



CHEMISTRY

BOOKS - NARENDRA AWASTHI

SURFACE CHEMISTRY

Exercise

1. The size of particles in suspension , true sloution and solution and colloidal solution varies in the order :

 $\label{eq:alpha} \texttt{A.} suspension > colloidal > true solution$

B. true solution > suspension > colloidal

 ${\tt C.} {\it suspension} > {\it colloidal} = {\it true solution}$

D. none of these

Answer: a

2. A colloidal system has what size of particless ?

A.
$$10^{-4} m \mathrm{to} 10^{-10} m$$

- B. $10^{-5}m$ to $10^{-7}m$
- C. $10^{-9}m$ to $10^{-12}m$
- D. $10^{-6}m$ to $10^{-9}m$

Answer: d

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3. Which are not purely surface phenomena?

A. Adsorption , surface tension

B. surface tension , viscosity

C. Absorption , viscostity

D.

Answer: d



4. absorbed acetic acid on activated carban is :

A. adsorber

B. absorber

C. adsorbent

D. adsorbate

Answer: d

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5. Adsorbed due to strong chemical forcess is called :

A. chemisorption

B. physisorption

C. both (a) and (b)

D. none of these

Answer: a

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6. Adsorbed of gases on solid surface is exothermic beacouse :

A. free energy increases

B. entropy decreases

C. entropy increases

D. interaction developed between gas and solid particles

Answer: d

7. the nature of bonding forces in adsorption are:

A. purely physical such as van der Waals' forces

B. purely chemical

C. both chemical and physical are possible

D. none of these

Answer: c

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8. which one of the following is not applicable to chemisorption ?

A. Heat of adsorption is negative

B. it takes place at high temperature

C. it is reversible

D. It forms mono- molecular layer

Answer: c



9. which on e of the following characteristics is correct for physical adsorption ?

A. it is very specific

B. Adsorption on solids is irreversible

C. Adsorption decreases with decrease in temperature

D. Generally both enthaply and entropy of adsorption are negative

Answer: d

10. which of the following statement is not correct ?

A. physical adsorption is due to van der Waals' forces

B. physical adsorption is irreversible

C. Chemical adsorption increases with increase in temperature upto

certain limit than decreases

D. Enthaply of adsorption $(/\Delta H/)$ of a chemical is greater than of

physical adsorption

Answer: b

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11. which gas will be adsorbed on a solid to greater extent ?

A. Having non - polar molecule

B. Having highest critical temperature

C. Having lowest critical temperature

D. Having lowest critical pressure

Answer: b

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12. which of the following factors affects the adsorption of a gas on solid

?

A. Critical temperture (t_c)

B. temperature of gas

C. pressure of gas

D. All of these

Answer: d

13. which gas is adsorbed to maximum amount by activated carbon ?

A. $H_2(g)$

 $\mathsf{B}.\,He(g)$

 $\operatorname{C.} CO(g)$

D. $CO_2(g)$

Answer: d

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14. the volume of gases NH_3 , CO_2 and H_2 adsorbed by one gram of characoal at 300 K are in order of :

A. $H_2 > Co_2 > NH_3$

- $\operatorname{B.} NH_3 > H_2 > CO_2$
- $C. NH_3 > CO_2 > H_2$

 $\mathsf{D.}\, CO_2 > NH_2 > H_2$

Answer: c



16. What is physical adsorption ? Give an example.

A. chemical adsoption

B. physical adsorption

C. both (a) and (b)

D. none of these

Answer: b

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17. which of the following adsorption isotherms represents the adsorption of a gas by a soild involved multillayers of formation ? (p_s = saturation pressure)





Answer: a



18. A plot of log $\left(\frac{x}{m}\right)$ against log P for the adsorption of a gas on a sloid gives a straight a straight line with slope equal to :

A. $\frac{1}{n}$ B. nC. $\log K$

D. K

Answer: a

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19. According produces to the adsorption theory of catalysis, the speed of the reaction increases because

A. in the process of adsorption , the activation energy of the molecules becomes large

B. adsorption produces heat which increases the speed of the

reaction

- C. adsorption lowers the activation energy of the reaction
- D. adsorption increases the activation energy of the reaction

Answer: c

20. 3.6gr of O_2 is adsorbed on 1.2gr of metal powder what volume of O_2 adsorbed per gram of the adsorbent at latm and 273K

A. $0.19 Lg^{\,-1}$

B. $1Lg^{-1}$

C. $2.1 Lg^{-1}$

D. none of these

Answer: c

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21. The conversion of Maltose to Glucose is possible by the enzyme

A. zymase

B. lactase

C. maltase

D. diastase

Answer: c

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22. shape selective catalysis is a reaction catalysed by

A. enzymes

B. ziegler - Natta Catalyst

C. zeolites

D. platinum

Answer: c

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23. The process which is catalysed by one of the products is called

A. acid - base catalysis

B. autocatalysis

C. negative catayst

D. homogeneous catalysis

Answer: b

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24. An inhibitor is essentially

A. a negative catalyst

B. a heterogeneous catalysis

C. an auto catalyst

D. a homogeneous catalyst

Answer: a

25. A catalyst in the finely divided form is most effective because :

A. less surface area is available

B. more active sites are formed

C. more energy gets stored in the catalyst

D. none of these

Answer: b

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26. idenify the correct statement regarding enzmes :

A. Enzymes are specific biological catalysis that normally works at high

temperauture

B. Enzymes are normally heterogeneous catalysis which decrease the

reaction rate

C. Enzymes are specific biological catalysis with low molar masses

D. Enzymes ae specific biological catalysis that are very specific in

nature

Answer: d

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27. A liquid is found to scatter a beam of light but leaves no residance when passed through the filter paper. The liquid can be described as

A. a suspension

B. oil

C. a colloidal sol

D. a true solution

Answer: d

28. Crystalloids differ from colloids mainly is respect of :

A. electrical behaviour

B. particle nature

C. particle size

D. solubility

Answer: c

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29. surface tension of lyophilic sols is

A. lower than water

B. more than water

C. equal to water

D. none of these

Answer: a



30. which on e of the following is not used for perparing lyophilic sols ?

A. starch

B. Gum

C. Gelatin

D. Metal sulphide

Answer: d

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31. which one of the sols acts as protetive colloid ?

A.
$$As_2S_3$$

B. Gelatin

C. Au

D. $Fe(OH)_3$

Answer: b

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32. which one of the following is lyophilic colloid ?

A. Pt

B. Gum

C. Fog

D. Blood

Answer: b

33. small liquid droplets dispersed in another liquid is called :

A. suspenison

B. emulsion

C. gel

D. true solution

Answer: b

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34. which of the following is an example of assiciated colloid ?

A. protein in water

B. Soap in water

C. Rubber in benzene

D. $FeCl_3$ in H_2O

Answer: b



35. Among the following , select the properties pf lyophilic coloidal sols :

A. viscostiy same as that of the medium

B. extensive hydration takes place

C. particle migrate either towards cathode or anode in an electric field

D. particle can be readly detected under ultramicroscope

Answer: b

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36. Of which of the following colloidal systems, fog is an example?

A. liquid in a gas

B. gas in a liquid

C. gas in a solid

D. soild in a liquid

Answer: a

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37. collodial systems are not classified on the basis of :

A. molecular size

B. nature of the particles

C. suface tension value

D. interaction between disperse phase and dispersion medium

Answer: c

38. All colloids :

A. are suspensions of one phase in another

B. are two - phase systems

C. contain only water - soluble particles

D. are true solutions

Answer: b

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39. which of the following is a lyophobic colloid ?

A. Gelatin

B. sulphur

C. starch

D. Gum arabic

Answer: b



41. Describe the cleaning action of soap.

A. non - polar tails of soap molecules dissolve in grease

B. oil and grease dissploves into hydrophilic centres of soap micelles

acid washed away

C. hydrophilic heads dissolves in grease

D. hydrophilic heads dissolves in grease

Answer: a

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42. Arsenous sulphide sol is prepared by passing H_2S through as enous oxide solution the charge developed on the particles is due to adsorption

of

A. $H^{\,+}$

 $\mathsf{B.}\,S^{2\,-}$

 $\mathsf{C}.\,OH^{\,-}$

D. O^{2-}

Answer: b



43. Bredig's arc method cannot be used for the preparation of colloidal

sol of :

A. copper

B. gold

C. silver

D. sodium

Answer: d

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44. As_2S_3 sol is ,

A. postivie colloid

B. negative colloid

C. neutral colloid

D. none of the above

Answer: b

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45. which of the following electrolyte will be most effective in coagulation

of negative sol?

A. KNO_3

 $\mathsf{B.}\,K_4\big[Fe(CN)_6\big]$

 $C. Na_3PO_4$

D. $MgCl_2$

Answer: d

46. the minimum amount of an electrolyrte required to cause coagulation of a sol is called :

A. Coagulation value

- B. Gold number
- C. protective value
- D. None of these

Answer: a

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47. Electrical charge on a colloidal particle is indicated by

A. Brownian movement

B. electrophoresis

C. ultramicroscope

D. molecular sieves

Answer: b

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48. collodial particles in a sol can be coagulated by :

A. heating

B. adding an electrophoresis

C. adding oppositely charged sol

D. any of the above methods

Answer: d

49. peptization involves :

A. precipitation of colloidal particles

B. disintegration of colloidal aggregates

C. purifiction of colloids

D. impact of molecules of the dispersion medium on the colloidal

particles

Answer: b

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50. hardt - Schulze law states that :

A. solution must have higher gold number

B. disperse phase and dispersion medium must be of the same sign

C. micelles coagulate in presence of surfactants

D. the ions carrying more opposite charge to that of sol particle are

effective in coagulation

Answer: d

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51. Given below are a few electrolytes, indicate which one among them will bring about the coagulation of a gold sol quickest and in the least of concentration ?

A. NaCl

B. $MgSO_4$

 $\mathsf{C.}\,Al_2(SO_4)_3$

D. $K_4[Fe(CN)_6]$

Answer: c

52. The ability of ion to bring about coagulation of a given collidal solution depends upon

A. its size

B. the magnitude of its charge only

C. the sign of its charge alone

D. both magnitude and sign of its charge

Answer: d

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53. An emulsifying agent is a substance which

A. stabilies the emulsion

B. de- stabilize the emulsion

C. coagulates the emulsion

D. break the interfacial film between suspended particle and medium

Answer: a





55. The formation of a colloidal from suspension is

A. peptisation

B. condenstion

C. sedimentation

D. fragmentation

Answer: a

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56. The method usually employed for the precipitation of a colloidal solution is

A. dialysis

B. addition of electrolytes

C. diffusion through animal membrane

D. condensation

Answer: b
57. which of the following will have the highest coagulating power for $Fe(OH)_3$ colloid ?

A. PO_4^{3-} B. SO_4^{2-}

- C. $Ca^{2\,+}$
- D. Al^{3+}

Answer: a

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58. Artificial rain is caused by spray of

A. opposite charged collidal dust over a cloud

B. same charged collidal dust over a cloud

C. both

D. none of these

Answer: a

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59. Colloids can be purified by :

A. condensation

B. peptization

C. coagulation

D. dialysis

Answer: d

60. At what PH range the rate of enzyme catalyzed reaction is maximum?

A. 5 to 7

B.6to8

C. 7 to 9

D. 8 to 9

Answer: a

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61. Protective sols are:

A. lyophilic

B. lyophobic

C. both (a) and (b)

D. none of these

Answer: a



62. Electro - osmosic is observed when :

A. disperion medium partcles begins to move in an electric field

B. dispersed phase to move in an electric field

C. both (a) and (b)

D. none of these

Answer: a

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63. On adding $AgNO_3$ solution to KI solution, a negatively charged colloidal sol will be formed in which of the following conditions ?

A. 50 mL of 0.1 M $AgNO_3$ + 50 Ml of 0.1 M KI

B. 50 mL of 0.1 M $AgNO_3$ + 50 Ml of 0.2 M KI

C. 50 mL of 0.2 M $AgNO_3$ + 50 Ml of 0.1 M KI

D. none of these

Answer: b

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64. A sol is prepared by addition of excess of $AgNO_3$ solution in KI solution . The charge likely to develop on colloidal particles is :

A. postive

B. negative

C. no charge

D. both charges

Answer: a

65. The gold numbers of protective colloids A,B,C and D are 0.04, 0.004, 10 and 40 respectively . The protective powers of A,B,C and D are in the orders .

- A. A > B > C > D
- $\operatorname{B.} B > A > C > D$
- $\mathsf{C}.\, D > C > A > B$
- $\mathsf{D}.\, D > C > B > A$

Answer: b

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66. In brownian motion , the paths of the particles are :

A. linear

B. curved

C. zig- zag

D. uncertain

Answer: c

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67. Which of the following is not represented by sols?

A. Adsorption

B. Tyndall effect

C. Flocculation

D. Paramagntism

Answer: d

68. The tyndall effect in colloidal solutions is due to

A. presence of electrical charges

B. scattering of light

C. absorption pf light

D. reflection of light

Answer: b

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69. The pressure of colloidal particles of dust in air imparts blue colour to

the sky. This is due to

A. absorption of light by dust particles

B. reflection of light by dust particles

C. scattering of light by dust particles

D. pesence of clouds

Answer: c



70. The apparatus used to coagulate carbon particles from smoke is called

A. cottrel smoker

B. cottrell precipitator

C. cottell absorber

D. none of these

Answer: b



71. select correct absorption isobars for chemisoption and physisoption

respectivly,

(where $\frac{x}{m}$ = extent of adsorption , T = temperature)





Answer: c



72. which among the following statement is false ?

A. Increase of pressure increases the amount of adsorption

B. Increase of temperature may decrease the amount of adsorption

C. Adsorption may be monolayered or multillayerd

D. particles size of the adsorbent will not affect the amount of

adsorption

Answer: d

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73. select incorrect statement :

A. Lyophilic sols are reversible

B. Lyophoilic sols are self stabilized

C. Lyphobic sols are obtained from inocganic materials

D. Lyophobic sols particles are hydrated

Answer: d

74. which one of the following statements is not correct in respect of lyophilic sols /

A. there is a considerable interaction between the disperesd phase

and dispersion medium

B. these are quite stable and are not easily coagulated

C. they carry charge

D. the particles are hydrated

Answer: c



75. Alum purifies muddy water by

A. dialysis

B. absorption

C. coagulation

D. ultrafiltration

Answer: c



76. Lyophilic sols are more stable than lyophobic sols because

A. the colloidal particles have positive charge

B. the colloidal particles have negative charge

C. the colloidal particles are solvated

D. there is strong electrostatic repulsion between the colloidal

particles

Answer: c

77. Arrange the following electrolytes in the increasing order of coagulation power for the coagulation of As_2S_3 sol :

 K_2SO_4 $CaCl_2$ Na_3PO_4 $AlCl_3$

A. I < II < III < IV

 $\mathsf{B}.\, I = III < II < IV$

 $\mathsf{C}.\,II < IV < I < II$

 $\mathsf{D}.\,II < III < IV < I$

Answer: b

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78. Equal volume each of two sols of Agl one obtained by adding $AgNO_3$ to slight excess of KI and another obtained by adding KI to slight excess of $AgNO_3$ are mixed together then

A. the two sols will stabilize each other

B. the sol particles will acquire more electric charge

C. the sols will coagulate each other mutually

D. a true solution will be obtained

Answer: c

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79. which of the following statement is not true about the oil - in - water type emulsion ?

A. Addition of small amount of water , no separate layer of water is

formed

B. Addition of a small amount of oil soluble dye renders the entire

emulsion coloured

C. Addition of oil results in the formation of two layers

D. Addition of a small amount of an electroyte increases the

conductivity of the emulsion

Answer: b

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80. Under the influemce of an electric field, the particles in a sol migrate towards cathode. The coagulation of the same sol is studied using NaCl, Na_2SO_4 , and Na_3PO_4 solutions. Their coagulation values will in the order

a. $NaCl>Na_2SO_4>Na_3PO_4$ b. $Na_2SO_4>Na_3PO_4>NaCl$ c. $Na_3PO_4>Na_2SO_4>NaCl$ d. $Na_2SO_4>NaCl>Na_3PO_4$

A. NaCl

B. Na_2So_4

 $C. Na_3PO_3$

D. same for all

Answer: a



81. select incorrect statement:

A. Micelles are associated collodies

B. the electrical charge on a colloid paritcle is indicated by

electrophoresis

C. formation of micelles takes place above Kraft temperature

D. formation of micells takes place below CMC.

Answer: d

82. Bredigs arc method involves :

A. dispersion of metal

B. condenstion of metal

C. disoersion as well as condenstion

D. neither dispersion nor condensation

Answer: C

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83. A freshly prepared $Fe(OH)_3$ precipitate is peptized by adding $FeCl_3$ solution. The charge on the colloidal particle is due to preferential adsorption of

A. Cl^- ions

B. fe^{3+} ions

 $C.OH^{-}$ ions

D. none of these

Answer: b



84. select incorrect statement :

A. gold sol is multimolecular colloid

B. large number of particles of a substance aggregate together and

formed multimolecular colloids

- C. Metal sulphides are lyophobic colloids
- D. sulphur sol is multimolecular colloid oand hydrophilic in nature

Answer: d

85. Associated colloids :

A. raise both the surface tension and viscosity of water

B. lower the surface tension and viscosity of water

C. lower the surface tension and rasie the viscosity of water

D. have greater concentration at the surface layer than the bulk of the

solution

Answer: c

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86. Below critical micelle concentration (CMC):

A. the surfactant molecules of ions undergo association to form

clusters

B. the viscosity of solution increases abruptly

C. subtances like grase , fat , etc. dissolve colloidally

D. salt behave as normal , strong electrolyte.

Answer: d

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- 87. During electro-osmosis of $Fe(OH)_3$ sol
- a. Sol particles move towards anode
- b. Sol particles move towards cathode
- c. The dispersion medium move towards anode
- d. The sol particles do not move in either direction
 - A. sol particles move towards anode
 - B. sol particles move towards carhode
 - C. the dispersion medium move towards anode
 - D. the dispersion medium moves towards cathode

Answer: c

88. select incorrect statement

A. soap and detergent lower the interfacil surface tension between oil

and water

B. Basic pricniple of peptization is reverse of coagulation

C. soap and detergent used as emulsifers

D. Lyophilic sols need stabilizing agent

Answer: d

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89. smoke precipitator work on the principal of :

A. centrifugation

B. neutralization of charge on colloids

C. absorption

D. addition of electrolytes

Answer: b

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90. what is the correct sequence of the decreasing coagultion value of the following electrolyte for the coagultion of ferric hydroxide sol ? $(I)Na_3PO_4(II)KCl(III)K_2SO_4(IV)K_4[Fe(CN)_6]$

A. IV > I > III > II

 $\mathsf{B}.\,II > III > I > IV$

 $\mathsf{C}.\,I > II > III > IV$

 $\mathsf{D}.\,IV > III > II > I$

Answer: b

91. Which of the following is true in respect of chemical adsorption?

A.
$$\Delta H < 0\Delta S > 0, \Delta G > 0$$

B. $\Delta H < 0, \Delta S < 0, \Delta G < 0$
C. $\Delta H > 0, \Delta S > 0, \Delta G > 0$
D. $\Delta H > 0, \Delta S < 0, \Delta G > 0$

Answer: b

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92. Although nitrogen does not adsorb on surface at room temperature, it adsorbs on the same surface at 83K. Which one of the following statements is correct?

A. At 83 K there is formation of Monolayer

B. At 83 K, nitrogen is adsorbed as atoms

C. At 83 K, nitrogen molecules are held by chemical bonds

D. At 83 K, there is formation of multimolecular layers

Answer: d

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93. for the coagulation of 50 mL of ferric hydroxide sol 10 mL of 0.5 M KCl

is required. What is the coagulation value of KCl?

A. 5

B. 10

C. 100

D. none of these

Answer: c

94. 100 mL of 0.6 M acetic acid is shaken with 2 g activatid carbon . The final concetration solution after adsorption is 0.5 M. what is the amount of acetifc acid adsorbed per gram of carbon ?

A. 0.6 g

B. 0.3 g

C. 1.2 g

D. none of these

Answer: b

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95. A detergent $[C_{12}H_2SO_4^-Na^+]$ solution becomes a colloidal sol at a conc. of $10^{-3}M$ on an average 10^{13} colloidal particles are present in Imm what is the average no.of ions are contain in one colloidal particle (micelle) no.of ions $6x10^x$. x is

A. $6 imes 10^7$

B. 10

C. 60

D. none of these

Answer: c

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96. One gram of activated carbon has a surface area of $1000cm^2$ considering complete coverage as well as monomolecular adsorption. How much ammonia at latm and 273K would be adsorbed on the surface of 44/7gr. carbon. If radius of a ammonia molecule is $10^{-8}cm$

A. 7.46L

 ${\rm B.}\,0.33L$

C. 44. 8L

D. 23.5L

Answer: a



97. At 1 atm and 273 K the volume of nitrogen gas required to cover a sample of silica gel, assuming Langmuir monolayer adsorption , is found to be $1.30cm^3g^{-1}$ of the gel. The area occupoied by a nitrogen molecule os $0.16nm^2$. Find out the no. of surface sites occupied per molecule of N_2

A. $5.568m^2g^{-1}$

B. $3.34m^2g^{-1}$

C. $1.6m^2g^{-1}$

D. none of these

Answer: a

98. 10 % sites of catalyst bed have adsorbed by H_2 on Heating H_2 gas is evloved from sites and collected at 0.03 atm and 300 K in a small vessel of $2.46cm^3$.

no. of sites available is $5.4 imes10^{16}$ per cm^2 and surface area is $1000cm^2$. find out the no. of suface sites occupied per molecule of H_2 .

A. 1

B. 2

C. 3

D. none of these

Answer: c

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99. A sample of 16 g charcoal was brought into contact with CH_4 gas contained in a vessel of 1 litre at $27^\circ C$. The presses of gas was found to fall from 760 to 608 torr. The density of chacoal sample is $1.6g/m^3$. What

is the volume of the CH_4 gas adsorbed per gram of the adsorbent at 608 torr and $27^{\,\circ}\,C$?

A.
$$125 \frac{L}{g}$$

B. $16.25m \frac{L}{g}$
C. $26m \frac{L}{g}$

D. none of these

Answer: b

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100. A group between x/m and the presure P of the gas at a constant temperature is called adsorption siotherm. Where x is the no. of moles of the adsorbate and m is the mass of the adsorbent. adsoption isotherms of different shaopes have been experimentally observed ... According to frundlich adosroption is them,

$$x/m = KP^{1/n}$$

where K and N are constant paraments depending upon the nature of

the solid and gas

Inn the given isotherm select the incorrect statement :



- m c
- B. $rac{x}{m} \propto P^{1/n}$ when point B is reached
- C. $\frac{x}{m}$ does not increase as rapidly with pressure along BC due to less

surface area availble for adsorption

D.

Answer: b



101. A group between x/m and the presure P of the gas at a constant temperature is called adsorption siotherm. Where x is the no. of moles of the adsorbate and m is the mass of the adsorbent. adsoption isotherms of different shaopes have been experimentally observed .. According to frundlich adosroption is them,

$$x/m = KP^{1/n}$$

where K and N are constant paraments depending upon the nature of the solid and gas

Adsoption isothem of log $\left(rac{x}{m}
ight)$ and log P was found of the type .



A. P=0

B. P=1 C. $\frac{1}{n} = 1$

D. p < 1

Answer: c



102. A group between x/m and the presure P of the gas at a constant temperature is called adsorption siotherm. Where x is the no. of moles of the adsorbate and m is the mass of the adsorbent. adsoption isotherms of different shaopes have been experimentally observed .. According to frundlich adosroption is them,

$$x/m = KP^{1/n}$$

where K and N are constant paraments depending upon the nature of the solid and gas

graph between log $\left(rac{x}{m}
ight)$ and log P is a straight line a t angle 45° with

intercept OA as shown .

hence, $\left(rac{x}{m}
ight)$ at a pressure of 2 atm is :



A. 2

B. 4

C. 8

D. 1

Answer: b

103. the protective power of the lyophilic colloids es expressed in terms of gold number, a term introduced by Zsigmondy. Gold number is the number of milli - gram of the protective colloid which prevent the coagulation of 10 mLof red gold sol, when 1 mL of a 10 per cent solution of sodium chloride is added to it . thus smaller the gold number of lyophillic colloid, the greater is the protective power.

On addition of one mL of sloution of 10 % NaCl to 10 mL of red gold sol in presence of 0I.025 g of starch the coagultion is just prevented . the gold number of starch is

A. 0.025

B. 0.25

C. 2.5

D. 25

Answer: d

104. the protective power of the lyophilic colloids es expressed in terms of gold number, a term introduced by Zsigmondy. Gold number is the number of milli - gram of the protective colloid which prevent the coagulation of 10 mLof red gold sol , when 1 mL of a 10 per cent solution of sodium chloride is added to it . thus smaller the gold number of lyophillic colloid, the greater is the protective power.

A. higher the gold number, more protective power of colloid

B. Lower the gold number, more protective power

C. Higher the coagulation value, more the coagulation power

D. lower the coagulation value, higher the coagulation power

Answer: b
105. the protective power of the lyophilic colloids es expressed in terms of gold number, a term introduced by Zsigmondy. Gold number is the number of milli - gram of the protective colloid which prevent the coagulation of 10 mLof red gold sol , when 1 mL of a 10 per cent solution of sodium chloride is added to it . thus smaller the gold number of lyophillic colloid, the greater is the protective power.

gold number given an indication of

A. protective nature of colloids

B. purity of gold in suspension

C. the charge on a colloidal soultion of gold

D. gram of gold per litre of soultion

Answer: a



106. coagultion is the process by which the dispersed phase of a colloid is made to aggregate and thereby separtate from the continuous phase. The minimum concetration of an eletrolyte in milli-moles per litre of the electrolyte solution which required to cause the caogultion of colloidal sol is called coagution value .

therefroe higher is the coagulatings power of effective ion, smaller will be the coagultion value of the electrolyte.

coagultion value $\propto = \frac{1}{\text{coagulating power}}$

the coagulation values of differnt electrolytes are different . this behavious can be easily uderstood by Harby - schulze rule which states. the greater is the valency of the effective ion grreater is its coagulating power,"

which one had the highest coagulating powe?

A. K^+ B. Ca^{2+} C. Al^{3+}

D. $Sn^{4\,+}$

Answer: d

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107. coagultion is the process by which the dispersed phase of a colloid is made to aggregate and thereby separtate from the continuous phase. The minimum concetration of an eletrolyte in milli-moles per litre of the electrolyte solution which required to cause the caogultion of colloidal sol is called coagution value .

therefroe higher is the coagulatings power of effective ion, smaller will be the coagultion value of the electrolyte.

 As_2S_3 sol si negatively charged. Capacity to perciopitate of a given colloid depends upon :

- A. K_2SO_4 B. Na_3PO_4
- C. $AlCl_3$

D. $CaCl_3$

Answer: c

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108. coagultion is the process by which the dispersed phase of a colloid is made to aggregate and thereby separtate from the continuous phase. The minimum concetration of an eletrolyte in milli-moles per litre of the electrolyte solution which required to cause the caogultion of colloidal sol is called coagution value .

therefroe higher is the coagulatings power of effective ion, smaller will be the coagultion value of the electrolyte.

the ability of an ion to bring about coagulation of a given colloid depends upon :

A. the sign of its charge

B. magnitude of its charge

C. both magnitude and sigh

D. none of these

Answer: c

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109. coagultion is the process by which the dispersed phase of a colloid is made to aggregate and thereby separtate from the continuous phase. The minimum concetration of an eletrolyte in milli-moles per litre of the electrolyte solution which required to cause the caogultion of colloidal sol is called coagution value .

therefroe higher is the coagulatings power of effective ion, smaller will be the coagultion value of the electrolyte.

the coagulation of colloidal particles fo the sol can be caused by :

A. heating

B. adding electrolyte

C. adding oppositely charged sol

D. all of these

Answer: d

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110. Emulsions are normally prepared by shaking the two components together vigorously although some kind of emulsifying agent usually has to added to stabilize the product. This emulsifying agent may be a soap or other surfactant (surface active) species or a lyophilic sol. Emulsions are broadly classified into two types :

(i) Oil in water emulsions (O/W): Oil acts as dispersed phase and water acts as dispersion medium

(ii) Water in oil emulsions (W/O) : Water acts as dispersed phase and oil acts as dispersion medium.

Dye test, dilution test may be employed for identification of emulsions. Select correct statement :

A. only statement 1 is correct

B. only statement 2 is correct

C. both are correct

D. none of these

Answer: c

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111. Emulsions are normally prepared by shaking the two components together vigorously although some kind of emulsifying agent usually has to added to stabilize the product. This emulsifying agent may be a soap or other surfactant (surface active) species or a lyophilic sol. Emulsions are broadly classified into two types :

(i) Oil in water emulsions (O/W): Oil acts as dispersed phase and water acts as dispersion medium

(ii) Water in oil emulsions (W/O) : Water acts as dispersed phase and oil acts as dispersion medium.

Dye test, dilution test may be employed for identification of emulsions. Read the two statements :

- A) Milk is an example of oil in water (O/W) type emulsion
- B) Cold cream is an example of water in oil (W/O) type emulsion
 - A. water in oil emulsions are less viscous than the aqueous emulsions
 - B. Electrical conductance of aqueous emulsions is less than the of oil

emulsions

- C. Deemulsification can be done by soap or detergent
- D. An emulsion can be diluted with H_2O then it is oil in water (O/w)

type

Answer: d

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112. select thee correct statement (S)

A. physical adsorption is specific in nature

B. chemical adsorption highly specific in nature

C. physical adsorption is due to free valence of atoms

D. chemical adsoption is due to stronger interaction or bond

Answer: b,d

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113. select the correct statement (s) :

A. adsorption is a non - spontyaneous process

B. surface energy deceases during the process of adsorption

C. adsorption takes place with decrease of entropy

D. in general adsoption is exothermic process

Answer: b,c,d

114. select the correct statement (s):

A. physisorption is favoured by low temperature

B. chemisorption is favoured by very high temperauture becouse the

process is endothemic

C. chemisorption increase with increases in temperature owing to

high activation energy

D. Oxygen adsorbed by charcol can be desorbed by lowing pressure

and temperture

Answer: a,c,d

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115. If adsorption of a gas on a solid is limited to monolayer formatin,

then which of the following statement are ture ?

B. At moderate pressures, $\frac{x}{m}$ varies less than proportiontely with P C. At high pressure , $\frac{x}{m}$ becomes inderpendent of P D. at high pressue , $\frac{x}{m}$ varies more than proportiontely with P

Answer: a,c,d

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116. which of the following are colloids ?

A. Sulphur sol

B. starch

C. Gold sol

D. soap solution

Answer: b,c,d

117. which of the following is/ are correct for sols ?

A. Its surface tension is lower than that of water

B. Its viscosity is higher than that of water

C. Its surface tension is higher than that of water

D. Its viscority is equal to that of water

Answer: b,c

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118. select the correct statement (s) :

A. Benzene is dispersed phase in benzosol

B. sols are irreversible and not so table

C. sol can be produced by double decompostion

D. when a solution in alcohol is added in excess of water a sol of

alcohol is formed

Answer: a,b

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119. When negatively charged colloids like As_2S_3 sol is added to positively

charged $Fe(OH)_3$ sol in suitable amounts :

A. both the are precipitated simultaneously

B. this process is called mutal coagulation

C. they becomes positively charged colloid

D. they become negatively charged colloid

Answer: a,b

120. Colloidal gold can be prepared by

A. Bredig's arc method

B. reduction of $AuCl_3$

C. hydrolysis

D. peptization

Answer: a,b,c,d

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121. The coagulation of sol particles may be brought in by :

A. boiling

B. persistent dialysis

C. adding electroyte

D. adding oppositely charged sol

Answer: a,b



122. select the correct statement (s) :

A. A sol is prepared by addition of excess of $AgNO_3$ solution in Kl

solution . The charge likely to develop on colloidal particle is positive

B. the effects o pressure on physical adsortion is high if temperature

is low

- C. Ultracentrifugation process is used for pegaration of colloids
- D. Gold number is the index for extent of gold plating done

Answer: a,b,d

123. Colloids can be purified by :

A. dialysis

B. electrodialysis

C. electrophoresis

D. ultrafiltration

Answer: a,b,c

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124. Coagulation of colloids can be achieved by :

A. centrifugation

B. adding electrolyte

C. change in PH

D. adding water

Answer: a,b,c,d



125. which are the properties of colloidal solution ?

A. Adsorption

B. Tyndall effect

C. Flocculation

D. Depression of freezing point

Answer: b,c

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126. In the aqueous solution of soaps above :

A. the cations associate to form the aggregates

B. the anions associate to from the clusters of colloidal dimension

C. the polar ends of the clusters of colloidal dimension

D. the non - polar ends (hydrocarbon) ends are directed toward water

Answer: a,b

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127. Amongst the following which is/are correct statement about the metal sulphide sols ?

- A. the sol particles are positively charged due to preferential adsorption of metal ions
- B. the sol partcles are negatively charged due to preferntial adsorption of sulphide ions
- C. the cations of added electrolytes are effective in causing the coagulation of the sol

D. the sol is due to both the electric charge and hydration of the

particles

Answer: b,c

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128. Emulsion can be detroyed by :

A. the addition of an emulsifier

B. electrophoresis with a high potential

C. freezing

D. all of these

Answer: b,c

129. which of the following statement is / are correct for electrophoresis /

A. Colloidal are uncharged particles and do not migrate towards the

electrodes when electric field is applied

B. In electrophoresis , sol migrates either to the anode or to the

cathode denpending on the positivily or negatively charged sol

C. Electrophoresis is useful for finding the charge on a sol

D. all of these

Answer: c

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130. select the false statement (S) :

A. Brownian motion and Tyndall effect are shown by true solutions

B. sorption process is combinations of adsorption and adsorption

process

C. Law Hardy schulze is related with coagultion of a sol

D. Higher is the gold number greater will be the protective power of a

colliod

Answer: a,d

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131. select correct statement (s)

A. lyophobic colloids are used to protect lyophilic colloids

B. Dehydrating agent is used to coagultion sols

C. Rubber is obtained by coagultaion of latex

D. sometimes ,the rainfall occurs when two opositely charged clods

meet

Answer: b,c,d



132. Which of the following reactions is an example of heterogeneous catalysis

$$\begin{array}{l} \mathsf{A.} \ 2H_2O_2(l) \xrightarrow{MnO_2(s)} 2H_2O(l) + O_2(g) \\ \\ \mathsf{B.} \ 2SO_2(g) + O_2(g) \xrightarrow{NO(g)} 2SO_3(g) \\ \\ \mathsf{C.} \ 2SO_2(g) + O_2(g) \xrightarrow{NO(g)} 2SO_3(g) \end{array}$$

D.

 $CH_{3}COOC_{2}H_{5}(aq) + H_{2}O(l) \xrightarrow{HCl\,(\,aq\,)} CH_{3}COOH(aq.\,) + C_{2}H_{5}OH(l)$

Answer: a,c

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133. select correct statement (s)

A. the role of a catalyst in a reversible reaction is to allow the

equilibrium to be achieved quickly.

B. Diffusion process is involved in mechanism of heterogenous

catalysis process

C. Hydrolysis of cane sugar is catalysed by H^+

D. promotors enhane the acitvity of a catayst

Answer: a,b,c,d

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134. select correct statement (s)

A. blood is a colloidal solution

B. Alum is used in water purifiaction

C. River water is a colloidal solution of clay

D. Colloidal medicines are more effective due to large surface area



135. Column - I and Column - II contains four emtries each. Entries of Column -I are to be matched with some entries of Column - II . One or more than one entries of Column -I may have the matching with the same entries of Column - II.

column-I		column-II	
(A)	Chemisorption	(P)	Exothermic
(B)	Physical adsorption	(Q)	Endoothermic
(C)	Desorption	(R)	Removal of adsorbed material
(D)	Activation of adsorbent	(S)	Highly specific in nature

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136. Column - I and Column - II contains four emtries each. Entries of Column -I are to be matched with some entries of Column - II . One or more than one entries of Column -I may have the matching with the same

entries of Column - II.

column-Icolumn-II(A) Chemisorption(P) Not specific and decreases(B) physisorption(Q) sepecific and increases with(C) Desorption of a solute on liquid surface(R) Increases the surface tens(D) Adsorption of a solute on a liquid(S) Decreases the surface tens

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137. Column - I and Column - II contains four emtries each. Entries of Column -I are to be matched with some entries of Column - II. One or more than one entries of Column -I may have the matching with the same

entries of Column - II.

column-I column-II

- (A) milk (P) Aerosol
- (B) Dust (Q) Emuslion
- (C) Cheese (R) Gel
- (D)Froth (S) from

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138. Column - I and Column - II contains four emtries each. Entries of Column -I are to be matched with some entries of Column - II . One or

more than one entries of Column -I may have the matching with the same

entries of Column - II.

column-I	column-II
(A) Liquid dispersed in gas	(\mathbf{P}) foam
(B) Gas dispersed in liquid	(Q) Emulsion
(C) Liquid dispersed in solid	(R) Aerosol
(D) Liquid dispersed in liquid	(S) Gel

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139. Column - I and Column - II contains four emtries each. Entries of Column -I are to be matched with some entries of Column - II . One or more than one entries of Column -I may have the matching with the same entries of Column - II.

column-l	column-ll
$(A)As_2S_3{ m sol}$	(P) Lyophobic colloid
(B) sulphur sol	(Q) Macromolecualr colloid
(C) starch	(\mathbf{R}) Multimolecular colloid
(D)Soap	(S) Associated colloid

140. Column - I and Column - II contains four emtries each. Entries of
Column -I are to be matched with some entries of Column - II . One or
more than one entries of Column -I may have the matching with the same
entries of Column - II.
column-I column-II
(A) Coagultation (P) Due to persence of charge
(B) Electrophoresis (Q) Due to scattering of light
(C) tyndall effect (R) Due to netralization of charge
(D)Brownian movement (S) Due to impact of the molecules of the dis-per

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141. Column - I and Column - II contains four emtries each. Entries of Column -I are to be matched with some entries of Column - II . One or more than one entries of Column -I may have the matching with the same entries of Column - II.

entries of Column -

column-I

- (A) peptization
- (B) Ultra centrifugation
- (C) Electrodialysis
- (D) Breding's arc method

column-II

- (P) preparation of sols
- (Q) Purification of sols
- (R) perparation of metal sols
- (S) movement of ions acress the membrane in

STATEMEN1: For Adsorption $\Delta G, \Delta H, \Delta S$ all have -ve values.

STATEMENT-2: Adsoption is a exothermic process in which randomness decreases due to force of attraction between adsorbent and adsorbate.

- A. if both the statement are TRUE and STATEMENT -2 is the correct explanation of STATEMENT 1
- B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: A

STATEMENT-1: The extent of adsorption of CO_2 is much more higher than of H_2 .

STATEMENT-2: $CO_2(g)$ has higher critical temperature and more van der Waal's force of attraction as compared to $H_2(g)$.

A. if both the statement are TRUE and STATEMENT -2 is the correct explanation of STATEMENT - 1

B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: A

STATEMENT - 1 is Flase and STATEMENT - 2 is TRUESTATEMENT-1: In adsorption, the molecules of a substance are uniformly distributed throughout the body of other substance.

STATEMENT-2: In some cases, both absorption and adsorption takes place simultaneously.

A. if both the statement are TRUE and STATEMENT -2 is the correct explanation of STATEMENT - 1

B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: B

TRUESTAMENT-1: More heat evolved in physiorpiton than in chemisorption.

STATEMENT-2: Molecules of adsorbate and adsorbent are held by van der Waal's forces in physisorption and by chemical bonds in chemisorption.

A. if both the statement are TRUE and STATEMENT -2 is the correct

explanation of STATEMENT - 1

B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: D

STATEMENT-1: Colloidal solution is electrically neutral.

STATEMENT-2: Due to similar nature of the charge carried by the dispersed phase particles, they repel each other and do not combine to form bigger particles.

A. if both the statement are TRUE and STATEMENT -2 is the correct explanation of STATEMENT - 1

B. If both the statement are STATEMENT -2 is NOT the correct

explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: B



STATEMENT-1: Soap and detergent are macro-molecular colloids.

STATEMENT-2: Soap and dtergent are molecules of large size.

A. if both the statement are TRUE and STATEMENT -2 is the correct explanation of STATEMENT - 1

B. If both the statement are STATEMENT -2 is NOT the correct

explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: D

STATEMENT-1: Micelles are formed by surfactant molecules above the critical micelle concentartion (CMC).

STATEMENT-2: The conductivity of a solution having surfactant molecules decrease sharply at the CMC.

A. if both the statement are TRUE and STATEMENT -2 is the correct explanation of STATEMENT - 1

B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: A

STATEMENT-1: The micelle formed by sodium sterate in water hasj- COO^{-} groups at the surface.

STATEMENT-2: Surface tension of water is reduced by the addition of sterate.

- A. if both the statement are TRUE and STATEMENT -2 is the correct explanation of STATEMENT - 1
- B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: B

STATEMENT-1: Protein, starch are lyophilic colloids.

STATEMENT-2: They have strong interaction with the dispersion medium.

A. if both the statement are TRUE and STATEMENT -2 is the correct

explanation of STATEMENT - 1

- B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1
- C. If STATEMENT -1 is TRUE and STATEMENT is FALSE
- D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: A
STATEMENT-1: Colloidal Agl is prepared by adding Kl in slight excess to $AgNO_3$ solution, the and particles migrate toward cathode under electric field.

STATEMENT-2: Colloidal particles adsorb ions and thus becomes electrically neutral.

A. if both the statement are TRUE and STATEMENT -2 is the correct explanation of STATEMENT - 1

B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: C

STATEMENT-1: When SnO_2 is reacted with NaOH, then its sol particles are attracted towards cathode.

STATEMENT-2: When SnO_2 is reacted with NaOH, then it gives SnO_3^{2-} which is adsorbed by SnO_2 , so it is negatively charged sol.

A. if both the statement are TRUE and STATEMENT -2 is the correct explanation of STATEMENT - 1

B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: D

STATEMENT-1: For coagulation of positively charged sols, $[Fe(CN)_6]^{4-}$ ion has higher coagulating power than that of PO_4^{3-} , SO_4^{2-} , Cl^-

STATEMENT-2: The size of colloidal particle are larger than the size of true solution particles.

A. if both the statement are TRUE and STATEMENT -2 is the correct explanation of STATEMENT - 1

B. If both the statement are STATEMENT -2 is NOT the correct

explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE



STATEMENT-1: Dispersed phase particles of colloidal solution cannot pass through ultra -filter paper.

STATEMENT-2: The size of colloidal particles are larger than the size of true solution particles.

A. if both the statement are TRUE and STATEMENT -2 is the correct explanation of STATEMENT - 1

B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

155. (A): When a finely divided active carbon or clay is stirred into a dilute solution of a dye, the intensity of colour in the solution is decreased.(R): The dye is adsorbed on the solid surface of carbon or clay

A. if both the statement are TRUE and STATEMENT -2 is the correct

explanation of STATEMENT - 1

- B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1
- C. If STATEMENT -1 is TRUE and STATEMENT is FALSE
- D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: A

156. Statement I : Silica gel is commonly used for drying air .

Statement II: Silica gel absorbs moisture from air.

A. if both the statement are TRUE and STATEMENT -2 is the correct

explanation of STATEMENT - 1

B. If both the statement are STATEMENT -2 is NOT the correct

explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: A

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157. each question constain STATEMENT-1(Assertion) and STATEMENT - 2 (reason). examine the statement carefully and work the correct answer accoriding to the instructions given below :

STATEMENT-1: ZSM-5 is a type of zeolites used as a catalyst in petrochemical industries.

STATEMENT-2: Zeolites are microporous aluminusilicates three dimensional network silicates in which some silicon atoms are replaced by aluminium atoms.

A. if both the statement are TRUE and STATEMENT -2 is the correct explanation of STATEMENT - 1

B. If both the statement are TRUE and STATEMENT -2 is NOT the correct explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: B



STATEMENT-1: Lyophilic colloids are called as reversible sols.

STATEMENT-2: Lyophilic sols are extensively hydrated.

A. if both the statement are TRUE and STATEMENT -2 is the correct

explanation of STATEMENT - 1

- B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1
- C. If STATEMENT -1 is TRUE and STATEMENT is FALSE
- D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: B

STATEMENT-1: A catalyst is more effective in finely divided form.

STATENENT-2: Finely divided form has more surface area.

A. if both the statement are TRUE and STATEMENT -2 is the correct

explanation of STATEMENT - 1

- B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1
- C. If STATEMENT -1 is TRUE and STATEMENT is FALSE
- D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: A

160. each question constain STATEMENT-1(Assertion) and STATEMENT - 2 (reason). examine the statement carefully and each question constain STATEMENT-1(Assertion) and STATEMENT - 2 (reason). examine the statement carefully and work the correct answer accoriding to the instructions given below :

STATEMENT-1: Sky appears blue in colour.

STATEMENT-2: Colloidal particles of dust along with water suspended in air scatter blue light.

A. if both the statement are TRUE and STATEMENT -2 is the correct explanation of STATEMENT - 1

B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

STATEMENT-1: The conversion of fresh precipitate to colloidal state is called peptization.

STATEMENT-2: It is caused by addition of common ions.

A. if both the statement are TRUE and STATEMENT -2 is the correct explanation of STATEMENT - 1

B. If both the statement are STATEMENT -2 is NOT the correct

explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: B

STATEMENT-1: Colloidal solutions are stable but colloidal particles do not settle down.

STATEMENT-2: Brownian movement counters the force of gravity act on collooidal particles

A. if both the statement are TRUE and STATEMENT -2 is the correct explanation of STATEMENT - 1

B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: A

STATEMENT-1: A colloid gets coagulated by addition of an electrolytes.

STATEMENT-2: Coagulation depends on the valance and sign of the charge of the coagulant ion.

A. if both the statement are TRUE and STATEMENT -2 is the correct explanation of STATEMENT - 1

B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: B

STATEMENT-1: At pH of isoelectric point, the sol particle of amino acids neither move towards anode nor towards cathode.

STATEMENT-2: Because at the isoelectric point, the concentration of conjugate base and conjugate acid of the Zwitter ions becomes equal and so one's charge is counterbalanced by others.

A. if both the statement are TRUE and STATEMENT -2 is the correct explanation of STATEMENT - 1

B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

STATEMENT-1: Gold sol is multimolecular and hydrophotic in nature.

STATEMENT-2: Gold sol is prepared by Bredig's arc method.

A. if both the statement are TRUE and STATEMENT -2 is the correct

explanation of STATEMENT - 1

- B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1
- C. If STATEMENT -1 is TRUE and STATEMENT is FALSE
- D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: B





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168. How many colloidal systems exist in nature with gas as dispersed

phase?

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169. What is the minimum diameter (in nm) of colloidal particles?

170. For soaps critical micelle concentration (CMC) is 10^{-x} (min) to $10^{-\gamma}$

(max.) mol/L what is the value of x?



Answer: c

Level 3 Assertion Reason Type Questions

1. each question constain STATEMENT-1(Assertion) and STATEMENT - 2 (reason). examine the statement carefully and work the correct answer accoriding to the instructions given below :

STATEMENT-1: Dispersed phase particles of colloidal solution cannot pass through ultra -filter paper.

STATEMENT-2: The size of colloidal particles are larger than the size of true solution particles.

A. if both the statement are TRUE and STATEMENT -2 is the correct

explanation of STATEMENT - 1

B. If both the statement are STATEMENT -2 is NOT the correct explanation of STATEMENT -1

C. If STATEMENT -1 is TRUE and STATEMENT is FALSE

D. If STATEMENT -1 is FALSE and STATEMENT -2 is TRUE

Answer: C