CHEMISTRY

NCERT - FULL MARKS

CHEMISTRY(TAMIL)

SURFACE CHEMISTRY

Self Evaluation A Choose The Correct Answer

1. The migration of colloidal particles under the influence of an electric field is known as

A. electroosmosis

B. cataphoresis

C. electrodialysis

D. electrophoresis

Answer:

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2. Fog is colloidal solution of

A. gas in liquid

B. liquid in gas

C. gas in solid

D. solid in gas

Answer:

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3. The phenomenon of Tyndall's effect is not observed in

A. emulsion

B. colloidal solution

C. true solution

D. None

Answer:

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4. The Tyndall's effect associated with colloidal particles is due to

A. presence of charge

B. scattering of light

C. absorption of light

D. reflection of light

Answer:

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5. In case of physical adsorption, there is desorption when

A. temperature increases

B. temperature decreases

C. pressure increases

D. concentration increases

Answer:

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6. Colloidal medicines are more efffective because

A. they are clean

B. they are easy to prepare

C. the germs more towards, them

D. they are easily assimilated and adsorbed

Answer:

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7. What are the two types of emulsion?

A. O/W

B. W/O

C. O/O

D. W/W

Answer:

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8. Which is used as a catalyst during the process of hydrogenation of oils?

A. Ni at $250^{\circ} C$

B. Pt at $25^{\circ} C$

C. Pd, partially inactivated by quinoline

D. Raney nickel

Answer:

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9. For chemisorption, which is wrong?

A. irreversible

B. it requires activation energy

C. it forms multimolecular layers on adsorbate

D. surface compounds are formed

Answer:

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10. An emulsion is a colloidal solution of

A. two solids

B. two liquids

C. two gases

D. one solid and one liquid

Answer:

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11. Colloids are purified by

A. precipitation

B. coagulation

C. dialysis

D. filtration

Answer:

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Self Evaluation B Answer In One Or Two Sentences

1. Discuss the factors affecting adsorption.

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2. Smoke is a colloidal solution of

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3. What is electrophoresis?

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4. What is catalysis?

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5. What are the two types of catalysis?

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6. What are active centers ?

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7. Why colloidal system in gas in gas does not exist ?

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8. Why colloids are purified ?

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9. (i) Derive the relation between pH and pOH

(ii) Give three uses of emulsions.

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10. What is Tyndall scattering ?

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Self Evaluation C Answer Not Exceeding Sixty Words

1. In case of physical adsorption, there is desorption when

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2. Explain graphical representation of chemical adsorption and physical adsorption.

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3. Write a note on catalytic reactions.

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4. Write notes on

i. Positive catalyst

ii. Negative catalyst

iii. Auto catalyst

iv. Induced catalyst

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5. Write briefly about the theories of catalysis.

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6. Write the applications of catalysis.

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7. Write briefly about the preparation of colloids by condensation methods.

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8. Write briefly about the preparation of colloids by condensation methods.

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9. Write a note on dialysis.

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10. What is reverse osmosis?

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11. Write a note about medicinal applications of colloids .

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Evaluation Choose The Correct Answer

1. For freudlich isotherm a graph of $\log \frac{x}{m}$ is plotted against log P. The slope of the line and its y – axis intercept respectively corresponds to

A. $1/n, k$

B. $\log 1/n, k$

C. $1/n, \log k$

D. $\log 1/n, \log k$

Answer: C

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2. Which of the following is incorrect for physisorption?

A. reversible

B. increases with increase in temperature

C. low heat of adsorption

D. increases with increase in surface area

Answer: B

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3. Which one of the following characteristics are associated with adsorption? (NEET)

A. ΔG and ΔH are negative but ΔS is positive

B. ΔG and ΔS are negative but ΔH is positive

C. ΔG is negative but ΔH and ΔS are positive

D. ΔG, ΔH and ΔS all are negative.

Answer: D

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4. Fog is colloidal solution 0 of

A. solid in gas

B. gas in gas

C. liquid in gas

D. gas in liquid

Answer: C

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5. Assertion : Coagulation power of Al^{3++} is more than Na^{+}.

Reason : greater the valency of the flocculating ion added, greater is its power to cause precipitation

A. if both assertion and reason are true and reason is the correct explanation of

assertion.

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. assertion is true but reason is false

D. both assertion and reason are false.

Answer: A

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6. Statement :

To stop bleeding from an injury, ferric chloride can be applied. Which comment about the statement is justified?

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

B. It is true, Fe^{3+} ions coagulate blood which is a negatively charged sol

C. It is not true, ferric chloride is ionic and gets into the blood stream.

D. It is true, coagulation takes place because of formation of negatively charged sol with Cl.

Answer: B

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7. Hair cream is

A. gel

B. emulsion

C. solid sol

D. sol

Answer: B

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8. Which one of the following is correctly matched?

a) Emulsion	–	Smoke
b) Gel	–	butter
c) foam	–	Mist
d) whipped cream	–	sol

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9. The most effective electrolyte for the coagulation of AS_2S_3Sol is

A. NaCl

B. $Ba(NO_3)_2$

C. $K_2\left[Fe(CN)_6\right]$

D.

Answer: D

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10. Which one of the is not a surfactant?

A.

$$CH_3 - (CH_2)_{15} - N - (CH_3)_2CH_2Br$$

B. $CH_3 - (CH_2)_{15} - NH_2$

C. $CH_3 - (CH_2)_{16}CH_2OSO_2^- Na^+$

D.

$$OHC - (CH_2)_{14} - CH_2 - COO^- Na^+$$

Answer: B

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11. The phenomenon observed when a beam of light is passed through a colloidal solution is

A. Cataphoresis

B. Electrophoresis

C. Coagulation

D. Tyndall effect

Answer: D

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12. In an electrical field, the particles of a colloidal system move towards cathode. The coagulation of the same sol is studied using $K_2SO_4(i), Na_3PO_4(ii), K_4\left[Fe(CN)_6\right]$ (iii) and NaCl (iv) Their coagulating power should be

A. $II > I > IV > III$

B. $III > II > I > IV$

C. $I > II > III > IV$

D. none of these

Answer: B

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13. Collodion is a 4% solution of which one of the following compounds in alcohol – ether mixture?

A. Nitroglycerine

B. Cellulose acetate

C. Glycoldinitrate

D. Nitrocellulose

Answer:

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14. Which one of the following is an example for homogeneous catalysis?

A. manufacture of ammonia by Haber's process

B. manufacture of sulphuric acid by contact process

C. hydrogenation of oil

D. Hydrolysis of sucrose in presence of all HCl

Answer: D

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15. The coagulation values in millimoles per litre of the electrolytes used for the coagulation of AS_2S_3 are given below

(I) (NaCl)=52 (II) $((BaCl_2) = 0.69$ (III)

$(MgSO_4) = 0.22$

The correct order of their coagulating power is

A. $III > II > I$

B. $I > II > III$

C. $I > III > II$

D. $II > III > I$

Answer: A

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16. Adsorption of a gas on solid metal surface is spontaneous and exothermic, then

A. ΔH increases

B. ΔS increases

C. ΔG increases

D. ΔS decreases

Answer: D

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17. If x is the amount of adsorb ate and m is the amount of adsorbent, which of the following relations is not related to adsorption process?

A. $x/m = f(P)$ at constant T

B. $x/m = f(T)$ at constant P

C. P=f(T) at constant x/m

D. $x/m = PT$

Answer: D

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18. On which of the following properties does the coagulating power of an ion depend ? (NEET – 2018)

A. Both magnitude and sign of the charge on the ion

B. Size of the ion alone

C. the magnitude of the charge on the ion alone

D. the sign of charge on the ion alone.

Answer: A

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19. Match the following

A) Pure nitrogen	i) Chlorine
B) Haber process	ii) Sulphuric acid
C) Contact process	iii) Ammonia
D) Deacons Process	iv) sodium azide (or) Barium azide

Which of the following is the correct option?

A. $\begin{matrix} A & B & C & D \\ (i) & (ii) & (iii) & (iv) \end{matrix}$

B. $\begin{matrix} A & B & C & D \\ (ii) & (iv) & (i) & (iii) \end{matrix}$

C. $\begin{matrix} A & B & C & D \\ (iii) & (iv) & (ii) & (i) \end{matrix}$

D. $\begin{matrix} A & B & C & D \\ (iv) & (iii) & (ii) & (i) \end{matrix}$

Answer: D

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Evaluation Short Answer

1. Peptising agent is added to convert precipitate into colloidal solution. Explain with an example.

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