Chapter
19
Surface Chemistry

1. Which one of the following statements is not correct?
(a) The value of equilibrium constant is changed in the presence of a catalyst in the reaction at equilibrium.
(b) Enzymes catalyse mainly bio-chemical reactions.
(c) Coenzymes increase the catalytic activity of enzyme.
(d) Catalyst does not initiate any reaction.
(NEET 2017)

2. The coagulation values in millimoles per litre of the electrolytes used for the coagulation of As_2S_3 are given below :
I. $(NaCl) = 52$, II. $(BaCl_2) = 0.69$,
III. $(MgSO_4) = 0.22$
The correct order of their coagulating power is
(a) I > II > III (b) II > I > III
(c) III > II > I (d) III > I > II
(NEET-II 2016)

3. Fog is a colloidal solution of
(a) solid in gas (b) gas in gas
(c) liquid in gas (d) gas in liquid.
(NEET-I 2016)

4. Which one of the following characteristics is associated with adsorption?
(a) ΔG and ΔH are negative but ΔS is positive.
(b) ΔG and ΔS are negative but ΔH is positive.
(c) ΔG is negative but ΔH and ΔS are positive.
(d) ΔG, ΔH and ΔS all are negative.
(NEET-I 2016)

5. Which property of colloidal solution is independent of charge on the colloidal particles?
(a) Electro-osmosis (b) Tyndall effect
(c) Coagulation (d) Electrophoresis
(2015, Cancelled)

6. Which property of colloids is not dependent on the charge on colloidal particles?
(a) Coagulation (b) Electrophoresis
(c) Electro-osmosis (d) Tyndall effect
(2014)

7. In Freundlich adsorption isotherm, the value of $1/n$ is
(a) between 0 and 1 in all cases
(b) between 2 and 4 in all cases
(c) 1 in case of physical absorption
(d) 1 in case of chemisorption.
(2012)

8. Which one of the following statements is incorrect about enzyme catalysis?
(a) Enzymes are mostly proteinous in nature.
(b) Enzyme action is specific.
(c) Enzymes are denatured by ultraviolet rays and at high temperature.
(d) Enzymes are least reactive at optimum temperature.
(2012)

9. The protecting power of lyophilic colloidal sol is expressed in terms of
(a) coagulation value
(b) gold number
(c) critical micelle concentration
(d) oxidation number *(2012)*

10. If x is amount of adsorbate and m is amount of adsorbent, which of the following relations is not related to adsorption process?
(a) $x/m = f(p)$ at constant T
(b) $x/m = f(T)$ at constant p
(c) $p = f(T)$ at constant (x/m)
(d) $\frac{x}{m} = p \times T$ *(2011)*

11. The Langmuir adsorption isotherm is deduced using the assumption
(a) the adsorption sites are equivalent in their ability to adsorb the particles
(b) the heat of adsorption varies with coverage

(c) the adsorbed molecules interact with each other
(d) the adsorption takes place in multilayers. *(2007)*

12. A plot of $\log(x/m)$ versus $\log p$ for the adsorption of a gas on a solid gives a straight line with slope equal to
(a) $\log K$ (b) $-\log K$
(c) n (d) $1/n$ *(2006)*

13. Which one of the following forms micelles in aqueous solution above certain concentration?
(a) Dodecyl trimethyl ammonium chloride
(b) Glucose (c) Urea
(d) Pyridinium chloride *(2005)*

14. The enzyme which hydrolyses triglycerides to fatty acids and glycerol is called
(a) maltase (b) lipase
(c) zymase (d) pepsin. *(2004)*

15. According to the adsorption theory of catalysis, the speed of the reaction increases because
(a) the concentration of reactant molecules at the active centres of the catalyst becomes high due to adsorption
(b) in the process of adsorption, the activation energy of the molecules becomes large
(c) adsorption produces heat which increases the speed of the reaction
(d) adsorption lowers the activation energy of the reaction. *(2003)*

16. Position of non polar and polar part in micelle
(a) polar at outer surface but non polar at inner surface
(b) polar at inner surface non polar at outer surface
(c) distributed over all the surface
(d) are present in the surface only. *(2002)*

17. Which is not correct regarding the adsorption of a gas on surface of a solid?
(a) On increasing temperature adsorption increases continuously.
(b) Enthalpy and entropy change is negative.
(c) Adsorption is more for some specific substance.
(d) It is a reversible reaction. *(2001)*

18. Which one of the following method is commonly used method for destruction of colloid?
(a) Dialysis (b) Condensation
(c) Filteration by animal membrane
(d) By adding electrolyte *(2000)*

19. At the critical micelle concentration (CMC) the surfactant molecules
(a) associate (b) dissociate
(c) decompose
(d) become completely soluble *(1998)*

20. The ability of anion, to bring about coagulation of a given colloid, depends upon
(a) magnitude of the charge
(b) both magnitude and charge
(c) its charge only
(d) sign of the charge alone. *(1997)*

21. A colloidal system has particles of which of the following size?
(a) 10^{-9} m to 10^{-12} m (b) 10^{-6} m to 10^{-9} m
(c) 10^{-4} m to 10^{-10} m (d) 10^{-5} m to 10^{-7} m *(1996)*

22. When a few typical solutes are separated by a particular selective membrane such as protein particles, blood corpuscles, this process is called
(a) transpiration (b) endosmosis
(c) dialysis (d) diffusion. *(1996)*

23. For the adsorption of a gas on a solid, the plot of log (x/m) versus log P is linear with slope equal to
(a) n (b) $1/n$
(c) k (d) log k. *(1994)*

Answer Key

1.	(a)	**2.**	(c)	**3.**	(c)	**4.**	(d)	**5.**	(b)	**6.**	(d)	**7.**	(a)	**8.**	(d)	**9.**	(b)	**10.**	(d)
11.	(a)	**12.**	(d)	**13.**	(a)	**14.**	(b)	**15.**	(d)	**16.**	(a)	**17.**	(a)	**18.**	(d)	**19.**	(a)	**20.**	(b)
21.	(b)	**22.**	(c)	**23.**	(b)														