T |
| d |
| Activation energy is the minimum amount of energy that must be provided to compounds to result in a chemical reaction. The activation energy (Ea) of a reaction is measured in joules per mole (J/mol). |
| The activation energy of the reaction can be determined by the graph ln k Vs 1/T and this is straight line.  Slope of the Line = -Ea/R |
| Rate of a Chemical Reaction |

|  |
| --- |
| The time taken for completing 90% of a first order reaction  (2010) |
| 2.2 times that of half life |
| 4.4 times that of half life |
| 1.1 times that of half life |
| 3.3 times that of half life |
| d |
| For the first order reaction  Half-life, t1/2 = 0.693/k |
| t90% = 2.303/k log 100/100-90  =t50% = 2.303/k log 100/100-50  Dividing t90%/t50% = log 10/log 2  = 3.3 times that of half life |
| Rate of a Chemical Reaction |

|  |
| --- |
| 60 s⁻¹ is the rate constant for first order reaction. How much time will it take to reduce the concentration of the reactant to 1/10 th of its initial value  (2018) |
| 25.7 sec |
| 0.038 sec |
| 34.56 sec |
| 0.25 sec |
| b |
| Order of reaction is independent upon the factors like temperature, pressure and volume and that’s why first order reaction doesn’t depend on any of these considerations. |
| For the first order reaction  =t = 2.303/k log [A]o/[A]  =t= 2.303/60 log [A]o/[A]o/10 = 2.303/60 log 10  = 0.038 s |
| Average rate |

|  |
| --- |
| The rate constant for a reaction have value was to 2.0× 10⁻³ mol lit⁻¹ s⁻¹. What will be the order of reaction for this reaction  (2009) |
| 0 |
| 1 |
| 2 |
| 3 |
| b |
| Order of reaction is independent upon the factors like temperature, pressure and volume and that’s why first order reaction doesn’t depend on any of these considerations. |
| In the question the unit of k is equals to mol lit⁻¹ s⁻¹ Hence it is a first order reaction, here n=1. |
| Average rate |

|  |
| --- |
| Find the minimum value of activation energy for an endothermic reaction which has a positive internal energy change ∆U  (2013) |
| ∆U = Ea + RT |
| ∆U |
| ∆U = ∆H -∆nRT |
| None of the above |
| b |
| Activation energy is the minimum amount of energy that must be provided to compounds to result in a chemical reaction. The activation energy (Ea) of a reaction is measured in joules per mole (J/mol). |
| For an endothermic reaction which has a positive internal energy change ∆U have minimum value of activation energy equals to ∆U. |
| Instantaneous rate |

|  |
| --- |
| At 300 k, the value of rate constant is equals to 6.93 × 10⁻³ min⁻¹ for a gas phase decomposition A → 2B  (2015) |
| 12.5 % |
| 15 % |
| 2.5 % |
| 18.3 % |
| a |
| For the first order reaction  Half-life, t1/2 = 0.693/k |
| For the first order reaction  Half-life t1/2 = 0.693/6.93 × 10⁻³ = 100 min  = 300 = 100× n  Percentage left = 100/(2)³  = 12.5 % |
| Instantaneous rate |

|  |
| --- |
| What would be the energy of activation of products for exothermic reaction  (2005) |
| Greater than the energy of activation of reactant |
| Sometime greater and sometimes less than that of reactant |
| Equal to the activation energy of reactants |
| None of the above |
| a |
| Activation energy is the minimum amount of energy that must be provided to compounds to result in a chemical reaction. The activation energy (Ea) of a reaction is measured in joules per mole (J/mol). |
| Activation energy of reactant is less than the activation energy of products. |
| Factors Influencing Rate of a Reaction |

|  |
| --- |
| For the reaction 2P + Q → R, the rate = k[P][Q]. Which statement is correct for this reaction  (2011) |
| Half-life is constant |
| Rate of formation of R is twice the rate of disappearance of P |
| Value of k is Independent of the initial concentration of P and Q |
| The unit of k is s⁻¹ |
| c |
| Order of reaction is independent upon the factors like temperature, pressure and volume and that’s why first order reaction doesn’t depend on any of these considerations. |
| The velocity constant depends upon the temperature only. It is independent of the concentration of reactants. |
| Factors Influencing Rate of a Reaction |

|  |
| --- |
| Find the half-life for first order reaction C→ D, here the initial concentration of the reactant C is 0.5 M and the rate constant is represented by the symbol 'k'  (2017) |
| ln2/k |
| log2/k |
| 0.693/0.5k |
| log2/k√0.5 |
| a |
| Unit of rate constant for first order reaction is s⁻¹  Rate = k[A]  Mol L⁻¹/s = k (mol L⁻¹)  = k = s⁻¹ |
| For the first order reaction  K = 2.303/t log c/c-x  When t = t1/2  K = 2.303/t1/2 log c/c-c/2  Or t1/2 = 2.303/k log 2  = ln2/k |
| Concentration |

|  |
| --- |
| For every 10° C rise in temperature the velocity of a reaction is doubled. Find the velocity increase if the temperature is raised to 50° C.  (2020) |
| 71 times |
| 32 times |
| 35 times |
| 65 times |
| b |
| Order of reaction is independent upon the factors like temperature, pressure and volume and that’s why first order reaction doesn’t depend on any of these considerations. |
| If at every 10° rise in temperature the velocity of reaction is doubled. Rise at 50° C becomes 5 tens hence (2) is equals to 32. |
| Concentration |

|  |
| --- |
| The energy of activation energy of forward reaction is 80 kcal. What would be the energy of activation for reverse reaction  (2020) |
| 80 kcal |
| > 80 kcal |
| < 80 kcal |
| Either greater than or less than 80 kcal |
| d |
| Activation energy is the minimum amount of energy that must be provided to compounds to result in a chemical reaction. The activation energy (Ea) of a reaction is measured in joules per mole (J/mol). |
| The activation energy of a reverse reaction decide whether the given reaction is exothermic and endothermic, so, the energy of activation of reverse reaction is either greater or less than 80 kcal. |
| Temperature |

|  |
| --- |
| The rate of particular reaction triples when temperature changes from 50° C to 100° V. Calculate the activation energy of the reaction  (2016) |
| 22.012 × 10³ |
| 2.5 × 10² |
| 3.5 × 10³ |
| 5.5065 × 10³ |
| A |
| Activation energy is the minimum amount of energy that must be provided to compounds to result in a chemical reaction. The activation energy (Ea) of a reaction is measured in joules per mole (J/mol). |
| For the given question  K2/k1 = 3  Log 3 = Ra/2.303 × 8.314 log (373-323)373×273)  = Ea = 22.012 × 10³ |
| Temperature |

|  |
| --- |
| For catalytic decomposition half-life period of PQ3 at 50 mm Hg is 4 hrs and at 100 mm Hg it is 2 hrs. The order of reaction is  (2014) |
| 0 |
| 1 |
| 2 |
| 3 |
| b |
| Order of reaction is independent upon the factors like temperature, pressure and volume and that’s why first order reaction doesn’t depend on any of these considerations. |
| t1/2 ∝ 1/(p)ⁿ⁻¹where n is the order of reaction  2/4 = (50/100)ⁿ ⁻¹  So, n= 2 |
| Catalyst |

|  |
| --- |
| The rate constant for the reaction are 2.0 mol L⁻¹s⁻¹ and 32.0 mol L⁻¹s⁻¹at 709 K and 800 K. Calculate the activation energy for reaction  (2014) |
| 253.1 KJ mol⁻¹ |
| 129.1 KJ mol⁻¹ |
| 3.45 KJ mol ⁻¹ |
| 43.8 KJ mol ⁻¹ |
| b |
| Activation energy is the minimum amount of energy that must be provided to compounds to result in a chemical reaction. The activation energy (Ea) of a reaction is measured in joules per mole (J/mol). |
| According to the question  log 32.0/2.0 = Ea/ 2.303 × 8.314 [ 800-700/700×800]  = Ea = 129.1 KJ/mol |
| Catalyst |

|  |
| --- |
| At 600 K the rate constant for reaction is 1.6 × 10⁻⁵and at 700 k the rate constant for the reaction is 6.36 × 10⁻³ . Calculate the activation energy for the reaction  (2018) |
| 105.6 KJ/mol |
| 209.01 KJ/ mol |
| 3.45 KJ/ mol |
| 5.43 KJ / mol |
| b |
| Activation energy is the minimum amount of energy that must be provided to compounds to result in a chemical reaction. The activation energy (Ea) of a reaction is measured in joules per mole (J/mol). |
| For the given question  Log 6.36 × 10⁻³/1.6 × 10⁻⁵  Ea /2.303× 8.314 [700-600/600×700]  Ea = 209.01 KJ/mol |
| Integrated Rate Equations |

|  |
| --- |
| For every 10° C rise in temperature the rate of the reaction is doubled for zero order reaction. If the temperature is increased from 10° C to 100° C, the rate of reaction will become  (2019) |
| 512 times |
| 72 times |
| 314 times |
| 269 times |
| a |
| Order of reaction is independent upon the factors like temperature, pressure and volume and that’s why first order reaction doesn’t depend on any of these considerations. |
| For 10° rise in temperature, n= 1  So rate = 2ⁿ = 2¹. = 2  When temperature is increased from 10°C to 100° C, change in temperature  = 100-10 = 90° C  =n = 9  So rate becomes = 2⁹ = 512 times |
| Integrated Rate Equations |

|  |
| --- |
| According to the collision theory of reaction rates the rate of reaction increases with temperature due to  (2002) |
| Decrease in the activation energy |
| Greater number of collision |
| High velocity of reacting molecules |
| None of the above |
| b |
| The subject of chemical kinetics can be explained by the Arrhenius equation, the activation complex theory and also by the collision theory of bimolecular reaction. |
| According to the collision theory of reaction rates the rate of reaction increases with temperature due to greater number of collisions. |
| Temperature Dependence of the Rate of a Reaction |

|  |
| --- |
| For first order reaction the concentration of reactant decreases from 0.8 N to 0.4 M in 15 min. The time taken for concentration to change from 0.1 M to 0.025 M  (2011) |
| 30 min |
| 75 min |
| 55 min |
| 10 min |
| a |
| Unit of rate constant for first order reaction is s⁻¹  Rate = k[A]  Mol L⁻¹/s = k (mol L⁻¹)  = k = s⁻¹ |
| If the half life period is 15 minutes.  For falling the concentration from 0.1 to 0.025 we need half lives equals to 30 min. |
| Temperature Dependence of the Rate of a Reaction |

|  |
| --- |
| Consider the chemical reaction N₂ + 3H₂ → 2NH₃  If d[NH₃]/dt = 3×10⁻⁴ mol L⁻¹ s⁻¹ then the value of -d[H]/dt will be  (2004) |
| 2 × 10⁵ |
| 2.6 × 10³ |
| 3 ×10⁻⁴ |
| 5.5 × 10⁻⁴ |
| c |
| Rate law is the expression in which reaction rate is given in term of Molar concentration of reactants with each term raised to some power which may or may not be same as the stoichiometric coefficient of the reaction species in a balanced chemical equation |
| For the reaction N₂ + 3H₂ → 2NH₃  Rate = -d [N₂]/dt = -1/3 d[H₂]/dt = +1/2 d[NH₃]/dt  = -d[H₂]/dt = 3/2 × 2× 10⁻⁴  = 3×10⁻⁴ |
| Collision Theory of Chemical Reaction |

|  |
| --- |
| The reaction A → B follows the first order kinetics. The time taken for 0.8 mole of A to produce 0.6 mole of B in 1h. What is the time taken for the conversion of 0.9 mole of A to 0.675 mole of B  (2020) |
| 0.25 h |
| 2 h |
| 1h |
| 0.5 h |
| c |
| Rate constant for first order reaction  K = 2.303/t log10 (A)o/(A)t  = K = 2.303/1 × log10 × 0.8/0.2……….(1) |
| Suppose t1 hour are required for Changing the concentration of A from 0.9 to 0.675 mole of B.  Remaining mole of A = 0.9 – 0.675 = 0.225  = k = 2.303/t1 log10 0.9/0.225……………….(2)  From equations (1) and (2) we get  2.303/1 log 10 0.8/0.2. = 2.303/t1 log10 0.9/0.225  2.303 log10 4 = 2.303/t1 log10 4  =t1 = 1h |
| Collision Theory of Chemical Reaction |

|  |
| --- |
| A drop of 0.05 ml solution contains 6× 10⁻⁷ mol of H⁺. If the rate of disappearance of H⁺ is 6.0 × 10 mol lit⁻¹ s⁻¹, how long will it take for the H⁺ in the drop to disappear  (2020) |
| 2.0 × 10⁻⁸ s |
| 6.0 × 10⁻⁶ s |
| 2.0 × 10⁻² s |
| 8.0 ×10⁻⁸ s |
| a |
| Rate law is the expression in which reaction rate is given in term of Molar concentration of reactants with each term raised to some power which may or may not be same as the stoichiometric coefficient of the reaction species in a balanced chemical equation |
| [H⁺] = 6×10⁻⁷/0.05 ×10⁻³  = 1.2 × 10⁻² M  Rate r = ∆x/∆t  ∆t = ∆x/r = 1.2 × 10⁻² M/6×10⁵ Ms⁻¹  T = 2×10⁻⁸ s |
| Definition of Molecularity of a reaction |

|  |
| --- |
| For the first order reaction the half-life is 6.93 minutes. The time required for completion of 99% of the chemical reaction will be  (2017) |
| 23.45 min |
| 56.06 min |
| 46.06 min |
| 25.31 Min |
| c |
| The half-life of a reaction is the time in which the concentration of a reactant is reduced to one half of its initial concentration. |
| For first order reaction  K = 0.693/t1/2 = 0.693/6.93  K = 2.303/t log ×100/10-99  0.693/6.93 = 2.303/t log ×100/1  0.693/6.93 = 2.303× 2/t  =t = 46.06 min |
| Definition of Molecularity of a reaction |

|  |
| --- |
| The 3/4 th of a first order reaction takes 32 minutes to complete. What would be the half-life period for this reaction  (2018) |
| 18 min |
| 16 min |
| 30 min |
| 19 min |
| b |
| The half-life of a reaction is the time in which the concentration of a reactant is reduced to one half of its initial concentration. |
| For first order reaction  K = 2.303/32 log a/1/4a  = 0.0433  t1/2 = 0.693/0.0433  = 16 min |
| Definition of Rate law |

|  |
| --- |
| For the given integrated rate equation  RT = log Co -log Ct, The straight-line graph is obtained by plotting  (2015) |
| Time Vs Ct |
| Time Vs log Ct |
| 1/time Vs Ct |
| 1/time Vs 1/Ct |
| b |
| Order of reaction is independent upon the factors like temperature, pressure and volume and that’s why first order reaction doesn’t depend on any of these considerations. |
| For the given integrated rate equation  RT = log Co -log Ct  The straight-line graph is obtained by plotting Time Vs log Ct |
| Definition of Rate law |

|  |
| --- |
| The rate of reaction between two reactants A and B decreases by a factor of 4, if the concentration of reactant B is doubled. The order of this reaction with respect to reactant B is  (2014) |
| 0 |
| 1 |
| -1 |
| -2 |
| d |
| Order of reaction is independent upon the factors like temperature, pressure and volume and that’s why first order reaction doesn’t depend on any of these considerations. |
| A + B gives product  So, rate ∝ [A]ˣ[B]ʸ.......(1)  The rate decreases by the factor 4  1/4 ∝[A]ˣ[2B]ʸ.......(2)  By dividing eq. 1 and 4/(1/2)ʸ  Y=-2 |
| Specific rate constant |

|  |
| --- |
| Find the order of reaction for a reaction whose half-life decomposition of gaseous CH3OH at constant temperature and initial pressure of 364 mm, 170 mm of Hg is 410 sec and 880 sec respectively.  (2011) |
| 2.0 |
| 2.5 |
| 1.5 |
| 4.5 |
| a |
| Order of reaction is independent upon the factors like temperature, pressure and volume and that’s why first order reaction doesn’t depend on any of these considerations. |
| t1/2 (1)/t1/2(2) = [ p(2)/p(1)] ⁿ⁻¹  = 880/410 = [364/170] ⁿ⁻¹  [2.14]¹ = [2.1] ⁿ⁻¹ |
| Specific rate constant |

|  |
| --- |
| The rate constants for decomposition of acetaldehyde have been measured over the temperature range . The data has been analysed by plotting In k vs graph. The value of activation energy for the reaction is . (Nearest integer) (Given : )    (2022) |
| 153 |
| 142 |
| 161 |
| 134 |
| a |
|  |
| Arrhenius equation, which relates the rate constant (k) to the temperature (T) and the activation energy (Ea):  k = A× exp(-Ea / (RT)) |
| Integrated rate equations |

|  |
| --- |
| For a given chemical reaction  Concentration of changes from to in 10 seconds. Rate of appearance of is 1.5 times the rate of disappearance of which is twice the rate of disappearance . The rate of appearance of has been experimentally determined to be . Therefore the rate of reaction is . (Nearest Integer)  (2022) |
| 3 |
| 2 |
| 1 |
| 4 |
| c |
|  |
| The rate of reaction, in short, is the speed at which a chemical reaction takes place. |
| Integrated rate equations |

|  |
| --- |
| At , the half life for the decomposition of a sample of a gaseous compound initially at was . When the pressure was , the half life was fund to be . The order of the reaction is . [integer answer]  (2022) |
| 0 |
| 1 |
| 2 |
| 3 |
| a |
|  |
| To determine the order of the reaction, we can use the half-life formula for a first-order reaction:  t1/2 = (0.693 / k)  Where: t1/2 is the half-life of the reaction, k is the rate constant of the reaction. |
| Zero order reaction |

|  |
| --- |
| Catalyst A reduces the activation energy for a reaction by at The ratio of rate constants,, ex. The value of x is \_\_\_\_\_\_\_.[nearest integer] [Assume theat the pre-exponential factor is same in both the cases.  (2022) |
| **1** |
| 2 |
| 3 |
| 4 |
| d |
|  |
| To solve this problem, we'll use the Arrhenius equation, which relates the rate constant (k) of a reaction to the activation energy (Ea) and the temperature (T):  k = A × e(-Ea / (R × T)) |
| Zero order reaction |

|  |
| --- |
| The rate constant for a first order reaction is given by the following equation:  The Activation energy for the reaction is given by . (In Nearest integer)  (2022) |
| 152 |
| 166 |
| 173 |
| 181 |
| b |
|  |
| To find the activation energy for the reaction, we can use the Arrhenius equation, which relates the rate constant (k) to the temperature (T) and the activation energy (Ea):  k=Ae−Ea/RTk |
| First order reaction |

|  |
| --- |
| It has been found that for a chemical reaction with rise in temperature by the rate constant gets doubled. Assuming a reaction to be occurring at , the value of activation energy is found to be . [nearest integer]  (Given )  (2022) |
| 27 |
| 48 |
| 59 |
| 65 |
| c |
|  |
| To find the activation energy (Ea) for the given reaction, we can use the Arrhenius equation: |
| First order reaction |

|  |
| --- |
| For a first order reaction , the rate constant, . The time required for completion of reaction is times the half life of reaction. The value of is  (Nearest integer)  (Given : )  (2022) |
| 15 |
| 16 |
| 17 |
| 18 |
| b |
|  |
| In a first-order reaction, the integrated rate law is given by:      That is nearest 16. x = 16 |
| Third order reaction |

|  |
| --- |
| A radioactive element has a half life of 200 days. The percentage of original activity remaining after 83 days is . (Nearest integer)  (Given : , antilog 4.93)  (2022) |
| 75% |
| 62% |
| 83% |
| 41% |
| a |
|  |
| o find the percentage of original activity remaining after 83 days, we can use the formula for radioactive decay:  Remaining Activity= |
| Definition of half-life of a reaction |

|  |
| --- |
| The activation energy of one of the reactions in a biochemical process is . When the temperature falls from to , the change in rate constant observed is . The value of is  [Given:  ]  (2022) |
| 4 |
| 3 |
| 2 |
| 1 |
| d |
|  |
| To find the value of x, we can use the Arrhenius equation, which relates the rate constant (k) to the temperature (T) and the activation energy (Ea): |
| Temperature and rate constants |

|  |
| --- |
| The equation is followed for the decomposition of compound .  The activation energy for the reaction is . [nearest integer]  (Given: )  (2023) |
| 312 |
| 216 |
| 512 |
| 614 |
| b |
|  |
| we can use the Arrhenius equation |
| Half-life of a zero order reaction |

|  |
| --- |
| A student has studied the decomposition of a gas at . He obtained the following data.    The order of the reaction is  (2023) |
| 0.5 |
| 2 |
| 1 |
| 0 |
| b |
|  |
| The order of a reaction with respect to a particular reactant is the exponent to which the concentration of that reactant is raised in the rate equation. |
| Half-life of a zero order reaction |

|  |
| --- |
| The variation of the rate of an enzyme catalyzed: reaction with substrate concentration is correctly represented by graph    (2023) |
| b |
| c |
| d |
| a |
| b |
|  |
| According to michaelis menten equation- rate of reaction follow the curve Vs concentration of substrate . |
| Half-life of a first order reaction |

|  |
| --- |
| For the first order reaction Br the half life is . The time taken for completion of the reaction is mm. (Nearest mteger)  Given :  (2023) |
| 20 |
| 30 |
| 50 |
| 60 |
| d |
|  |
| For a first-order reaction, the half-life (t1/2) is given by the formula: |
| Half-life of a first order reaction |

|  |
| --- |
| For conversion of compound , the rate constant of the reaction was found to be  . The order of the reaction is  (2023) |
| 1 |
| 2 |
| 3 |
| 4 |
| b |
| Rate = k × [A]2 |
| To determine the order of the reaction, we need to use the rate equation and the given rate constant (k).  For a second-order reaction, the rate equation is given by:  Rate = k × [A]2 |
| Concept of collision theory |

|  |
| --- |
| If compound reacts with following first order kinetics with rate constant . The time taken by A (in seconds) to reduce from to will be . (Nearest Integer)  (2023) |
| 623 |
| 512 |
| 453 |
| 243 |
| a |
|  |
|  |
| Concept of collision theory |

|  |
| --- |
| An organic compound undergoes first order decomposition. If the time taken for the decomposition is , then the time required for decomposition will be is  Given :  (2023) |
| 1269 |
| 1154 |
| 1350 |
| 1452 |
| c |
|  |
| Since the decomposition of the organic compound is a first-order reaction, we can use the following equation to relate the extent of reaction to time:  ln([A]₀ / [A]) = kt |
| Concept of Activation energy |

|  |
| --- |
| The rate constants of the above reaction at and are and respectively. The activation energy for the reaction is (Nearest integer)  (Given : In  (2023) |
| 2520 |
| 1130 |
| 1421 |
| 991 |
| a |
|  |
| To determine the activation energy (Ea) for the reaction, we can use the Arrhenius equation, which relates the rate constant (k) to temperature (T) and the activation energy (Ea):  k = A ×exp(-Ea / RT) |
| Concept of Activation energy |

|  |
| --- |
| Match List-I with List-II    (2023) |
|  |
| A - III, B - IV, C - I, D - II |
| I |
| A - II, B - I, C - IV, D - III |
| d |
| Physisorption and chemisorption. |
|  |
| Activation Energy Diagram |

|  |
| --- |
| The rate constant for a first order reaction is . The time required for the initial concentration of the reactant to reduce to its level is . (Nearest integer)  (Given :    (2023) |
| 15 |
| 16 |
| 17 |
| 18 |
| c |
|  |
| For a first-order reaction, the rate equation is given by:  Rate = k × [A] |
| Activation Energy Diagram |

|  |
| --- |
| and are two substances undergoing radioactive decay in a container. The half life of is and that of is . If the initial concentration of B is 4 times that of A and they both start decaying at the same time, how much time will it take for the concentration of both of them to be same? .  (2023) |
| 12 |
| 13 |
| 14 |
| 15 |
| d |
| [A] = [A]₀ / 2 |
| Let's denote the initial concentration of substance A as [A]₀ and the initial concentration of substance B as [B]₀. Given that the initial concentration of B is 4 times that of A, we have:  [B]₀ = 4[A]₀  The half-life of substance A is 15 minutes, which means that after 15 minutes, the concentration of A will be reduced to half of its initial value:  [A] = [A]₀ / 2 |
| Arrhenius equation |

|  |
| --- |
| The graph which represents the following reaction is :  (2023) |
|  |
|  |
|  |
|  |
| c |
| SN1 reaction |
| It is SN1 reaction so rate of reaction depends on the concentration of alkyl halide only. the rate of reaction depends on the concentration of alkyl halide only" is generally true for a specific type of reaction known as a unimolecular reaction or a first-order reaction involving alkyl halides. |
| Arrhenius equation |