CHEMISTRY

BOOKS - G.R. BATHLA & SONS

CHEMISTRY (HINGLISH)

THE COLLOIDAL STATE

Practice Problems

1. The coagulation of $100mL$ of a colloidal solution of gold is completely prevented by

adding $0.25g$ of starch to it before adding $10mL$ of $10\%\, NaCl$ solution. The gold number of starch is

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2. For the coagulation of $100mL$ of arsenious sulphite $sol, 5mL$ of $1MNaCl$ is required. What is the flocculaton value of $NaCl$?

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Objective Questions

1. Difference in between crystallid and colloid is of :

A. particle size

B. chemical composition

C. ionic character

D. solubility

Answer: A

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2. Substances whose solutions can readily through animal membrane are called :

A. colloidas

B. crystalloids

C. electrolytes

D. non-electrolytes

Answer: B

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3. Suspensions are :

A. visible to naked eye

B. invisible through microscope

C. not visible by any means

D. invisible under electron microscope

Answer: A

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4. The size of the colloidal particles is in between :

A. $10^{-7} - 10^{-9} cm$

B. $10^{-9} - 10^{-11} cm$

C. $10^{-5} - 10^{-7} cm$

D. $10^{-2} - 10^{-3} cm$

Answer: C

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5. The size of a colloidal particle is :

A. $> 0.1\mu$

B. 1μ to 0.1μ

C. $< 0.1m\mu$

D. more than 3000 m μ

Answer: B

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6. If liquid is dispersed in solid medium, then this is called as:

A. sol

B. emulsion

C. liquid aerosol

D. gel

Answer: D

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7. The number of phases in colloidal system are

A. 2

B. 4

C. 3

D. 1

Answer: A

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8. The colloidal system of a solid dispersed in liquid medium is :

A. aerosol

B. sol

C. gel

D. foam

Answer: B

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9. When dispersed phase is liquid and dispersion medium is gas, then the colloidal system is called

A. smoke

B. emulsion

C. colud

D. gel

Answer: C

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10. An emulsion is a colloidal solution consisting of :

A. two solids

B. two liquids

C. two gases

D. one solid and one liquid

Answer: B

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11. The colloidal solution of gelatin in known as

:

A. solvent loving

B. reversible

C. hydrophilic

D. all of these

Answer: D

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12. Sol is a type of colloid in which :

A. solid is dispeersed in liquid

B. liquid is dispersed in solid

C. gas is dispersed in liquid

D. solid is dispersed in solid

Answer: A

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13. Butter is a colloid formed when :

A. fat is dispersed in fat

B. fat is dispersed in water

C. water is disepersed in fat

D. suspension of casein in water

Answer: C

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14. The process of separation of cream form milk is called :

A. emulsification

B. dmulsification

C. electro-osmosis

D. peptization

Answer: B

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15. Smoke is an example of :

A. solid dispersed in solid

B. solid dispersed in gas

C. solid dispersed in liquid

D. gas dispersed in solid

Answer: B

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

A. gaseous particules dispersed in gas

B. gaseous particles dispersed in liquids

C. liquid dispersed in liquid

D. solid dispersed in liquid

Answer: C

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17. Lyophobic colloids are :

A. reversible

B. irreversible

C. water loving

D. solvent loving

Answer: B

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18. Sulphur sol contins

A. discrete sulphur atoms

B. discrete sulphur molecules

C. water dispersed in solid sulphur

D. large aggregates of sulphur molecules

Answer: D

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19. Which of the following is not a colloidal systems ?

A. bread

B. muddy water

C. concrete

D. sugar in water

Answer: D

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20. Peptization denotes :

A. digestion of food

B. hydrolysis of proteins

C. breaking and dispersion into colloidal state

D. precipitation of solid from colloidal dimension

Answer: C

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21. The separation of colloidal particles from those of molecular dimension is known as :

A. dialysis

B. electrophoresis

C. peptization

D. pyrolysis

Answer: A

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22. Bredig's arc method is used for the preparation of colloidal solution of :

A. metals like silver, goldm,etc.

B. organic compounds

C. two liquids

D. inorganic compounds

Answer: A

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23. Which of the following reactions is not used for the preparation of a colloidal solutions ?

A. $2AuCI_3 + 3SNCI_2 \rightarrow 3SnCI_4 + 2Au$

B. $FeCI_3 + 3H_2O \rightarrow Fe(OH)_3 + 3HCI$

C. 2 Mg+CO_2 to 2 MgO +C`

D. $2H_2S + SO_2 \rightarrow 2H_2O \rightarrow 2H_2O + 3S$

Answer: C

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24. When freshly precipitated $Fe(OH)_3$ is boiled with water in the presence of few drops of dil. HCI, a hydrated ferric oxide sol is obtained. This method termed :

A. dialysis

B. peptization

C. ultrafiltration

D. electro-dispersion

Answer: B

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25. Which of the following substance gives a positively charged sol?

A. Gold

B. aresenius sulphide

C. starch

D. ferric hydroxide

Answer: D

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26. Brownian movement was discovered by :

A. robert brown

B. zsigmondy

C. hardy-schulze

D. Graham

Answer: A

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27. The cause of Brownian-movement is

A. temperatures fluctuations within the liquid phase

B. attraction and repulsion between charges on colloidal particles

C. impact of molecules of the dispersion medium on colloidal particles

D. convection currents

Answer: C

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28. Tyndall phenomenon is exhibited by

A. dilute solution

B. colloidal solution

C. suspension

D. true solution

Answer: B

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29. The sky looks blue due to ..... effect.

A. dispersion effect

B. reflection

C. transmission

D. scattering

Answer: D

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30. Tyndall effect in colloidal solution is due to

A. absorption of light

B. scattering of ilght

C. reflection of light

D. presence of electrically charged particles

Answer: B

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31. Migration of colloidal particles under the influence of electrie field is known as.....

A. electro-osmosis

B. brownian movement

C. cataphoresis

D. dialysis

Answer: C

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32. the stability of lyophilic colloids is due to

A. charge on their particles

B. large size of their particles

C. smaller size of their particles

D. a layer of medium of dispersion on their particles

Answer: D

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33. Greater the valency, the higher is the coagulating power of ion.'This rule was inroduced by

A. hardy-schulze

B. graham

C. kossel and lewis

D. faraday

Answer: A

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34. Bleeding is stopped by the application of ferric-chloride this is because:

A. the blood starts flowing in opposite direction

B. the ferric chloride seals the blood vessel

C. the blood reacts and forms a solid which seals the blood vessel

D. the blood is coagulated and thus, the blood vessel seals is sealed

Answer: D

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35. The property of colloidal suspension used to determine the nature of charge on the particles is :

A. sedimentation

B. electrophoresis

C. dialysis

D. ultrafiltration

Answer: B

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36. When excess of electrolyte is added to a colloid it :

A. coagulates

B. gets diluted

C. precipitates

D. does not change

Answer: A

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37. The colloidal solutions of gold prepared by different methods have different colors due to :

A. difference in size of colloidal particles

B. different concentration of gold

C. presence of different types of foreign particles

D. the variable valency of gold

Answer: A

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38. The capacity of an ion to coagulate a colloidal solution depends on

A. its shape

B. the amount of its charge

C. the sign of the charge

D. both, the amount and the sign of the charge

Answer: D

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39. 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 solved

D. there are strong particles electrostatic replusions

Answer: C

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40. which of the following will have the highest coagulating power for As_2S_3 colloid?

A. PO_5^{3-}

B. AI^{3+}

C. SO_4^{2-}

D. Na^+

Answer: B

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41. A negatively charged suspension of clay in water will need for precipitation the minimum amount of

A. aluminium chloride

B. potassium sulphate

C. sodium hydroxide

D. hydrochloric acid

Answer: A

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42. Which of the following ielectrolytes is least effective in causing flocculation of ferric hydroxide sol?

A. $K_3Fe(CN)_6$

B. K_2CrO_4

C. KBr

D. K_2SO_4

Answer: C

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43. Fe^{3+} ions coagulate blood. This show should blood contains colloidal particles bearing.

A. negative charge

B. positive charge

C. no charge

D. either positive or negative charge

Answer: A

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44. Gold number is a measure of

A. stability of colloidal system

B. coagulating power of a colloid

C. size of colloidal particles

D. efficiency of the protective colloid

Answer: D

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45. Gold number is a measure of

A. the amount of gold present in the colloidal solution

B. the amount of gold required to break the colloid

C. the amount of gold required to protect the colloid

D. none of the above

Answer: D

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46. Surface of lyophilic sols is

A. equal to that of solvent

B. less than that of solvent

C. more than that of solvent

D. can not be predicted

Answer: B

47. Gelatin is generally added to ice creams. Why?

A. prevent formation of a colloid

B. stablize t he colloid and prevent crystallisation

C. cause the mixture to solidify easily

D. improve flavour

Answer: B

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48. Which of the following is the best protective colloid?

A. Gelatin (Gold No.0.005)

B. Starch (Gold No. 25)

C. Gum arabic (Gold No.0.08)

D. Egg albumin (Gold No. 0.08)

Answer: A

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49. Gold number is a measure of the :

A. protective action by a lyophilic colloid on lyophobic colloid

B. protective action by a lyophobic colloid on lyophilic colloid

C. number of mg of gold in a standard red gold sol

D. none of the above

Answer: A

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50. On addition of $1mL$ solution of $10\ \%\ NaCl$ to $10mL$ gold sol in the presence of $0.0250g$ of starch, the coagulation is just prevented. What is the gold number of starch?

A. 25.0

B. 2.5

C. 0.25

D. 0.025

Answer: A

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51. The stability of lyophobic sols is due to

A. brownian motion only

B. electric charge only

C. both brownian motion and electric charge

D. particle size

Answer: C

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52. Which one of the following colloidal solutions is postive sol ?

A. blood

B. clay oil

C. smoke

D. gelatin in strongly acidic solution.

Answer: D

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53. An emulsifier is an agenet which

A. stablizes the emulsion

B. coagulation the emulsion

C. retards the dispersion of liquid in liquids

D. homogenises the emulsion

Answer: A

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54. Which of the following is an emulsifier ?

A. oil

B. soap

C. solvent

D. KCl

Answer: B

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55. An emulsifier is an agenet which

A. helps in the dispersion of liquid in liquid

B. stabilises the emulsion

C. coagulates the emulsion

D. purifies the emulsion

Answer: B

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56. The gold numbers of some colloidal solutions are given below :

Colloidal Solution	Gold number
A	0.01
B	2.5
C	20

The projetive powers of these colloidal solutions follow the order :

A. $c > b > a$

B. $a > b > c$

C. $a = b = c$

D. $b > a > c$

Answer: B

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57. Dialyser is a name given to

A. lyophilic colloids

B. lyophobic colloids

C. to a membrane which can separate colloids form the solution

D. none of the above

Answer: C

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58. Flocculation value is expressed in terms of

A. millimole per litre

B. mol per litre

C. gram per litre

D. mol per millilitre

Answer: A

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59. Which of the following has minimum flocculation value ?

A. Pb^{2+}

B. Pb^{4+}

C. Sr^{2+}

D. Na^{+}

Answer: B

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60. The negative charge on As_2S_3 sol is due to adsorption of :

A. H^+

B. OH^-

C. O^{2-}

D. S^{2-}

Answer: D

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61. The eletrolyte having minium floccualtion value of AgI / Ag^{+} sol is

A. Na_2SO_4

B. $NaCI$

C. Na_3PO_4

D. Na_2S

Answer: B

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62. Above critical micelle concentration, particles get :

A. associated

B. dissociated

C. both (a) and (b)

D. none of these

Answer: A

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63. Continous phase contains dispersed phase throughout Example is

A. water in milk

B. fat in milk

C. water in milk

D. oil in water

Answer: A

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64. The movement of dispoerison medium in an electric field when the dispersed particles are prevented form moving is called .

A. cataphoresis

B. electrophoresis

C. electro-osmosis

D. brownian movement

Answer: C

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65. To coagulate gelatin sol, which of the following is most effective ?

A. NaCl

B. Na_3PO_4

C. $AICI_3$

D. `Alcohol

Answer: D

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66. The emulsifying agent in milk is

A. lactic acid

B. fat

C. lactose

D. casein

Answer: D

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67. Colloidal solutions of metals like Cu, Ag, Au and Pt are generally prepared by using .

A. peptization

B. bredig's arc method

C. exchange of solvent

D. oxidation mehtod

Answer: B

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68. Which of the following process is responsible for the dignestion of fat in our intenstine?

A. Electrophoresis

B. demulsification

C. emulsification

D. peptization

Answer: C

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69. Purple of Cassius is

A. colloidal solutions of silver

B. colloidal solution of gold

C. colloidal solution of platinum

D. oxy acids of gold

Answer: B

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70. Which type of molecules form micells ?

A. polar molecules

B. non-polar molecules

C. Surfactant molecules

D. any of these

Answer: C

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71. The name aqualting is given to the colloidal solution of

A. copper in water

B. platinum in water

C. gold in water

D. graphite in water

Answer: D

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72. A liquid is found to scatter a beam of light but leaves no residue when passed through the filter paper.

A. a suspension

B. oil

C. a colloidal sol

D. true solution

Answer: C

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73. The potential differnce between the fixed particles layer and the diffused layer having opposite charge id called :

A. colloidal potential

B. zeta potential

C. electrostatic

D. none of these

Answer: B

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74. An example of micelle is

A. As_2O_3 sol.

B. ruby glass

C. Na_2CO_3 solution

D. sodium stearate concentrated solution

Answer: D

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75. surface tension of lyophilic sols is

A. lower than H_2O

B. more than H_2O

C. equal to H_2O

D. none of these

Answer: A

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76. Curd belongs to the type of colloid

A. gel

B. sol

C. emulsion

D. solid foam

Answer: A

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77. An example of solid -solid system is :

A. smoke

B. coke

C. synthetic gems

D. pumice stone

Answer: C

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78. Detergent action of synthesis detergents is due to their.

A. interfacila area

B. high molecular weight

C. ionisation

D. emulsifying properties

Answer: D

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79. Blood contains .

A. positively charged particles

B. negatively charged particles

C. neutral particles

D. negatively as well as positively charged colloids

Answer: B

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80. Silic a gel is commonly used as :

A. wetting agent

B. drying agent

C. solvent

D. catalyst

Answer: B

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81. Which is not a colloidal solution of gas in liquid

A. froth

B. foams with tiny bubbles

C. mist

D. whipped cream

Answer: C

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82. Emulsions of polyvinyl acetate are used in

A. polishes

B. latex paints

C. fireworks

D. rayons

Answer: B

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83. When white light is passed through a colloidal solution containing fine suspended particles of gold, then the scattering light seen in a direction different form that of incident light is:

A. yellow coloured

B. blue coloured

C. green coloured

D. red coloured

Answer: D

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84. When a sulphur sol is evaporated, solid sulphur is left. On mixing with water no colloidal sol is formed. The sulphur sol is :

A. hydrophilic

B. hydrophobic

C. reversible

D. lyophilic

Answer: B

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85. Tails of comets are visible due to

A. tyndall effect

B. reflection

C. brownian movement

D. none of these

Answer: A

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86. Milk is an example of

A. fat dispersed in water

B. water dispersed in fat

C. water dispersed in oil

D. fat dispersed in fat

Answer: A

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87. Smog is an example of

A. ice dispersed in air

B. water dispersed in air

C. smoke dispersed in air

D. smoke and water dispersed in air

Answer: D

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88. Peptization denotes:

A. digestion of food

B. hydrolysis of proteins

C. breaking and dispersion into colloidal state

D. precipitation of solid from colloidal state

Answer: C

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89. Whipped cream is an example of

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90. Cottrell precipitator acts on which of the following principles ?

A. hardy-schulze rule

B. distribution law

C. le chatelier's principle

D. neutralization of charge on the colloidal particles

Answer: D

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91. CMC (Critical Micelle Concentration) is

A. concentration at which micelles are destroyed

B. concentration at whihc micelle formation starts

C. concentration of electrolyte added to destroy the micelles

D. concentraion of micelles at room temperature

Answer: B

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92. Cod liver oil is

A. fat dispersed in water

B. water dispersed in fat

C. water dispersed in water

D. fat dispersed in fat

Answer: C

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93. Which is not lyophilic colloid ?

A. milk

B. gum

C. fog

D. blood

Answer: C

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94. At the critical micelle concentration, the surfactant molecules :

A. decompose

B. dissociate

C. associate

D. become completely soluble

Answer: C

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95. Which of the following ions can cause coagulation of protons ?

A. Ag^+

B. Na^+

C. Mg^{2+}

D. Ca^{2+}

Answer: A

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

A. linear

B. zig-zag

C. uncertain

D. curved

Answer: B

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97. Which is used in ending charge on colloidal solution?

A. electrons

B. electrolysis

C. positively charged ions

D. compounds

Answer: B

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98. Cloud or fog is a colloidal in which the dispered phase and the dospersion medium are

A. gas, liquid

B. liquid, gas

C. liquid, liquid

D. solid, solid

Answer: B

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99. The electrolyte which has the least effect in the coagulation of $Fe(OH)_3$ sol is

A. potassium carbonate

B. sodium sulphate

C. potassium ferrocyanide

D. potassium iodide

Answer: C

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100. Gold number was given by :

A. ostwald

B. zsigmondy

C. william and chang

D. langmuir

Answer: B

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101. The diameter of colloidal particle ranges from

A. $10^{-9}m$ to $10^{-6}m$

B. $10^{-9}m$ to $10^{-12}m$

C. $10^{3}m$ to $10^{-3}m$

D. $10^{-3}m$ to $10^{-6}m$

Answer: A

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102. In which of the following Tyndall effect is not observed

A. suspensions

B. emulsions

C. colloidal solutions

D. true solutions

Answer: D

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103. Dialysis can separate which of the following in addition to the glucose from human blood ?

A. fructose

B. starch

C. proteins

D. sucrose

Answer: C

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104. Smoke has generally blue tinge. It is due to

A. scattering

B. coagulation

C. brownian motion

D. electrophoresis

Answer: A

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105. on adding $AgNO_3$ solution into KI solution , a negatively charged colloidal sol is obtained when they are in :

A. 100mL of 0.1M $AgNO_3 + 100mL$of 0.1M KI

B. 100mL of 0.1M $AgNO_3 + 50mL$of 0.2M KI

C. 100mL of 0.2 M $AgNO_3 + 100mL$of 0.1M KI

D. 100mL of 0.1M $AgNO_3 + 100mL$ of 0.15 M KI

Answer: D

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106. Peptization of SnO_2 by NaOH gives :

A. $[SnO_2]SnO_3^{2-} : 2Na^+$

B. $[SnO_2]SnO^{4+} : O^{2-}$

C. $[SnO_2]Na^+ : OH^-$

D. $[SnO_2]Sn^{4+} : OH^-$

Answer: A

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107. Alum helps in purifying water by

A. forming Si complex with clay particles

B. sulphate part which combines with the dirt and remove it

C. aluminium which coagulates the mud particles

D. making the mud water soluble

Answer: C

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108. surface tension of lyophilic sols is

A. lower than that H_2O

B. equal to that of H_2O

C. more than that of H_2O

D. none of these

Answer: A

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109. Which one of the following is corectly matched ?

A. emulsion-curd

B. foam -mist

C. aerosol-smoke

D. solid sol-cake

Answer: C

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110. When H_2S gas in passed through nitric acid, the product is :

A. rhomic sulphur

B. primatic sulphur

C. amorphous sulphur

D. monoclinic sulphur

Answer: C

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111. Tyndall effect in shown by :

A. precipitate

B. sol

C. plasma

D. solution

Answer: B

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112. On addition of $1mL$ solution of $10\,\%\,NaCl$ to $10mL$ gold sol in the presence of $0.0250g$ of starch, the coagulation is just prevented. What is the gold number of starch?

A. 0.25

B. 0.025

C. 2.5

D. none of these

Answer: D

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113. Which of the following forms cationic micelles above certain concentration ?

A. sodium dodecyl sulphate

B. sodium acetate

C. urea

D. cetyltrimethyl ammonium bromide

Answer: D

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114. The smog is essentially caused by the presence of :

A. O_2 and O_3

B. O_2 and N_2

C. oxides of sulphur and nitrogen

D. O_3 and N_2

Answer: C

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115. Which one of the following is most effective in causing the coagulation of an As_2S_3 sol ?

A. KCl

B. $AlCI_3$

C. $MgSO_4$

D. $K_3\left[Fe(CN)_6\right]$

Answer: B

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116. The fresh precipitate can be transformed in colloidal state by

A. peptization

B. coagulation

C. diffusion

D. none of these

Answer: A

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117. Oils and fats are obtained by saponification potassium steatrate. Its formula is $CH_3 - (CH_2)_{16} - COO - K_+$. Lyophobic

end of atom is (CH_3) and lyophilic end is $COO - K^+$. Potassium stearate is example of

A. lyophobic colloid

B. lyophilic colloid

C. multimolecular colloid

D. associated colloid or micelle

Answer: D

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118. 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

Answer: A

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119. Muddy water can be purified through coagulation using

A. common salt

B. alums

C. sand

D. lime

Answer: B

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120. The dispersed phase in colloidal iron (III) hydroxide and collodial gold is positively and negtively charged respectively with of the following statement is not correct ?

A. magnesium chloride solution coagulates the gold sol more readily than iron (III) hydroxide sol.

B. sodium sulphate solution cases coagulation in both sols.

C. mixing of the sols has no effect.

D. coagulation in both sols can be brought about by electrophoresis.

Answer: C

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121. An emulsifier is a substance which :

A. stabilises the emulsion

B. homogenises the emulsion

C. coagulates the emulsion

D. accelerate the dispersion of liquid in liquid

Answer: A

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122. Gold number is associated with

A. electrophoresis

B. purple of cassius

C. protective colloid

D. amount of pure gold

Answer: C

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123. Which one of the following is a false statement?

A. cell fluid is an example of sol

B. butter is an example of gel

C. hair cream is an example of foam

D. cheese is an example of emulsion.

Answer: D

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124. The presence of electric charge on colloidal particles is indicated by the property, called :

A. dialysis

B. solubility

C. electrophoresis

D. osmosis

Answer: C

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125. Which of the following properties are characteristic of lyophobic sols ?

1. low viscosity, 2.high viscosity , 3. reversibility and 4. coagulation by electrolytes at low concentration

Select the correct answer using the codes given below:

A. 2,3 and 4

B. 2and 3 only

C. 1 and 4 only

D. 1 and 3 only

Answer: C

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126. In a electrical field, the particles of a colloidal system move towards cathode. The coagulation of the same sol is studied using $K_2SO_4(I)$,Na_3PO_4(II), $\left(K_4\left[Fe(CN)_6\right]\right.$(III) and NaCI (IV). Their coagualating power should be :

A. $(I) > (II) > (III) > (IV)$

B. $(III) > (II) > (I) > (IV)$

C. $(III) > (I) > (II) > (IV)$

D. $(IV) > (III) > (I) > (II)$

Answer: B

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127. Cetyl trimethyl ammonium chloride is which type of detergent ?

A. Cationic

B. anionic

C. biosoft

D. non-ionic

Answer: A

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128. The effective ion used in clarification of water is :

A. Al^{3+}

B. Ca^{3+}

C. Al_4^{2-}

D. PO_4^{3-}

Answer: A

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129. The number of moles of lead nitrate needed to coagulate 2 mole of colloidal $[AgI]I^-$ is :

A. 2

B. 1

C. $\frac{1}{2}$

D. $\frac{2}{3}$

Answer: B

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130. Among the electrolytes Na, SO_4, $CaCl_4$, $Al_2(SO_4)_3$ and NH_4Cl, the most effective coagualting agent for Sb_2S_3 sol is :

A. Na_2SO_4

B. $CaCI_2$

C. $Al_2(SO_4)_3$

D. NH_3CI

Answer: C

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131. A micelle formed during the cleansing aciton of soap is

A. a discreate particle of soap

B. aggregated particles of soap and dirt

C. a discrete particle of dust

D. an aggregated particle of dust and water

Answer: B

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132. The dispersed phase and dispersion medium in soap lather are respectively :

A. gas and liquid

B. liquid and gas

C. solid and gas

D. solid and liqid

Answer: A

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133. Which one of the following is correctly matched?

A. emulsion-smoke

B. gel-butter

C. sol-whipped cream

D. aerosol- hair cream

Answer: B

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134. Coagulation is not done by

A. persistant dialysis

B. boiling

C. electrophoresis

D. peptisation

Answer: D

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135. The coagulating power of electrolytes having inos $Na^{\oplus}$, Al^{3+} and Ba^{2+} for arsenic sulphide sol increases in the order

A. $Ba^{2+} < Na^{+} < Al^{3+}$

B. $Al^{3+} < Na^{+} < Ba^{2+}$

C. $Al^{3+} < Ba^{2+} < Na^{+}$

D. $Na^{+} < Ba^{2+} < Al^{3+}$

Answer: D

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136. Which of the following is an anionic detergent ?

A. sodium sterate

B. sodium lauryl sulphate

C. ceyltrimethyl ammonium bromide

D. glyceryl oleate

Answer: B

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137. Sulphur sol contains :

A. discrete s-atoms

B. discrete s-molecules

C. large aggrements of s-molecules

D. water dispersed in solid sulphur

Answer: C

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138. The Tyndall effect is observed only when following conditions are satisfied:

(A) the diameter of the dispersed particles is much smaller than the wavelength of the light used.

(B) the diameter of the dispersed particle is

not much smaller than the wavelength of the light use

(C) the refreactive indices of the dispersed phase and dispersion medium are almost similar in magnitude

(D) the refractive indices of the dispersed phase and dispersion medium differ greatly in magnitude.

A. (A) and (D)

B. (B)and (D)

C. (A)and (C)

D. (B) and (C)

Answer: B

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139. Which of the following process is responsible for the formation of delta at a place where rivers meet the sea?

A. Coagulation colloid formation

B. emulsification

C. peptization

D.

Answer: A

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140. Gold sol not a :

A. lyophobic sol

B. negatively charged sol

C. macromolecular sol

D. multimolecular colloid

Answer: C

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Step 1 Objective

1. Which of the following statements are correct ?

1.on the application of an electric direction field, the particles of lyophobic sol may move

in either direction or not move at all

2. surface tension of lyophobic sols is similar to that of the dispersion medium.

3. electro-osmosis is the movement of the particles of dispersion medimum under the influence of an electric field.

Select the correct answer using codes given below:

A. 1,2and 3

B. 1 and 3

C. 2 and 3

D. 1 and 3

Answer: C

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2. Which of the following statements are correct ?

A. 1,2 and 3

B. 1,3and 4

C. 2,3and 4

D. 1,2 and 4

Answer: A

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3.

List-I	List-II
A. Coagulation	1. Scattering
B. Lyophilization	2. Washing of precipitates
C. Peptization	3. Purification of colloids
D. Tyndall effect	4. Electrolyte

	A	B	C	D
(a)	4	—	2	1
(b)	2	—	3	4
(c)	—	1	2	4
(d)	4	3	1	—

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4. The flocculating power of the given ions for the specified colloidal sols will be such that:

	Arsenic sulphide sol	Ferric hydroxide sol
(a)	$[Fe(CN)_6]^{4-} > PO_4^{3-} > SO_4^{2-} > Cl^-$	$Al^{3+} > Ba^{2+} > Na^+$
(b)	$Al^{3+} > Ba^{2+} > Na^+$	$[Fe(CN)_6]^{4-} > PO_4^{3-} > SO_4^{2-} > Cl^-$
(c)	$Na^+ > Ba^{2+} > Al^{3+}$	$Cl^- > SO_4^{2-} > PO_4^{3-} > [Fe(CN)_6]^{4-}$
(d)	$Cl^- > SO_4^{2-} > PO_4^{3-} > [Fe(CN)_6]^{4-}$	$Na^+ > Ba^{2+} > Al^{3+}$

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5. The coagulation value in millimoles per litre of electolytes used for the coagulation of As_2S_3 are as below :

A. IgtIIgtIIIgtIV

B. IgtIIgtIII=IV

C. IVgtIIIgtIIgtI

D. IV=IIIgtIIgtI

Answer: C

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6. Cotrell precipitator works on the principle of

:

A. diltribution law

B. addition of electrolyte

C. neutralisation of chrage on colloids

D. le chatelier's principle

Answer: C

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7. The substances involved in micellization are

:

A. polyphilic in nature

B. non-polar in nature

C. diphilic in nature

D. uniphilic in nature

Answer: C

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8. The swelling of 'gel' when placed in water is called:

A. gelation

B. imbibition

C. thixotrphy

D. synthesis

Answer: B

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9. A lyophilic sol is at its isoelectric point then it is :

A. negatively charged

B. positively charge

C. not charged

D. none of these

Answer: C

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10. Sedimentation potential is reverse of :

A. electro-osmosis

B. electrophoresis

C. electrokinetic potential

D. streaming potential

Answer: B

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11. The potential differnce between the fixed particles layer and the diffused layer having opposite charge id called :

A. Zeta potential

B. colloidal potential

C. dorn potential

D. streaming potential

Answer: A

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12. Silver iodide is used for producing artificial rains because Agl:

A. is easy to spray at high altitude

B. is insoluble in water

C. is east to synthesize

D. has crystals similar to ice

Answer: A

View Text Solution

13. All colloidal solutions show :

A. very high osmotic pressure

B. high osmotic pressure

C. low osmotic pressure

D. no osmotic pressure

Answer: C

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14. Colloidation is a colloidal solution of :

A. sucrose in water

B. cellulose in water

C. cellulose nitrate in water

D. cellulose nitrate in ethyl alcohol

Answer: C

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15. During micelle formation :

A. $\Delta H = +ve, \Delta S = +ve$

B. $\Delta H = -ve, \Delta S = -ve$

C. $\Delta H = -ve, \Delta S = +ve$

D. $\Delta H = +ve, \Delta S = -ve$

Answer: A

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16. Which of the following is not the property of hydrophilic solutions ?

A. high concentration of dispersed phase can be easily obtained

B. coagulation is reversible

C. viscosity are surface tension are nearly same as that of water

D. the charge of the particles depends on the ph of the medium and it may be positive , negative or zero

Answer: C

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17. The coagulation of 100ml of colloidal solution of gold is completely prevented by addition of $0.25g$ of a substance "X" to it before addition of 1 ml of $10\,\%$ NaCI solution. The gold number of "X"is :

A. 0.25

B. 25

C. 250

D. 2.5

Answer: B

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18. Select the non- eleastic gel out of the following :

A. Starch

B. agar-agar

C. silicic acid

D. gelatin

Answer: C

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19. The colligative property of a colloidal sol compared to the solution of non-electrolyte of same cancentration will be

A. same

B. higher

C. lower

D. higher or lower

Answer: C

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20. 1 mole of Agl / Ag^{+} sol. Is coagulated by :

A. 1 mole of KI

B. $500ml$ of $1MK_2SO_4$

C. $300ml$ of $1mNa_3PO_3$

D. 1 mole of Agl

Answer: A

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21. 

A. a-4,b-2,c-1,d-5

B. a-1,b-5,c-3,d-2

C. a-4,b-5,c-1,d-2

D. a-1,b-2,c-3,d-5

Answer: A

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22. At CMC, the surfactant molecules undergoes :

A. association

B. aggregation

C. micelle formation

D. all of these

Answer: D

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23. The blue colour of the water of the sea is due to :

A. reflection of blue light by salts present in water

B. scattering of blue light by sol particles

C. reflection of blue coloured light by the impurities present in sea water

D. absorption of radiation of different colours expect blue light.

Answer: B

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24. Statement : to stop bleeding from an injury ferric chloride can be applied.

A. it is not true , ferric chloride is a poison.

B. it it true Fe^{3+} ions coagulate blood which is negatively charged by

C. it is not true ,CI^{-} ions form postively charged sol, profuse bleeding takes place.

D. it is not true, ferric chloride is ionic and gets into blood stream.

Answer: B

25. The coagulation of 200 ml of a positive colloid took place when 0.73g HCI was added to it. The floculation value of HCI for the colloid is :

A. 150

B. 200

C. 100

D. 36.5

Answer: C

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Step 2 Objective

1. Lysione in not used as :

A. disinfectant

B. germ killer

C. treating eye disease

D. anti- cancer drug

Answer: B,C,D

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2. Which of the following are macromolecular colloids?

A. Starch

B. soap

C. Detergent

D. Cellulose

Answer: A,D

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3. Multimolecular colliods are present in :

A. sol of sulphur

B. sol of proteins

C. sol of gold

D. soap solution

Answer: A,C

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4. Mehtods used for the preparation of colloidal solutions are :

A. peptization

B. hydrolysis

C. ultrasonic dispersion

D. coagulation

Answer: A,B,C

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5. Isoelectirc point is the pH at which colloidal particles.

A. coagulate

B. become electrically neutral

C. can move toward either eletrode

D. none of the above

Answer: A,B,C

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6. Consider the following statements for micells, which is/are correct ?

A. at critical micelle concentration,seversal propertie of solution of surfactants such as molar conductivity, surface tension and osmotic pressure change

B. micelles from ionic surfactants can be formed only above a centain

temperature called the kraft temperature.

C. micelle formation is exothermic

D. micelles are associated colloids

Answer: A,B,D

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7. Which of the following are negative colloids ?

A. $Fe(OH)_3$sol

B. As_2S_3 sol

C. blood

D. gold sol

Answer: B,C,D

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8. Which of the following are examples of aerosols ?

A. Whipped cream

B. Cloud

C. fog

D. soap lather

Answer: B,C

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9. tyndall effect is applicable when:

A. the diameter of the dispersed particles is not much smaller than the wavelength of the light used

B. the diameter of the dispersed particles is much smaller than the wavelength of the light used

C. the refractive indices of the dispersed phase and the dispersion medium must be same

D. the refractive indices of the dispersed phase and the dispersion medium must differ greatly in magnitude

Answer: A,D

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10. Choose the correct reason(s) for the stability of the lyophobic colloidal particles.

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Assertion Reason

1. colloidal silver iodies is prepared by adding silver nitrate in slight excess to potassium iodide solution. When subjected to an electric field, the colloidal particles, migrate to the anode.

(R) Colloidal particles absorb ions thus become electrically charged.

A. IF both (A) and (r) are correct and (r) is the correct explanation for (a).

B. If both (a) and (r) are correct but (r) is not the correct explanation for (a).

C. IF (a) is correct but (r) is incorrect.

D. If (a) is incorrect but (r) is correct.

Answer: D

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2. (A) Lyophilic colloids such as starch, gelatin, etc, act as protective colloids .

(R) Protective power of lyophilic colloids is expressed in terms of gold number.

A. IF both (A) and (r) are correct and (r) is the correct explanation for (a).

B. If both (a) and (r) are correct but (r) is not the correct explanation for (a).

C. IF (a) is correct but (r) is incorrect.

D. If (a) is incorrect but (r) is correct.

Answer: B

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3. (a) True solutions do not exhibit tyndall effect.

(r) in true solutions, size of solute particles is much smaller than the wavelength of light used.

A. IF both (A) and (r) are correct and (r) is the correct explanation for (a).

B. If both (a) and (r) are correct but (r) is not the correct explanation for (a).

C. IF (a) is correct but (r) is incorrect.

D. If (a) is incorrect but (r) is correct.

Answer: A

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4. The micelle formed by sodium sterate in water has $-COO^-$ group at the surface.

(r) Surface tension of water is reduced by the addition of stearate.

A. IF both (A) and (r) are correct and (r) is the correct explanation for (a).

B. If both (a) and (r) are correct but (r) is not the correct explanation for (a).

C. IF (a) is correct but (r) is incorrect.

D. If (a) is incorrect but (r) is correct.

Answer: A

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5. lyophilic sols are more stable than lyophobic sols .

(r) Lyophilic sols are highly hydrated in the solution.

A. IF both (A) and (r) are correct and (r) is the correct explanation for (a).

B. If both (a) and (r) are correct but (r) is not the correct explanation for (a).

C. IF (a) is correct but (r) is incorrect.

D. If (a) is incorrect but (r) is correct.

Answer: A

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6. (a) Colloidal sol of $Fe(OH)_3$ formed by peptization carries positive chrage.

(r) During the formation of positively charged colloidal particles of $Fe(OH)_3$ the electons are lost by the colloidal particles of $Fe(OH)_3$.

A. IF both (A) and (r) are correct and (r) is the correct explanation for (a).

B. If both (a) and (r) are correct but (r) is not the correct explanation for (a).

C. IF (a) is correct but (r) is incorrect.

D. If (a) is incorrect but (r) is correct.

Answer: C

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7. Colloidal solutions are purified by dialysis.

(r) In the process of dialysis, colloidal particles pass through parchment paper.

A. IF both (A) and (r) are correct and (r) is the correct explanation for (a).

B. If both (a) and (r) are correct but (r) is not the correct explanation for (a).

C. IF (a) is correct but (r) is incorrect.

D. If (a) is incorrect but (r) is correct.

Answer: C

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8. Fe^{3+} can be used for coagulation of As_2S_3 sol.

(R) Fe^{3+} reacts with As_2s_3 to give Fe_2S_3.

A. IF both (A) and (r) are correct and (r) is the correct explanation for (a).

B. If both (a) and (r) are correct but (r) is not the correct explanation for (a).

C. IF (a) is correct but (r) is incorrect.

D. If (a) is incorrect but (r) is correct.

Answer: C

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9. (A) fat is digested in the intestine by emulsification.

(r) Bile salts stablize the emulsion so formed.

A. IF both (A) and (r) are correct and (r) is the correct explanation for (a).

B. If both (a) and (r) are correct but (r) is not the correct explanation for (a).

C. IF (a) is correct but (r) is incorrect.

D. If (a) is incorrect but (r) is correct.

Answer: A

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10. (A) NH_3CI and $RCOONa$ are colloidal electrolyte.

(R) the substances which behave as electrolyte below a certain concentration limit, beyond

this limit colloidal sol is formed, are called colloidal electrolyte.

A. IF both (A) and (r) are correct and (r) is the correct explanation for (a).

B. If both (a) and (r) are correct but (r) is not the correct explanation for (a).

C. IF (a) is correct but (r) is incorrect.

D. If (a) is incorrect but (r) is correct.

Answer: A

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11. (A) sulphate ores are concentrated by froth floation process.

(R) Pine oil forms emulsion in water.

A. IF both (A) and (r) are correct and (r) is the correct explanation for (a).

B. If both (a) and (r) are correct but (r) is not the correct explanation for (a).

C. IF (a) is correct but (r) is incorrect.

D. If (a) is incorrect but (r) is correct.

Answer: A

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12. The conversion of fresh precipitate to colloidal state is called peptization.

(r) It is caused by addition of common ions.

A. IF both (A) and (r) are correct and (r) is the correct explanation for (a).

B. If both (a) and (r) are correct but (r) is not the correct explanation for (a).

C. IF (a) is correct but (r) is incorrect.

D. If (a) is incorrect but (r) is correct.

Answer: B

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13. (A) surfactent molecules form micelles above the critical micelle concentration (CMC). (R) The conductance of solution of surfactant molecules decreases sharply at the (CMC).

A. IF both (A) and (r) are correct and (r) is the correct explanation for (a).

B. If both (a) and (r) are correct but (r) is not the correct explanation for (a).

C. IF (a) is correct but (r) is incorrect.

D. If (a) is incorrect but (r) is correct.

Answer: B

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14. (A) Soap and detergent are macro-molecular colloids .

(R) soap and detergent are molecular of large size.

A. IF both (A) and (r) are correct and (r) is the correct explanation for (a).

B. If both (a) and (r) are correct but (r) is not the correct explanation for (a).

C. IF (a) is correct but (r) is incorrect.

D. If (a) is incorrect but (r) is correct.

Answer: D

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15. (A) Gold sol is hydrophobic and multimoleular.

(r) Gold sol is prepared by Bredig's arc method.

A. IF both (A) and (r) are correct and (r) is the correct explanation for (a).

B. If both (a) and (r) are correct but (r) is not the correct explanation for (a).

C. IF (a) is correct but (r) is incorrect.

D. If (a) is incorrect but (r) is correct.

Answer: B

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Matrix Matching Type Questions

(i) Gold number	(a) Coagulation
(ii) Lyophobic	(b) An emulsion
(iii) Butter	(c) Gold sol
(iv) Hardy-Schulze rule	(d) Gel
(v) Micelles	(e) Purification of colloidal solution
(vi) Purple of cassius	(f) Protective colloids
(vii) Cheese	(g) Solvent hating
(viii) Dialysis	(h) Associated colloids

1.

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(i) Brownian movement	(a) Aerosol
(ii) Water loving colloids	(b) Ultramicroscope
(iii) Liquid dispersed in gas	(c) Irreversible
(iv) Tyndall effect	(d) Sewage disposal
(v) Hydrophobic	(e) Smoke precipitator
(vi) Coagulation	(f) Hydrophilic
(vii) Electrophoresis	(g) Emulsifying agent
(viii) Soap	(h) Robert Brown

2.

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3.

[C] Property	Statement	Application / discoverer
(i) Tyndall effect	(a) Due to unequal bombardment by solvent molecules	1. Sewage disposal
(ii) Coagulation	(b) Surface area is large	2. Smoke precipitator
(iii) Brownian movement	(c) Movement of colloidal particles under the influence of electric field	3. Ultramicroscope
(iv) Adsorption	(d) Due to neutralisation of charge	4. Ice cream
(v) Electrophoresis	(e) Due to scattering of light	5. Colloidal medicines
(vi) Stability	(f) Addition of protective colloid	6. Robert Brown

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4. Match the following columns

Column-I	Column-II
(a) Rain cloud	(p) Gel
(b) Smoke	(q) Foam
(c) Butter	(r) Aerosol
(d) Soap sud	(s) Gas as dispersion medium

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5. Match the following columns

List-I	List-II
(a) Coagulation	(p) Scattering of light
(b) Peptization	(q) Purification of colloidal solution
(c) Tyndall effect	(r) Addition of electrolyte
(d) Dialysis	(s) Precipitation of colloidal solution

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6.

Column-I (Colloidal solution)	Column-II (Dispersed phase)	Column-III (Dispersion medium)
(a) Colloidion	(p) Water	(u) Ethanol
(b) Fog	(q) Cellulose	(v) Oil
(c) Butter	(r) Fat	(w) Air
(d) Milk	(s) Water	(x) Water

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Column-I	Column-II
(a) Cottrell precipitation	(p) Purification of blood
(b) Electrophoresis	(q) Precipitation of colloidal particles by addition of electrolytes
(c) Hemidialysis	(r) Removal of pollutants from industrial waste gases
(d) Coagulation	(s) Movement of charged colloidal particles towards oppositely charged electrode

7.

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Column-I	Column-
(a) Emulsifier	(p) Colloidal sol of graphite
(b) Colloidal electrolyte	(q) Detergent
(c) Oil dag	(r) Cellophane
(d) Xerogel	(s) Dextrin

8.

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9. Match the following columns

Column-I	Column-II
(a) Milk	(p) Aerosol
(b) Dust	(q) Emulsion
(c) Cheese	(r) Gel
(d) Froth	(s) Foam

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Linked Comprehension Type Questions

1. There are certain substances which behave as normal, strong electrolytes at low concentration but at higher concentration they behave as colloidal solutions due to the formation of aggregated particles. Such colloids are called associated colloids and the aggregated particles are called micelles. Soaps and detergents are the example of associated colloids. the formation of micelles takes place above certain concentration called critical micellization concentration (CMC) and a

characteristic temperature.

Micelles are :

A. emulsions cum gels

B. associated colloids

C. adsorbed catalyes

D. ideal solutions

Answer: B

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2. There are certain substances which behave as normal, strong electrolytes at low concentration but at higher concentration they behave as colloidal solutions due to the formation of aggregated particles. Such colloids are called associated colloids and the aggregated particles are called micelles. Soaps and detergents are the example of associated colloids. the formation of micelles takes place above certain concentration called critical micellization concentration (CMC) and a

characteristic temperature.

What type of molecules form micelles?

A. Non-polar molecules

B. Polar molecules

C. Surfactant molecules

D. Salt of weak acid and weak base

Answer: C

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3. There are certain substances which behave as normal, strong electrolytes at low concentration but at higher concentration they behave as colloidal solutions due to the formation of aggregated particles. Such colloids are called associated colloids and the aggregated particles are called micelles. Soaps and detergents are the example of associated colloids. the formation of micelles takes place above certain concentration called critical micellization concentration (CMC) and a

characteristic temperature.

Micelles are formed only:

A. below the CMC and the Kraft temperature

B. above the CMC and below the Kraft temperature

C. above the cmc and above the kraft temperature

D. below the cmc and above the kraft temperature

Answer: C

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4. There are certain substances which behave as normal, strong electrolytes at low concentration but at higher concentration they behave as colloidal solutions due to the formation of aggregated particles. Such colloids are called associated colloids and the aggregated particles are called micelles. Soaps and detergents are the example of associated

colloids. the formation of micelles takes place above certain concentration called critical micellization concentration (CMC) and a characteristic temperature.

Above CMC, the surfactant molecules undergo :

A. dissociation

B. aggregation

C. micelle formation

D. all of these

Answer: B,C

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5. There are certain substances which behave as normal, strong electrolyte at low concentration but at higher concentration they behave as colloidal solutions due to the formation of aggregated particles. Such colloids called associated colloids and the aggregated particles are called micelles. The formation of micelles take place above certain concentration called critical micellization concentration (CMC) and a characteristic

temperature.

Micelles are used in

A. detergents

B. magnetic separation

C. petroleum recovery

D. all of these

Answer: A,C

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6. Emulsions are also called the colloidal solutions in which the disperse phase as well as dispersion medium are liquids. It may be oil-in-water or water-in-oil type Emulsifiers can be used to stabilize the emulsion. Soaps, detergents, proteins, and gums are used as emulsifiers.

Addition of lyophilic solution to the emulsion forms

A. a protective film around the dispersed phase

B. a protective film around the dispersion medium

C. an aerosol

D. true solution

Answer: A

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7. Emulsions are also called the colloidal solutions in which the disperse phase as well as dispersion medium are liquids. It may be oil-

in-water or water-in-oil type Emulsifiers can be used to stabilize the emulsion. Soaps, detergents, proteins, and gums are used as emulsifiers.

Which of the following examples is/are oil-in-water-type emulsion?

A. Ink

B. Detergent

C. soap

D. milk

Answer: D

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8. Emulsions are also called the colloidal solutions in which the disperse phase as well as dispersion medium are liquids. It may be oil-in-water or water-inoil type Emulsifiers can be sued to stabilize the emulsion. Soaps, detergents, proteins, and gums are used as emulsifiers.

Emulsion can be destroyed by (more than one correct)

A. the addition of emulsifier which tends to form another emulsion

B. electrophoresis with high potential

C. freezing

D. all of the above

Answer: B,C

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9. Emulsions are also called the colloidal solutions in which the disperse phase as well as dispersion medium are liquids. It may be oil-in-water or water-in-oil type Emulsifiers can be used to stabilize the emulsion. Soaps, detergents, proteins, and gums are used as emulsifiers.

Which of the following examples is/are oil-in-water-type emulsion?

A. milk

B. paint

C. shampoo

D. none of these

Answer: D

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10. Emulsions are also the colloidal solutions in which disperse phase as well as dispersion medium are liquids. It may be oil in water or water in oil type. Bancroft proposed that the phase in which the emulsifier is more soluble

becomes the outer phase of the emulsion. Emulsifiers can be used to stabilize the emulsion. Soaps, detergents, proteins and gum, etc., are used as emulsifiers.

Milk is an emulsion in which:

A. milk fat is dispersed in water

B. s solid is dispeersed in water

C. a gas is dispered in water

D. lactose is dispered in water

Answer: A

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11. The process of dialysis finds application in the purification of blood by artifical kidney.In this impure blood is introduced in the artificial kidney, apparatus, where the waste material (electrolyte) diffuses through the membrane. The membrane used in the dialyser is different from the membrane used in osmosis. these membrane allow the movement of ions through them.

Blood is a negatively charged sol. The

haemogolobin particles carry a positive charge. Blood is slightly alkaline (pH 7.36-7.42). Acidic salts like alum and $FeCI_3$ decrease the pH of the blood and the denaturation of globular proteins present in blood takes place. Due to denaturation, these globular proteins become fibrous which are insoluble and stop bleeding . Blood is lyophobic in nature.

To stop bleeding , $FeCI_3$ is applied locally because :

A. $FeCI_3$ seals the blood vessels

B. $FeCI_3$ changes the direction of blood flow

C. $FeCI_3$ reacts with blood to form a solid substance which seals the blood vessel

D. $FeCI_3$ causes denaturation of proteins present in blood

Answer: D

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Which of the following colloidal solutions does not contain negatively charged particles?

A. $Fe(OH)_3$

B. As_2S_3

C. Blood

D. Gold sol

Answer: A

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The coagulating power of an electrolyte for blood decreases in the order :

A. Na^+, Al^{3+}, Ba^{2+}

B. $PO_4^{3-}, SO_4^{2-}, CI^-$

C. Al^{3+}, Ba^{2+}, Na^+

D. $Cl^-, SO_4^{2-}, PO_4^{3-}$

Answer: C

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which of the following statements is/are not true ?

A. Blood is positively charged sol

B. soap solution contians ionic micelles as the colloidal particles

C. blood is purified by the process of dialysis

D. Ca^{2+} and K^{+} coagulation of blood if added in ecess

Answer: A

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become fibrous which are insoluble and stop bleeding . Blood is lyophobic in nature.

which of the following is/are lyophobic colloids?

A. blood

B. starch

C. gelatin

D. gold

Answer: A,D

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Self Assessment

1. Dispersed phase and dispersion medium in butter are respectively :

A. solid and liquid

B. liquid and liquid

C. liquid and solid

D. solid and solid

Answer: B

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2. Which one of the following acts as the best coagulating agent for ferric hydroxide sol?

A. magnesium chloride

B. hydrochloric acid

C. aluminium chloride

D. potassium ferricyanide

Answer: D

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3. Colloidal solution commonly used in treatment of eye disseae is :

A. colloidal sulphur

B. colloidal antimony

C. colloidal silver

D. colloidal gold

Answer: C

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4. The addition of alcohol to a saturated aqueous solution fo calcium acetate first forms a sol and then sets to a gelatinous mass called solid alcohol rich is a:

A. aerosol

B. gel

C. solid foam

D. solid sol

Answer: B

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5. colloidal solutions of gold prepared by different methods are of different colours because of :

A. variable valenct of gold

B. impurities produced by different methods

C. different diameters of colloidal gold particles

D. different concentration of gold particles

Answer: C

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6. Emulsions of polyvinyl acetate are used in :

A. polishes

B. latex paints

C. fire works

D. rayons

Answer: B

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7. the outcome of internal liquid of gel on shaking is called :

A. syneresis

B. imbibition

C. thixotropy

D. precipitation

Answer: C

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8. which of the following shows the maximum hydrophobic begaviour ?

A. adenine

B. glucose

C. stearic acid

D. glycine

Answer: A

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9. the solution of natural rubber in benzene is an example of :

A. lyophobic acid

B. glucose

C. stearic acid

D. glycine

Answer: B

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10. when NaCI solution is added to $Fe(OH)_3$ sol then :

A. $\left[Fe(OH)_3\right]Fe^{3+}$ is formed

B. $\left[Fe(OH)_3\right]CI^-$ is formed

C. $\left[Fe(OH)_3\right]$ is coagulated

D. $\left[Fe(OH)_3\right]Na^+$ is formed

Answer: C

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11. which of the following are lyophilic in nature ?

A. gum

B. sulphur

C. starch

D. protein

Answer: A,C,D

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12. surfactant molecules form micelles in aqueous solution, which:

A. tend to congregate due to their hydrophobic tails

B. are colloidal-sized clustar of molecules

C. provide protection due to their hydrophobic head

D. none of the above

Answer: A,B,C

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13. crystalloid and colloid differ with respect to :

A. tyndall effect

B. particle size

C. diffusion through animal or vegatable membrane

D. number of particels per unit volume of solution.

Answer: A,B,C

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14. select the correct statements among the following :

A. milk is emulsion of fat in water.

B. an emulsifier stabilizes the emulsion

C. emulsifier forms a thin film around the droplets of dispersed phase.

D. milk is an emulsion of protein in water.

Answer: A,B,C

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15. which of the following statements are true?

A. flocculation value is inversely proportional to the coagulating power.

B. colloidal silica is a protective colloid

C. alum is used for cleaning muddy water.

D. gelatin is added in ice cream. It acts as emulsifier.

Answer: A,C,D

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16. Assertion (A): Micelles are formed by surfactant molecules above the critical micellization concentration (CMC) .

Reason(R): The conductivity of a solution having surfactant molecules decreases sharply at the CMC .

A. statement -1 is true, statement-2 is true , statement -2 is a correct

B. statement -1 is true, statement-2 is true , statement -2 is not a correct

C. statement -1 is true, statement-2 is false.

D. statement -1 is false, statement-2 is true.

Answer: B

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17. Assertion: A quious gold colloidal solution is red in colour.

Reason: The colour arises due to scattering of light by colloidal gold particles.

A. statement -1 is true, statement-2 is true , statement -2 is a correct

B. statement -1 is true, statement-2 is true , statement -2 is not a correct

C. statement -1 is true, statement-2 is false.

D. statement -1 is false, statement-2 is true.

Answer: B

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18. an emulsion becomes stable if soap is added to it.

soap contains hydrophobic and hydrophilic parts .

A. statement -1 is true, statement-2 is true , statement -2 is a correct

B. statement -1 is true, statement-2 is true , statement -2 is not a correct

C. statement -1 is true, statement-2 is false.

D. statement -1 is false, statement-2 is true.

Answer: A

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19. Assertion : Colloidal solutions are electrically netural

Reason : Dispersed phase and dispersion medium carry same change.

A. statement -1 is true, statement-2 is true , statement -2 is a correct

B. statement -1 is true, statement-2 is true , statement -2 is not a correct

C. statement -1 is true, statement-2 is false.

D. statement -1 is false, statement-2 is true.

Answer: C

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20. Assertion : Colloidal sol scatters ight while true solution does not.

Reason : The particles in a colloidal sol move slowly than in a true solution.

A. statement -1 is true, statement-2 is true , statement -2 is a correct

B. statement -1 is true, statement-2 is true , statement -2 is not a correct

C. statement -1 is true, statement-2 is false.

D. statement -1 is false, statement-2 is true.

Answer: A

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21. Red blood cells burst when placed in water.

water enters into blood cells due to osmosis.

A. statement -1 is true, statement-2 is true ,

statement -2 is a correct

B. statement -1 is true, statement-2 is true ,

statement -2 is not a correct

C. statement -1 is true, statement-2 is false.

D. statement -1 is false, statement-2 is true.

Answer: A