Reaction Kinetics

Sr	Questions	Answers Choice
1	The catalytic activity of Pt is much higher when	A. It is mixed with asbestos B. It is mixed with Pd C. It is mixed with arsenic D. In is made colloidal platinum
2	The sum of the exponents of the conc. terms in the rate equation is called	A. Rate of reaction B. Order of reaction C. Specific rate constant D. Average rate
3	A pseudo uni-molecular reaction has order of reaction :	A. 3 B. 2 C. 1 D. 0
4	which one of the following is a heteroheneous catalysis	
5	When the rate of reaction is entirely independent of the conc. of reaction molecules then order of reaction is	A. Zero B. First C. Second D. Third
6	Which technique is used to determine the absorption of radiations?	A. Dilatometer method<o:p></o:p> B. Optical rotation method<o:p></o:p> C. Spectrometry<o:p></o:p> D. Refractometric method<o:p></o:p>
7	The chemical method used for determination of rate of reaction is	A. Spectroscopic B. Conductiometric C. Refractometric D. Titration
8	With increases in temperature of 10 K of the reacting gases the rate of reaction is doubled because	A. Increase in number of collisions B. Number of molecules having energy more than Ea is doubled C. Increase in order of reaction D. Increase in surface area
9	If the rate equation of a reaction 2A+B-------->Products is , Rate = K[A] [B], and A is present in large excess, then order of reaction is :	A. 1 B. 2 C. 3 D. Above
10	Question Image	A. Initial concentration of reaction B. Initial concentration of products C. Final concentration of products D. Order of the reaction
11	Complex protein molecules which catalyses the organic reactions in the living cells are called	A. Living organisms B. Enzymes C. Viruses D. Bacteria
12	Question Image	A. Small change in concentration of product B. Small time internal C. Co-efficient of the reactant D. Co-efficient of the product
13	If initial concentration of the reactants and half life period of the reaction is known, then we can determine	A. Average rate of reaction B. Order of reaction C. Rate constant k D. Instantaneous rate
14	Rate law of an equation is obtained :	A. From a balance equation. B. Can be calculated theoretically as well as determined experimentally. C. It is only calculated theoretically. D. Experimentally.
15	If the rate of reaction is independent of the concentration of the reactant,	A. Zero order B. First order

	the reaction is of	C. Second order D. Third order
16	The value of activation energy Ea of a reaction can be determined from the value of slope of the straight line obtained by plotting a graph between 1/T and log k. the value of Ea is equal to	A. Slope B. 1/Slope C. Slope x R D. Slope x 2.303 R
17	Question Image	A. 1st order B. 2nd order C. Zero order D. 3rd order
18	The experimental relationship between a reaction rate and the concentration of reactants is called	A. Order or reaction B. Rate law C. Activated complex D. Molecularity
19	In the expression rate = K $[A]^a[B]^b$K is	A. The order of reaction B. The speed of reaction C. The specific rate constant D. The overall order of reaction
20	Hydrolysis of ethyl-acetate (ester) has order of reaction :	A. 3 B. 2 C. 1 D. 1
21	Which statement is not correct	A. Enzymes catalyst a specific reaction B. Enzymes show catalytic activity at a specific temperature C. The catalytic activity of enzymes is stopped if optimum pH is changed D. The catalytic activity is poisoned by a co-enzymes
22	The change in concentration of reactant or product per unit time is called :	A. Rate constant. B. Rate of reaction. C. Rate equation. D. Rate law.
23	Which of the following is not affected by light	
24	Homogenous catalysis is that in which catalyst and reactants are in same phase. Which one of the following reaction is a homogenous catalysis	
25	The unit of rate constant k is the same as that of the rate of reaction in	A. First order reaction B. Second order reaction C. Third order reaction D. Zero order reaction
26	Which one of the following reaction rate is effected by the light	
27	With the progressive of the reaction the slope of the curve between concentration of product and time	A. Gradually becomes more steep B. Gradually becomes less steep C. No change occurs in slope D. None of these occurs
28	It is common observation that rates of chemical reactions differ :	A. Greatly. B. A little bit. C. Moderately.
29	Value of rate constant k is specific for a reaction, and varies from reaction to reaction. The value of k of a reaction changes with	A. Time B. Temperature C. Concentration of reactants D. Order of reaction
30	In exothermic reaction decrease in potential energy of the products will result in	A. Decreases in kinetic energy of the particles B. Increases in kinetic energy of the particles C. No change in kinetic energy D. Decreases in activation energy
31	The unit of rate constant K is $mole^{-1}$ $dm^3$for a chemical reaction, the order of reaction is :	A. Order of reaction can determined by an experiment B. Order of reaction can determined from a balance equation only. C. Order of reaction can determined increases by increasing temperate. D. Order of reaction must be in whole number and not in fraction.
32	Platinum is poisoned by	A. Arsenic B. Silver C. Argon D. Zinc
33	When initial concentration of reactants an order of reaction is given, then its half life period can be calculated by the equation	
	For effective collisions the molecules slow down before collision and their	A. Activation energy B. Average energy

34	kinetic energy decreases which results in increase in their	C. Potential energy D. Collisions frequency
35	In zero order reaction, the rate is independent of :	A. Temperature of reaction B. Concentration ofreactants C. Concentration of products D. None of these.
36	The rate constant k of a reaction activation energy Ea and temperature are related by Arrhenius in the form of an equation which is	
37	In the rate equation when the concentration of reactants are unity, then rate is equal to	A. Instantaneous rate B. Average rate C. Active mass of products D. Specific rate constant
38	A white precipitate ofsilver chlorideimmediately formed on additionof :	A. Silver nitrate solution to sodium chloride solution. B. Silver chloride solution to sodium nitrate solution. C. Silver nitrate solution to potassium chloride solution D. Silver nitrate solution to hydrogen chloride solution.
39	In the hydrolysis of $CH_3COOC_2H_5$the acid produced is	A. Inhibitor B. Catalyst C. Auto catalyst D. None of above
40	Which of the following will affect the rate :	A. First step of reaction. B. Last step of reaction. C. Rate determining step. D. Fastest step.
41	If the rate of decay of radioactive isotope decreases from 200 cpm to 25 cpm after 24 hours, what is its half life :	A. 8 hours B. 6 hours C. 4 hours D. 3 hours
42	It rate law of an equation is written as$dx/dt=K[A][B]$?	A. Reaction is independent of the concentration of A and B. B. Product is decreasing with passage of time. C. Reactant in increasing with passage of time. D. Reactant is increasing with passage of time.
43	Group I-A elements react with water fastly than the reaction of group II-A elements because	A. I_Aelements are more soft then II_A B. I_Aelements are non-metals C. I_Aelements have 1 electron in their outermost s-orbital and are strongly electropositive D. I_Aelements make ionic bond
44	Which of the following reactions occur at moderate rate :	A. Rusting of iron B. Chemical weathering of stone work of buildings by acidic gases in atmosphere. C. Hydrolysis of an ester D. Fermentation of sugars
45	Rate of chemical reaction depends upon :	A. The number of total collisions per second. B. Number of molecules taking part in a chemical reaction. C. Number of fruitful collisions per second D. Number of fruitless collisions per second.
46	The rate of reaction :	A. Increase as the reaction proceeds. B. Decreases as the reaction proceeds. C. Remains the same as the reaction proceed. D. May decrease or increase as the reaction proceeds.
47	In the manufacture of $NH_3$by Haber's process catalyst used is iron its catalytic efficiency is poisoned by	A. Presence of Al₂O₃ B. Presence of Cr₂O₃ C. MnO₂ D. CO present with H₂gas
48	Which of the following factors does not influenced the rate of reaction	A. Concentration of the reaction B. Nature of the reactants C. Molecularity of the reaction D. Temperature
49	To determine the rate of reaction chemically a graphical method is applied. A graph is plotted between the amount or reactant decomposed or product formed against the time. The rate d_x/d_tat any time is equal to	A. k B. Tangentθ C. 1/a, a is initial conc. D. 1/a²
50	Question Image	
		A. dc/dt B. -dc/dt

51	Decreases om concentration of reactant is denoted by	B. -dc/dt C. +dc/dt D. None
52	Question Image	A. Zero B. 253 sec C. 150 sec D. 500 sec
53	In the reaction of oxalic acid with $KMnO_4$and $H_2SO_4$is slow at the beginning but after sometimes the reaction becomes faster due to	A. Formation of MnSO₄which acts as 'Auto catalyst B. Formation of CO₂which acts as 'Auto catalyst C. Formation of K₂SO₄which acts as 'Auto catalyst D. Evolution of O₂gas which acts as 'Auto catalyst
54	Dilatometer method is useful for the reaction that involve :	A. Small volume changes in solutions B. Change in infractive indices C. Where reactants absorb U.V, visible or infrared radiation
55	The rate determining step is the :	A. Slowest step. B. Fastest step. C. Moderate step. D. Both (a) and (b).
56	The number of atoms or molecules whose concentrations determine the rate of the reaction is called	A. Molecularity B. Order C. Rate of reaction D. Rate constant
57	The effective activity of a metal catalyst is increased if it is in	A. Solid form B. Liquid state C. Gaseous state D. Finely divided form
58	Which statement is true about order of reaction :	A. Order of reaction can only be determined by an experiment. B. Order of reaction can be determined from a balance equation only. C. Order of reaction increase by increasing temperature. D. Order of reaction must be in whole number and not in fraction.
59	Optical rotation method is sued when	A. Reaction involve ions B. Change of refractive indices C. Reactions involving change of optical activity D. None of the above
60	The rate of reaction between two specific time intervals is called	A. Instantaneous rate B. Average rate C. Specific rate D. Ordinary rate
61	The experimental relationship between a reaction rate and the concentration of reactants is known as	A. Order B. Molecularity C. Rate constant D. Rate law
62	In the hydrolysis of $CH_3COOC_2H_5$the acid produced is	A. Inhibitor B. Catalyst C. Auto catalyst D. None of above
63	Question Image	A. First order B. Pseudo first order C. Second order D. Zero order
64	By the use of catalysis the energy of activation is	A. Decreased B. Increased C. Not affected D. None
65	The rate of reaction determined at a given time is called	A. Average rate B. Instantaneous rate C. Specific rate D. Overall rate
66	The rate of reaction is denoted by	A. dc/dp B. dc/ac C. dc/dT D. dc/dt
67	Question Image	A. Rate = k[FeCl₃] [KI]² B. Rate = k[Fe⁺³][Cl⁻¹] [KI]

	Question Image	C. Rate = k[Fe⁺³] [Cl⁻¹][K;] D. Rate = k[Kl]³[FeCl₃]°
68	The unit rate of constan K is$mole^{-1}$ $dm^3S^{-1}$for a chemical reaction, the order of reaction is :	A. 3 B. 2 C. 1 D. 0
69	Question Image	A. Three times B. Six times C. Nine times D. Two times
70	Half life period of a reaction is inversely proportion to the initial concentration of the reactant, then order of reaction is	A. Third order B. Second order C. Fist order D. Zero order
71	A catalyst is a substance which increase the rate of a chemical reaction, but remains unchanged at the end of reaction, nut remains unchanged at the end of reaction, because	A. It increases the temperature B. It increase the surface area C. It increases the rate constant D. It decrease the energy energy of activation
72	The reaction rate is expressed in the units of	A. mol dm⁻³S⁻ B. mol dm⁻³ C. mol dm⁻³N⁻ D. dm⁻³S⁻
73	A zero order reaction is one in which :	A. Rate is not affected by changing concentration of reactants. B. concentration of reactants do not change with the passage of time. C. Reactants do not react. D. One reactants in large excess.
74	The unit of rate of reaction is	A. mole dm⁻³ B. mole Kg⁻¹ C. moles dm⁻³sec⁻¹ D. grams dm⁻³
75	Question Image	A. Diastase B. Lipase C. Inverters D. Zymase
76	Question Image	A. Homogeneous B. Heterogeneous C. Isogeneous D. None
77	Question Image	A. 2 B. 3 C. 4 D. 9
78	Refrectrometric method is used when	A. Reactions involving absorption of I.R. or U. V B. Reactions involving change of refractive index C. Reactions involving ions D. Change of optical activity
79	Hydrogenation of vegetable oils is accelerated by Ni catalyst. The catalytic activity of Bi is increased by a promoter of activator which is	A. Na and K B. Na and Hg C. Hg and Zn D. Cu and Te
80	A substance which increases the rate of a reaction without being consumed during the reaction is called	A. An autocatalyst B. A catalyst C. A negative catalyst D. All of these
81	For a chemical reaction to take place the particles must have sufficient energy for the effective collisions, the energy is called	A. Average energy B. Activation energy C. Potential energy D. Collision energy
82	Which of the following may affect the rate constant (k) fro a reaction :	A. Change in concentration. B. Change in pressure. C. Change in pH. D. Change in temperature.
83	The example of a photo chemical reaction is photosynthesis has order of reaction :	A. 1 B. 2 C. 0 D. 3
84	Half life period of $N_2O_5$is 24 minutes and it remains same where we increase or decrease its initial concentration, then reactions	A. Zero order B. First order C. Second order D. Third order

85	Activation energy is the difference of energy between the energy of the reactant and	A. The product B. The activated complex C. Both a and b D. None of these
86	The rate equation for a reaction is Rate =k[A]. what are unit of K ?	A. Mole-1 dm³ S⁻¹<o:p></o:p> B. Mole dm³ S⁻¹<o:p></o:p> C. Moledm³<o:p></o:p> D. S⁻¹<o:p></o:p>
87	If half life period of a reaction is independent of the concentration of the reactants, then the reaction is	A. Zero order B. First order C. Second order D. Order is in fraction
88	All reactions occur in :	A. A single step. B. A series of steps C. Two steps. D. Both (a) and (b)
89	When we perform the same reaction by taking two different initial concentrations of a reactant for a second order reaction then	A. Reaction becomes exothermic B. Energy of activation is different C. Mechanism of reaction is changed D. Half life period is changed
90	The unit of the rate constant is the same as that of rate of reaction in :	A. Third order reaction B. Second order reaction C. First order reaction D. Zero order reaction
91	The reaction rate is expressed in the units of	A. Mol dm⁻³S⁻ B. Mol dm⁻³ C. Mol dm⁻³N⁻ D. dm⁻³S⁻
92	Half life period of a first order reaction is independent of:	A. Presence of catalyst. B. Conditions of temperature C. Initial concentration of the compound D. All of above
93	The rate of reaction determined at a given time is called	A. Average rate B. Instantaneous rate C. Specific rate D. Overall rate
94	The rate of reaction :	A. Decreases as the reaction proceeds B. Increases as the reaction proceeds C. May decrease or increase reaction proceeds D. Remains same as the reaction proceeds
95	The factor which effect the rate of reaction	A. Nature of reactants B. Surface area C. Light D. All of the above
96	Dilatometric method is used for rate determination when	A. Reactions involving change of optical B. Reactions involving change of optical activity C. Reactions involving small volume change D. None of above
97	A white precipitate ofsilver chlorideimmediately formed on additionof :	A. Silver nitrate solution to sodium chloride solution. B. Silver chloride solution to sodium nitrate solution. C. Silver nitrate solution to potassium chloride solution D. Silver nitrate solution to hydrogen chloride solution.
98	If a reactant or product of a reaction absorbs radiation, then physical method for determining the rate of reaction is	A. Spectrometry B. Refractometry C. Conductivity measurement D. Optical method
99	The unit of rate constant is the same as that of the rate of reaction in :	A. First order reaction. B. Second order reaction. C. Zero order reaction. D. Third order reaction.
100	With increases of 10°C temperature the rate of reactiondoubles. This increase in rate of reactionis due to :	A. Decrease in activation energy or reaction. B. Decrease in number of collisions between reactant molecules. C. Increase in activation energy of reactants. D. Increase in number of effective collisions
101	The addition of a catalyst to a reaction changes the	A. Enthalpy B. Entropy C. Nature of reactants

		D. Energy of activation
102	_____ are called biocatalysts	A. Organic acids B. Organic bases C. Enzymes D. All
103	Question Image	A. Zero B. 1 C. 2 D. 1.5
104	When copper is allowed to react with HNO_3, the reaction is slow in the beginning, finally becomes very fast. It is due to the formation of an auto catalyst which is	A. Cu(NO₃)₂ B. CuO C. O₂ D. HNO₂
105	The rate of reaction b/w two specific time intervals is called :	A. Instantaneous rate of reaction. B. Average rate of reaction. C. Rate of a reaction. D. Minimum rate of a reaction.
106	In an experiment the concentration of a reactant 'A' is doubled the rate increases four times. If concentration in tripled, then rate increases nint times. Thus the rate is proportional to _____ of concentration of 'A'	A. Square root B. Square C. Twice D. Cube
107	The actual number of atoms or molecules taking part in rate determining step is	A. Rate of reaction B. Velocity of reaction C. Order of reaction D. Molecularly
108	Which statement about Arrhenius equation is incorrect	A. Factor 'A' called Arrhenius constant depends upon collision frequency of reactants B. Rate of reaction increase by increasing temperature C. Rate constant k is increased D. Activation energy Ea is decreased by rise in temperature
109	Question Image	A. Measuring pH B. Measuring density C. Titration against standard NaOH D. Titration against standard KMnO₄solution
110	Factor which slows down the rate of reaction is	A. Small size of the particles of the reactant B. High temperature of reaction C. More concentration of reactant D. Lowering the temperature
111	Question Image	A. Rate is independent of concentration of water since it is in excess B. Rate is independent of concentration of ester since it is in exces C. Rate depends upon the concentration of acid catalyst added D. Rate = k[CH₃COOC₂H₅]^{1/2}[H₂O]^{1/2}
112	In thermal decomposition of N_2O the half life period for two different initial concentrations of N_2O are (i) 255 second for initial N_2O 290 mm Hg (ii) 212 second for initial N_2O 360 mm Hg then it is	A. Zero order B. First order C. Second order D. Third order