CHAPTER 11
REACTION KINETICS
MCQS

Q.1   In zero order reaction, the rate is independent of
      (a)   temperature of reaction
      (b)   concentration of reactants
      (c)   concentration of products
      (d)   none of above

Q.2   If the rate equation of a reaction $2A + B$ ® Product, Rate $= k$ $[A]2 [B]$ and A is present in large excess then order of reaction is:
      (a)   1   (b)   2
      (c)   3   (d)   none of these

Q.3   The rate of reaction
      (a)   increases as the reaction proceeds
      (b)   decreases as the reaction proceeds
      (c)   remains the same as the reaction proceeds
      (d)   may decrease or increase as the reaction proceeds

Q.4   With increases of 10 oC temperature the rate of reaction doubles. This increase in the rate of reaction is due to
      (a)   decrease in activation energy of reaction
      (b)   decrease in the number of collisions b/w reactants molecules
      (c)   increase in activation energy of reactants
      (d)   increase in number of effective collisions

Q.5   The unit of the 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

Q.6 The unit of reaction is
  - (a)   mole/dm3   (b)   mole/pound
  - (c)   mole/dm3 sec   (d)   mole/cm3

Q.7 In the rate equation, when the conc. of reactants is unity then rate is equal to
  - (a)   specific rate constant   (b)   average rate constant
  - (c)   instantaneous rate constant
  - (d)   none of above

Q.8 The rate of reaction between two specific time intervals is called
  - (a)   instantaneous rate   (b)   average rate
  - (c)   specific rate   (d)   ordinary rate

Q.9 Instantaneous rate of a chemical reaction is
  - (a)   rate of reaction in the beginning
  - (b)   rate of reaction at the end
  - (c)   rate of reaction at a given instant
  - (d)   rate of reaction b/w two specific time intervals

Q.10 At the beginning the decrease in the conc. of reactants is
  - (a)   slow   (b)   moderate
  - (c)   rapid   (d)   none of above

Q.11 The sum of 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

Q.12 The average rate and instantaneous rate of a reaction are equal
  - (a)   at the start   (b)   at the end
  - (c)   in the middle
  - (d)   when two rate have time interval equal to zero

Q.13 The equation $2N_2O_5 \circledR 2N_2$ has order
  - (a)   first order   (b)   second order
  - (c)   negative order   (d)   fractional order

Q.14 The hydrolysis of tertiary butyl has order
  - (a)   first order   (b)   pseudo first order
  - (c)   fractional order   (d)   zero order

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Q.15 Photochemical reactions usually have order
   (a)   one   (b)   zero
   (c)   two   (d)   three

Q.16 The experimental relationship between a reaction rate and the concentration of reactants is called
   (a)   order of reaction   (b)   specific rate
   (c)   law of mass action   (d)   rate law

Q.17 When the rate of reaction is entirely independent of the conc. of reactants molecule then order of reaction is
   (a)   zero   (b)   first
   (c)   second   (d)   third

Q.18 Half life of U is
   (a)   7.1 x 108 years   (b)   6.1 x 108 years
   (c)   8.1 x 107 years   (d)   7.1 x 1010 years

Q.19 Half life period for decomposition of N_2O_5 at 45 oC is
   (a)   24 minutes   (b)   34 minutes
   (c)   44 minutes   (d)   54 minutes

Q.20 The decomposition of ozone has order
   (a)   first   (b)   negative
   (c)   second   (d)   pseudo first order

Q.21 The equation $CHCl_3 + Cl_2$ ® $CCl_4 + HCl$ has order
   (a)   first   (b)   negative
   (c)   fractional   (d)   second

Q.22 When a reaction occurs in many steps then the slowest step is the
   (a)   main step
   (b)   enthalpy determining step
   (c)   mechanism determining step
   (d)   rate determining step

Q.23 Spectrometry applied for rate determination when
   (a)   reactants or product absorb U.V., I.R. light
   (b)   reaction involve ion
   (c)   reaction involve change in volume
   (d)   none of above

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Q.24 Electrical conductivity method is applied for rate determination when

    (a)   reactants and products involve absorption of U.V. or I.R. radiation

    (b)   reaction involving ions

    (c)   reaction which involve change in refractive indices

    (d)   reactions which involve small volume change

Q.25 Dilatometric method is used for rate determination when

    (a)   reactions involving ions

    (b)   reactions involving change of optical activity

    (c)   reaction involving small volume change

    (d)   none of above

Q.26 Refractrometric 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

Q.27   Optical rotation method is used when
     (a)   reaction involve ions
     (b)   change of refractive indices
     (c)   reactions involving change of optical activity
     (d)   none of above

Q.28   The substance which retard the rate of chemical reaction
     (a)   catalyst   (b)   inhibitor
     (c)   auto catalyst   (d)   enzyme

Q.29   The enzyme used in the hydrolysis of urea is
     (a)   urease   (b)   amylase
     (c)   oxidase   (d)   reductase

Q.30   In the hydrolysis of $CH_3COO_2H_5$ the acid produce act as
     (a)   inhibitor   (b)   catalyst
     (c)   auto catalyst   (d)   none of above

Q.31   The order of reaction can be determined by
     (a)   graphical method   (b)   method of hit and trial
     (c)   differential method   (d)   all of above

Q.32   The factors which affect rate of reaction
     (a)   nature of reactants   (b)   surface area
     (c)   light   (d)   all of above

Q.33   When temp of reacting gases is raised to 10 K, the reaction rate becomes
     (a)   remain same   (b)   double
     (c)   triple   (d)   increase four times

Q.34   Arrhenius equation describe the effect of
     (a)   temp on rate of reaction
     (b)   volume on rate of reaction
     (c)   pressure on rate of reaction
     (d)   all the above

Q.35   A substance which alters the rate of reaction
     (a)   inhibitor   (b)   catalyst
     (c)   promoter   (d)   auto catalyst

Q.36   Homogeneous catalysis when

(a)   reactants and catalyst have same phase
(b)   products and catalyst have same phase
(c)   reactant and products have same phase
(d)   none of above

Q.37   The heterogenous catalysis
(a)   reactants and products have different phases
(b)   reactants and catalyst have different phases
(c)   products and catalyst have different phases
(d)   all the above

Q.38   Tetra ethyl lead when added to petrol, acts as
(a)   negative catalyst   (b)   auto catalyst
(c)   promoter   (d)   catalyst

Q.39   Concentrated sugar solution undergoes hydrolysis by an enzyme
(a)   invertase   (b)   urease
(c)   zymase   (d)   glucase

Q.40   Glucose is converted into ethanol by an enzyme
(a)   urease   (b)   invertase
(c)   zymase   (d)   glucose

ANSWERS

Questions	1	2	3	4	5
Answers	b	a	b	d	c
Questions	6	7	8	9	10
Answers	c	a	b	c	c
Question	11	12	13	14	15

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Answers	b	d	a	b	b
Questions	16	17	18	19	20
Answers	d	a	a	a	b
Questions	21	22	23	24	25
Answers	c	d	a	b	c
Questions	26	27	28	29	30
Answers	b	c	b	a	c
Questions	31	32	33	34	35
Answers	d	d	b	a	b
Questions	36	37	38	39	40
Answers	a	b	a	a	c