

NEET CHEMISTRY

Topic: Surface chemistry

- Q.1** When freshly precipitated $\text{Fe}(\text{OH})_3$ is boiled with water in the presence of few drops of dil HCl, a hydrated ferric hydroxide sol is obtained. This method is termed as -
- (1) Dialysis (2) Peptization
(3) Ultrafiltration (4) Electrodispersion
- Q.2** The capacity of an ion to coagulate a colloidal solution depends on -
- (1) Its shape
(2) The amount of its charge
(3) The sign of the charge
(4) Both, the amount and the sign of the charge
- Q.3** On addition of one ml. solution of 10 % NaCl to 10 ml. gold sol in presence of 0.025 g of starch, the coagulation is just prevented. The gold number of starch is -
- (1) 25
(2) 2.5
(3) 0.25
(4) 0.025
- Q.4** Which of the following has minimum flocculation value -
- (1) Pb^{2+} (2) Pb^{4+} (3) Sr^{2+} (4) Na^+
- Q.5** The charge of As_2S_3 sol is due to the absorbed -
- (1) H^+ (2) OH^- (3) O^{2-} (4) S^{2-}

- Q.6** The movement of dispersion medium in an electric field when the dispersed particles are prevented from moving is called -
- (1) Cataphoresis
 - (2) Electrophoresis
 - (3) Electro-osmosis
 - (4) Brownian movement
- Q.7** The potential difference between the fixed charged layer and the diffused layer having opposite charge is called :
- (1) Colloidal potential
 - (2) Zeta potential
 - (3) Electrostatic potential
 - (4) None of these
- Q.8** An example of micelle is -
- (1) As_2O_3 sol.
 - (2) Ruby glass
 - (3) Na_2CO_3 solution
 - (4) Sodium stearate concentrated solution
- Q.9** A freshly prepared $\text{Fe}(\text{OH})_3$ precipitate is peptized by adding FeCl_3 solution. The charge on the colloidal particle is due to preferential adsorption of -
- (1) Cl^- ions
 - (2) Fe^{+++} ions
 - (3) OH^- ions
 - (4) None
- Q.10** Greater is the protective power of lyophilic colloid -
- (1) Lesser is its gold no.
 - (2) Greater is its gold no.
 - (3) Either of the above
 - (4) None of these

Q.11 The correct statement in case of milk -

- (1) Milk is an emulsion of fat in water
- (2) Milk is an emulsion of Protein in water
- (3) Milk is stabilized by protein
- (4) Milk is stabilized by fat

Q.12 The coagulating power of an effective ion carrying the charge opposite to the sol particles has been illustrated by -

- (1) Brownian movement
- (2) Gold no
- (3) Tyndall effect
- (4) Schulze hardy rule

Q.13 In electrophoresis -

- (1) Sol particles move towards opposite electrodes
- (2) Medium moves towards opposite electrodes
- (3) Neither (1) nor (2)
- (4) Both (1) & (2)

Q.14 Gelatin protects -

- (1) Gold sol
- (2) As_2S_3 sol
- (3) $Fe(OH)_3$ sol
- (4) All

Q.15 Detergent action of synthetic detergents is due to -

- (1) Interfacial area
- (2) High molecular weight
- (3) Ionisation
- (4) Emulsifying properties

Q.16 Which is not shown by sols :

- (1) Adsorption (2) Tyndall effect
(3) Flocculation (4) Paramagnetism

Q.17 Emulsifiers are generally -

- (1) Soap (2) Synthetic detergent
(3) Lyophilic sols (4) All of the above

Q.18 The colloidal sol of SnCl_4 prefers to adsorb: (in excess of HCl) -

- (1) NO_3^- (2) K^+
(3) S^{2-} (4) Cl^-

Q.19 Micelles have -

- (1) higher colligative properties as compared to common colloidal sols
(2) lower colligative properties
(3) same colligative properties
(4) None of true

Q.20 Which of following ion has minimum flocculation value -

- (1) Cl^- (2) SO_4^{2-}
(3) PO_4^{3-} (4) $[\text{Fe}(\text{CN})_6]^{4-}$

Q.21 Egg albumin is -

- (1) Reversible colloid
(2) Lyophilic colloid
(3) Protective colloid
(4) All

Q.22 Physical adsorption is appreciable at -

- (1) Higher temperature
- (2) Lower temperature
- (3) At room temperature
- (4) 100° C

Q.23 The rate of chemi-sorption -

- (1) Decreases with increase of pressure
- (2) Is independent of pressure
- (3) Is maximum at one atmospheric pressure
- (4) Increases with increase of pressure

Q.24 Which one of the following is not a correct statement -

- (1) Physical adsorption is reversible in nature
- (2) Physical adsorption involves vander waals forces
- (3) Rate of physical adsorption increases with increase of pressure on the adsorbate
- (4) High activation energy is involved

Q.25 Which is correct -

- (1) Langmuir adsorption is highly specific
- (2) Vander-waal's adsorption is reversible
- (3) Both 1 & 2 are exothermic
- (4) All are correct

Q.26 Which characteristic of adsorption is wrong -

- (1) Physical adsorption in general decrease with temp.
- (2) Physical adsorption in general increase with temp.
- (3) Physical Adsorption is a reversible process
- (4) Adsorption is limited to the surface only

Q.27 Graph between $\log \left(\frac{x}{m} \right)$ and $\log p$ is a straight line at an angle 45° with intercept on y-axis 0.3010 Calculate the amount of gas adsorbed in gram per gram of the adsorbent when pressure is 0.2 atm.

- (1) 0.4 (2) 0.6 (3) 0.8 (4) 0.2

Q.28 Which one of the following is not the example of homogeneous catalysis -

- (1) Formation of SO_3 in the chamber process
(2) Formation of SO_3 in the contact process
(3) Hydrolysis of an ester in presence of acid
(4) Decomposition of KClO_3 in presence of MnO_2

Q.29 Which of the following types of metals make the most efficient catalysts -

- (1) Transition metals
(2) Alkali metals
(3) Alkaline earth metals
(4) Radioactive metals

Q.30 In the Habers process of synthesis of NH_3 -

- (1) Mo acts as a catalyst and Fe as a promotor
(2) Fe acts as a catalyst and Mo as a promoter
(3) Fe acts as inhibitor & Mo as a catalyst
(4) Fe acts as promoter & Mo as auto-catalyst

ANSWER KEY

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|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Que. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Ans. | 2 | 4 | 1 | 2 | 4 | 3 | 2 | 4 | 2 | 1 |
| Que. | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Ans. | 1 | 4 | 1 | 4 | 4 | 4 | 4 | 4 | 2 | 4 |
| Que. | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| Ans. | 4 | 2 | 4 | 4 | 4 | 2 | 1 | 2 | 1 | 2 |