



CHEMISTRY

BOOKS - KUMAR PRAKASHAN KENDRA CHEMISTRY (GUJRATI ENGLISH)

SURFACE CHEMISTRY

Section A

1. What is adsorption, adsorbate, adsorbent and desorption ?

Explain with appropriate examples.



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2. Explain the distinction between adsorption and absorption.



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3. Explain the mechanism of adsorption.



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4. Give information about the type of adsorption.



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5. Explain the characteristics of physisorption & chemisorption.



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6. Give difference between physical adsorption and chemical adsorption.



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7. Give information about Freundlich adsorption isotherm.



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8. Explain adsorption from solution phase.



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9. Give explanation on application of adsorption.



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10. Give information about catalysis and explain about promoters.

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11. Give information about Homogeneous catalysis and Heterogeneous catalysis.

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12. Explain the adsorption theory of Heterogeneous catalysis.

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13. Give information about important features of solid catalysts.

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14. Explain the shape selective catalysis by zeolites.



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15. Explain enzyme catalysis by giving an example.



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16. Explain characteristics of enzyme catalysis.



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17. Explain the mechanism of enzyme catalysis.



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18. Give information about the utility of catalysts in industries.



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19. Give information about colloids.



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20. Explain classification of colloids.



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21. Give information about lyophilic colloids and lyophobic colloids.



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22. Explain classification based on type of particles of the dispersed phase, multimolecular, macromolecular and associated colloids.

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23. Explain mechanism of micelle formation by giving an example.

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24. Explain cleansing action of soaps.

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25. Explain chemical methods, Bredig's Arc method and peptization method for the preparation of colloids.

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26. Explain the purification of colloidal solution.

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27. Give information about colligative properties and colour of colloidal solutions.

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28. Explain Tyndall effect.

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29. Give information about Brownian movement.

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30. Give information about the charge on colloidal particles.

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31. Explain Electrophoresis.

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32. Give information about coagulation or precipitation.

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33. Explain about coagulation of lyophilic sols and protection of colloids.



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34. Give information about Emulsion.



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35. Give information about examples of colloids.



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36. Give information about applications of colloids.

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Section B Intext Questions And Answers

1. Write any two characteristics of Chemisorption.

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2. Why does physisorption decrease with the increase of temperature ?

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3. Why are powdered substances more effective adsorbents than their crystalline forms ?



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4. In Haber's process, hydrogen is obtained by reacting methane with steam in presence of NiO as catalyst. The process is known as steam reforming. Why is it necessary to remove CO when ammonia is obtained by Haber's process?



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5. Why is the ester hydrolysis slow in the beginning and becomes faster after sometime?



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6. What is the role of desorption in the process of catalysis.



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7. What modification can you suggest in the Hardy-Schulze law ?

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8. Why is it essential to wash the precipitate with water before estimating it quantitatively ?

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Section C Textual Exercise

1. Distinguish between the meaning of the terms adsorption and absorption. Give one example of each.

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2. Give reason why a finely divided substance is more effective as an adsorbent.

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3. What are the factors which influence the adsorption of a gas on a solid ?

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4. What do you understand by activation of adsorbent? How is it achieved ?

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5. Why is adsorption always exothermic ?



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6. Discuss the effect of pressure and temperature on the adsorption of gases on solids.



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7. What are lyophilic and lyophobic sols ? Give one example of each type. Why are hydrophobic sols easily coagulated ?



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8. What is the difference between multimolecular and macromolecular colloids ? Give one example of each. How are associated colloids different from these two types of colloids ?

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9. What are enzymes ? Write in brief the mechanism of enzyme catalysis.

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10. Explain what is observed :

- (i) When a beam of light is passed through a colloidal sol.
- (ii) An electrolyte, NaCl is added to hydrated ferric oxide sol.
- (iii) Electric current is passed through a colloidal sol ?

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11. How do emulsifiers stabilise emulsion ? Name two emulsifiers.

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12. What do you mean by activity and selectivity of catalysts?

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13. Describe some features of catalysis by zeolites.

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14. What is shape selective catalysis ?

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15. Explain the following terms :

(i) Electrophoresis

(ii) Coagulation

(iii) Dialysis

(iv) Tyndall effect.



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16. Give four uses of emulsions.



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17. Explain the terms with suitable examples :

(i) Alcosol (ii) Aerosol (iii) Hydrosol.



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18. Comment on the statement that "colloid is not a substance but a state of substance".



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Section D Ncert Exemplar Solution Multiple Choice Questions Mcqs

1. Which of the following process does not occur at the interface of phases ?

- A. Crystallisation
- B. Heterogeneous catalysis
- C. Homogeneous catalysis
- D. Corrosion

Answer: C



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2. At the equilibrium position in the process of adsorption

A. $\Delta H > 0$

B. $\Delta H = T\Delta S$

C. $\Delta H > T\Delta S$

D. $\Delta H < T\Delta S$

Answer: B



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3. Which of the following interface cannot be obtained ?

A. Liquid - liquid

B. Solid - liquid

C. Liquid - gas

D. Gas - gas

Answer: D



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4. The term "sorption" stands for

A. absorption

B. adsorption

C. both absorption and adsorption

D. desorption

Answer: C

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5. Extent of Physisorption of a gas increases with

- A. increase in temperature
- B. decrease in temperature
- C. decrease in surface area of adsorbent
- D. decrease in strength of van der Waals' force

Answer: B

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6. Extent of adsorption of adsorbate from solution phase increases with...

- A. increase in amount of adsorbate in solution
- B. decrease in surface area of adsorbent
- C. increase in temperature of solution
- D. decrease in amount of adsorbate in solution

Answer: A



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7. Which one of the following is not applicable to the phenomenon of adsorption ?

- A. $\Delta H > 0$

B. $\Delta G < 0$

C. $\Delta S < 0$

D. $\Delta H < 0$

Answer: A



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8. Which of the following is not a favourable condition for physical adsorption ?

A. High pressure

B. Negative ΔH

C. Higher critical temperature of adsorbate

D. High temperature

Answer: D



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9. Physical adsorption of a gaseous species may change to chemical adsorption with

- A. decrease in temperature
- B. increase in temperature
- C. increase in surface area of adsorbent
- D. decrease in surface area of adsorbent

Answer: B



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10. In physisorption, adsorbent doesnot show specificity for any particular gas because

- A. involved van der Waals' force are universal
- B. gases involved behave like ideal gases
- C. enthalpy of adsorption is low
- D. it is a reversible process

Answer: A



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11. Which of the following is an example of absorption ?

- A. Water on silica gel
- B. Water on calcium chloride

C. Hydrogen on finely divided nickel

D. Oxygen on metal surface

Answer: B



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12. On the basis of data given below predict which of the following gases shows least adsorption on a definite amount of charcoal ?



A. CO_2

B. SO_2

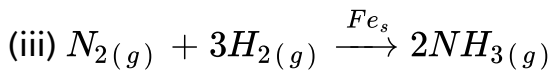
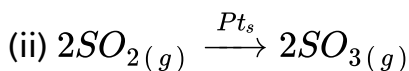
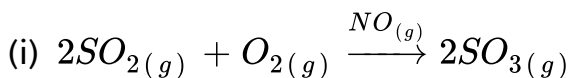
C. CH_4

D. H_2

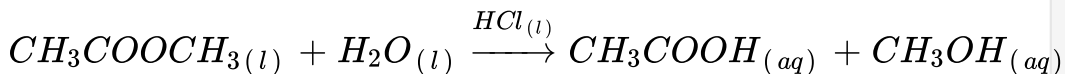
Answer: D



13. In which of the following reactions heterogeneous catalysis is involved ?



(iv)



A. (ii), (iii)

B. (ii), (iii) and (iv)

C. (i), (ii) and (iii)

D. (iv)

Answer: A

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14. At high concentration of soap in water, soap behaves as

- A. molecular colloid
- B. associated colloid
- C. macromolecular colloid
- D. lyophilic colloid

Answer: B

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15. Which of the following will show Tyndall effect?

A. Aqueous solution of soap below critical micelle concentration

B. Aqueous solution of soap above critical micelle concentration

C. Aqueous solution of sodium chloride

D. Aqueous solution of sugar

Answer: B



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16. Method by which lyophobic sol can be protected.

A. By addition of oppositely charged sol

B. By addition of an electrolyte

C. By addition of lyophilic sol

D. By boiling

Answer: C

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17. Freshly prepared precipitate sometimes gets converted to colloidal solution by

A. coagulation

B. electrolysis

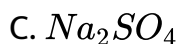
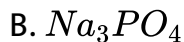
C. diffusion

D. peptisation

Answer: D

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18. Which of the following electrolytes will have maximum coagulating value for $A\frac{g}{A}g^+$ sol?



Answer: D



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19. A colloidal system having a solid substance as a dispersed phase and a liquid as a dispersion medium is classified as

A. solid sol

B. Gel

C. emulsion

D. sol

Answer: D



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20. The values of colligative properties of colloidal solution are of small order in comparison to those shown by true solutions of same concentration because colloidal particles...

A. exhibit enormous surface area

B. remain suspended in the dispersion medium

C. form lyophilic colloids

D. are comparatively less in number

Answer: D

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21. Arrange the following diagrams in correct sequence of steps involved in the mechanism of catalysis, in accordance with modern adsorption theory.



A. $i \rightarrow ii \rightarrow iii \rightarrow iv \rightarrow V$

B. $i \rightarrow iii \rightarrow ii \rightarrow iv \rightarrow v$

C. $i \rightarrow iii \rightarrow ii \rightarrow V \rightarrow iv$

D. $i \rightarrow ii \rightarrow iii \rightarrow v \rightarrow iv$

Answer: B

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

- A. Emulsification
- B. Colloid formation
- C. Coagulation
- D. Peptisation

Answer: C



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23. Which of the following curves is in according with Freundlich adsorption isotherm ?

- A. 

B. 

C. 

D. 

Answer: C



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24. Which of the following process is not responsible for the presence of electric charge on the sol particles ?

- A. Electron capture by sol particles
- B. Adsorption of ionic species from solution
- C. Formation of Helmholtz electrical double layer
- D. Absorption of ionic species from solution

Answer: D



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25. Which of the following phenomenon is applicable to the process shown in the figure ?



- A. Absorption
- B. Adsorption
- C. Coagulation
- D. Emulsification

Answer: B



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Section D Ncert Exemplar Solution Multiple Choice Questions Mcqs More Than One Option

1. Which of the following options are correct?

- A. Micelle formation by soap in aqueous solution is possible at all temperatures.
- B. Micelle formation by soap in aqueous solution occurs above a particular concentration.
- C. On dilution of soap solution micelles may revert to individual ions.
- D. Soap solution behaves as a normal strong electrolyte at all concentrations.

Answer: A::B::C::D



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2. Which of the following statements are correct about solid catalyst ?

- A. Same reactants may give different product by using different catalyst.
- B. Catalyst does not change ΔH of the reaction.
- C. Catalyst is required in large quantities to catalyse reactions.
- D. Catalytic activity of a solid catalyst does not depend upon the strength of chemisorption.

Answer: A::B::D



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3. Freundlich adsorption isotherm is given by the expression

$$\frac{x}{m} = kp^{\frac{1}{n}}. \text{ Which of the following conclusions can be drawn from}$$

this expression ?

- A. When $\frac{1}{n} = 0$, the adsorption is independent of pressure.
- B. When $\frac{1}{n} = 0$, the adsorption is directly proportional to pressure.
- C. When $n = 0$, $\frac{x}{m}$, vs p-graph is a line parallel to X-axis.
- D. When $n = 0$, plot of $\frac{x}{m}$ vs p is a curve.

Answer: A::C::D



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4. H_2 gas is adsorbed on activated charcoal to a very little extent in comparison to easily liquefiable gases due to

- A. very strong van der Waals' interaction.
- B. very weak van der Waals' forces.
- C. very low critical temperature.
- D. very high critical temperature.

Answer: A::B::C::D



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5. Which of the following statements are correct?

- A. Mixing two oppositely charged sols neutralises their charges and stabilizes the colloid.
- B. Presence of equal and similar charges on colloidal particles provides stability to the colloids.

- C. Any amount of dispersed liquid can be added to emulsion without destabilising it.
- D. Brownian movement stabilizes sols.

Answer: A::B::D



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6. An emulsion cannot be broken by and

- A. Heating
- B. Adding more amount of dispersion medium
- C. Freezing
- D. Adding emulsifying agent

Answer: A::B::D





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7. Which of the following substances will precipitate the negatively charged emulsions ?

A. KCl

B. Glucose

C. Urea

D. $NaCl$

Answer: A::D



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8. Which of the following colloids cannot be coagulated easily ?

A. Lyophobic colloids

B. Irreversible colloids

C. Reversible colloids

D. Lyophilic colloids

Answer: A::C::D



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9. What happens when a lyophilic sol is added to a lyophobic sol?

A. Lyophobic sol is protected

B. Lyophilic sol is protected

C. Film of lyophilic sol is formed over lyophobic sol

D. Film of lyophobic sol is formed over lyophilic sol

Answer: A::C::D





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10. Which phenomenon occurs when an electric field is applied to a colloidal solution and electrophoresis is prevented ?

- A. Reverse osmosis takes place
- B. Electroosmosis takes place
- C. Dispersion medium begins to move
- D. Dispersion medium becomes stationary

Answer: A::B::C::D



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11. In a reaction, catalyst changes

- A. Physically

- B. qualitatively
- C. chemically
- D. quantitatively

Answer: A::B::D



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12. Which of the following phenomenon occurs when a chalk stick is dipped in ink?

- A. Adsorption of coloured substance
- B. Adsorption of solvent
- C. Absorption and adsorption both of solvent
- D. Absorption of solvent

Answer: A::D

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Section D Ncert Exemplar Solution Short Answer Type Questions

1. Why is it important to have clean surface in surface studies?

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2. Why is chemisorption referred to as activated adsorption ?

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3. What type of solutions are formed on dissolving different concentration of soap in water?



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4. What happens when gelatin is mixed with a gold sol?



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5. How does it become possible to cause artificial rain by spraying silver iodide on the clouds ?



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6. Gelatin which is a peptide is added in ice creams. What can be its role?



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7. What is collodion ?



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8. Why do we add alum to purify water ?



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9. What happens when the electric field is applied to colloidal solution ?



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10. What causes Brownian motion in colloidal dispersion ?



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11. A colloid is formed by adding FeCl_3 in excess of hot water. What will happen if excess sodium chloride is added to this colloid ? The

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12. How do emulsifying agents stabilize the emulsion ?

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13. Why are some medicines more effective in the colloidal form ?

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14. Why does leather get hardened after tanning ?

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15. How does the precipitation of colloidal smoke take place in cottrell precipitation ?

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16. How will you distinguish between dispersed phase and dispersion medium in an emulsion?

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17. On the basis of Hardy-Schulze rule explain why the coagulating power of phosphate is higher than chloride.

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18. Why does bleeding stop by rubbing moist alum?

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19. Why is $Fe(OH)_3$ colloid positively charged when prepared by adding $Fe(OH)_3$ to hot water ?

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20. Why do physisorption and chemisorption behave differently with rise in temperature ?

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21. What happens when dialysis is prolonged ?





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22. Why does the white precipitate of silver halide become coloured in the presence of dye eosin ?



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23. What is the role of activated charcoal in gas masks used in coal mines ?



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24. How does a delta form at the meeting place of sea and river water ?



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25. Give an example where physisorption changes to chemisorption with rise in temperature. Explain the reason for change.



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26. Why is desorption important for a substance to act as good catalyst ?



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27. What is the role of diffusion in heterogeneous catalysis ?



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28. How does a solid catalyst enhance the rate of combination of gaseous molecules ?

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29. Do the vital functions of the body such as digestion get affected during fever ? Explain your answer.

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Section D Ncert Exemplar Solution Matching The Columns

1. Method of formation of solution is given in Column-I. Match it with the type of solution given in Column-II.



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2. Match the statement given in Column - I with the phenomenon given in Column - II.



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3. Match the items given in Column - I and Column - II.



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4. Match the type of colloidal systems given in Column - I with the name given in Column - II.





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5. Match the items of Column - I and Column - II.



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6. Match the items of Column - I and Column - II.



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Section D Ncert Exemplar Solution Assertion And Reason Type Questions

1. Assertion (A) : An ordinary filter paper impregnated with collodian solution stops the flow of colloidal particles.

Reason (R) : Pore size of the filter paper becomes more than the size of colloidal particles.

A. Assertion and reason are correct and reason is correct explanation of assertion.

B. Assertion and reason both are correct but reason does not explain assertion.

C. Assertion is correct but reason is incorrect.

D. Both assertion and reason are incorrect.

Answer: A::B::C



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2. Assertion (A) : Colloidal solutions show colligative properties.

Reason (R) : Colloidal particles are large in size.

A. Assertion and reason are correct and reason is correct explanation of assertion.

B. Assertion and reason both are correct but reason does not explain assertion.

C. Assertion is correct but reason is incorrect.

D. Both assertion and reason are incorrect.

Answer: A::B::C



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3. Assertion (A) : Colloidal solutions do not show Brownian motion.

Reason (R) : Brownian motion is responsible for stability of sols.

- A. Assertion and reason are correct and reason is correct explanation of assertion.
- B. Assertion and reason both are correct but reason does not explain assertion.
- C. Assertion is correct but reason is incorrect.
- D. Both assertion and reason are incorrect.

Answer: A::B::C



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4. Assertion (A) : Coagulation power of Al^{3+} is more than Na^{+} .

Reason (R) : Greater the valency of the flocculating ion added, greater is its power to cause precipitation. (Hardy-Schulze Rule)

- A. Assertion and reason are correct and reason is correct explanation of assertion.
- B. Assertion and reason both are correct but reason does not explain assertion.
- C. Assertion is correct but reason is incorrect.
- D. Both assertion and reason are incorrect.

Answer: A::B::C



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5. Assertion (A) : Detergents with low CMC are more economical to use.

Reason (R) : Cleansing action of detergents involves the formation of micelle. These are formed when the concentration of detergents becomes equal to CMC.

- A. Assertion and reason are correct and reason is correct explanation of assertion.
- B. Assertion and reason both are correct but reason does not explain assertion.
- C. Assertion is correct but reason is incorrect.
- D. Both assertion and reason are incorrect.

Answer: A::B::C

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Section D Ncert Exemplar Solution Long Answer Type Questions

1. What is the role of adsorption in heterogeneous catalysis?

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2. What are the applications of adsorption in chemical analysis ?



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3. What is the role of adsorption in froth floatation process used especially for concentration of sulphide ores ?



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4. What do you understand by shape selective catalysis ? Why are zeolites good shape selective catalysts?



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1. What does it called if the accumulation of molecular species at the surface rather than in the bulk of solid or liquid ?

A. Adsorbent

B. Adsorbate

C. Adsorption

D. Catalysis

Answer: C



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2. What is the other name of physical adsorption ?

A. Chemisorption

B. Physisorption

C. Physisorption

D. None of above

Answer: C



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3. What is the other name of chemical adsorption ?

A. Chemisorption

B. Physisorption

C. Chemisorption

D. None of above

Answer: A



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4. Which adsorption is produced due to van der Waal's forces ?

- A. Physical adsorption
- B. Chemical adsorption
- C. Chemisorption
- D. None of above

Answer: A



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5. is irreversible adsorption.

- A. Physical adsorption
- B. Chemical adsorption
- C. Chemisorption

D. (B) and (C) both

Answer: D



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6. Straight line slope of Freundlich isotherm curve indicates the value of

A. n

B. $\frac{1}{n}$

C. n^2

D. $\frac{1}{n^2}$

Answer: B



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7. Which adsorbents are used for removing moisture and controlling humidity ?

- A. Silica
- B. Aluminium gel
- C. (A) and (B) both
- D. None of above

Answer: C



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8. Which of the following is the formula of Potassium chlorate ?

- A. $KClO$
- B. $KClO_2$

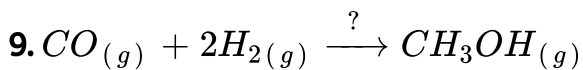
C. $KClO_3$

D. $KClO_4$

Answer: C



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A. Ni

B. $Cu / ZnO - Cr_2O_3$

C. Cu

D. ZnO

Answer: B



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10. catalyst is used to convert sugar into Glucose and Fructose.

A. Invertase

B. Zymase

C. Diastase

D. Urease

Answer: A



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11. If dispersed phase and dispersion medium both are solid, this type of sol is called

A. Sol

B. Solid sol

C. Aerosol

D. Emulsion

Answer: B



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12. is example of solid sol.

A. Colour particles

B. Gem stone

C. Smoke

D. Jellies

Answer: B





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13. is example of sol.

- A. Coloured glass
- B. Paints and cell fluids
- C. Smoke
- D. Jellies

Answer: B



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14. is example of Gel.

- A. Fog
- B. Hair cream

C. Cheese

D. Foam rubber

Answer: C



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15. Fog is an example of

A. Solid sol

B. Sol

C. Aerosol

D. Gel

Answer: C



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16. Foam rubber is an example of

- A. Solid sol
- B. Aerosol
- C. Sol
- D. Emulsion

Answer: B



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17. CMC value for soap is

- A. 10^{-4} to 10^{-2} mol/L
- B. 10^{-3} to 10^{-2} mol/L
- C. 10^{-4} to 10^{-3} mol/L

D. 10^{-3} to 10^{-1} mol/L

Answer: C



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18. A bright cone of light is called in Tyndall effect.

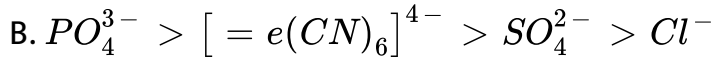
- A. Tyndall cone
- B. Aggregate cone
- C. Light cone
- D. None of above

Answer: A



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19. Which of the following is the correct order of flocculating for the coagulation of positive ion ?



D. None of these

Answer: C



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20. Physical adsorption is....

A. instantaneous and reversible.

B. instantaneous and irreversible.

C. specific and reversible.

D. non specific and irreversible.

Answer: A

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21. Which of the following can generally occur at low temperature ?

- A. Physical adsorption
- B. Physical and chemical adsorption
- C. Chemical adsorption
- D. None of above.

Answer: A

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22. What will be change in adsorption of gas observed on utilization of Fe powder instead of Fe solid ?

- A. It increases
- B. It decreases
- C. No effect
- D. Remain constant

Answer: A



[View Text Solution](#)

23. In Freundlich adsorption isotherm, graph $\frac{x}{m} \rightarrow P$ does not increases suddenly on increase with value of P, because....

- A. Value of $\frac{x}{m}$ is very less.

B. It possess only uni-molecular adsorption.

C. It has multi molecular adsorption.

D. Value of k do not express.

Answer: C



[View Text Solution](#)

24. If adsorption occur on solid surface is limited to uni molecular layer than which of the following statement is true ?

A. Value of $\frac{x}{m}$ remain independent of effect of less pressure of gas.

B. At high pressure, value of $\frac{x}{m}$ is more deviated in vapour pressure.

C. At normal pressure, value of $\frac{x}{m}$ remain relative less with respect to pressure.

D. At low pressure of air, value of $\frac{x}{m}$ is directly proportional to pressure.

Answer: D



[View Text Solution](#)

25. What should be added to reduce the intensity of colour in coloured solution ?

A. Salt

B. Cl_2 gas

C. Charcoal

D. Powder of Fe

Answer: C



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26. is used as adsorbent in froth floatation method ?

- A. Silicon gel
- B. Charcoal
- C. Turpentine
- D. Alumina

Answer: C



View Text Solution

27. catalyst is used in decomposition of ozone.

A. NO_2

B. CO_2

C. Ne

D. Cl_2

Answer: D



View Text Solution

28. Which catalyst is used for manufacturing of CH_3OH from H_2 and CO ?

A. Mixture of Cu , ZnO and Cr_2O_3

B. Only Cu

C. Only ZnO

D. Only Cr_2O_3

Answer: A

 [View Text Solution](#)

29. Catalyst used in preparation of CH_3COOH is.....

A. Ni / Pt

B. H_2 / Ni

C. $[Rh(CO)_2I_2]^-$

D. $Mo(iv)$

Answer: C

 [View Text Solution](#)

30. Which substance is used for isomerism in petroleum industries ?

- A. Activated charcoal
- B. Zeolite
- C. Silica gel
- D. Sodium aluminium silicate

Answer: B



[View Text Solution](#)

31. Enzymes are made up of

- A. Carbohydrate
- B. Lipid

C. Protein

D. Sucrose

Answer: C



[View Text Solution](#)

32. Work of zymase is to form.....

A. fructose from soluble sugar.

B. soluble sugar and dextron from starch.

C. sugar from starch.

D. alcohol and carbon dioxide from glucose.

Answer: D



[View Text Solution](#)

33. Decomposition of M_2O_2 becomes faster in presence of

A. Pt

B. Pd

C. C

D. Ni

Answer: A



[View Text Solution](#)

34. What is the volume of particles of colloidal solution?

A. 1 nm - 100 nm

B. 1 nm - 1000 nm

C. gt 100 nm

D. It 1 nm

Answer: B



[View Text Solution](#)

35. Colloid is which type of system?

- A. Only heterogeneous
- B. Homogeneous and heterogeneous
- C. Only homogeneous
- D. None of the above

Answer: A



[View Text Solution](#)

36. Colloidal system is free from which of the following effect?

- A. Effect of heat
- B. Effect of applied electric field
- C. Effect of added electrolyte
- D. Effect of gravitational

Answer: D



[View Text Solution](#)

37. How much type of colloidal systems can be formed on the basis of physical state of dispersion medium and dispersion phase

?

- A. Two
- B. Three

C. Nine

D. Eight

Answer: D



[View Text Solution](#)

38. Which of the following is reversible sol ?

A. Fog

B. Gelatin

C. Cellulose

D. Whitening of egg

Answer: B



[View Text Solution](#)

39. What is the nature of R in $RCOO^-$ ion ?

- A. Hydrophilic
- B. Hydrophobic
- C. Both
- D. None

Answer: B



[View Text Solution](#)

40. Which reaction is occurred to form $Fe(OH)_3$ colloid from concentrated solution of $FeCl_3$?

- A. Oxidation
- B. Reduction

C. Double decomposition

D. Hydrolysis

Answer: D



[View Text Solution](#)

41. What should be done to increase filtration reaction in ultrafiltration process ?

A. To increase temperature

B. To decrease temperature

C. To decrease pressure

D. To increase pressure

Answer: D



[View Text Solution](#)

42. Colloid form by addition of excess amount of KI in $AgNO_3$ solution is of type.

- A. Positive charged
- B. Negative charged
- C. Neutral
- D. Can't say

Answer: B

 [View Text Solution](#)

43. Which substance can act as emulsifier ?

- A. $C_{12}H_{22}O_{11}$

B. Water

C. Oil

D. Soap

Answer: D



[View Text Solution](#)

44. Pharmaceutical products are highly effective in which of the following form ?

A. Emulsion

B. Gel

C. Sol

D. All of above

Answer: A

 [View Text Solution](#)

Section E Assertion And Reason Type Questions

1. Assertion (A) : Air becomes dry in presence of silica gel.

Reason (R) : Water molecules are absorbed on the surface of gel.

- A. Assertion (A) and Reason (R) both are true. (R) is the proper explanation of (A).
- B. Assertion (A) and Reason (R) both are true but (R) does not explains (A).
- C. Assertion (A) and Reason (R) both are false.
- D. Assertion (A) is not true but Reason (R) is true.

Answer: A

 [View Text Solution](#)

2. Assertion (A): Aquous solution of raw sugar, when passed over beds of animal charcoal, becomes colourless.

Reason (R) : Colouring substances does not absorbed by the charcoal.

- A. Assertion (A) and Reason (R) both are true. (R) is the proper explanation of (A).
- B. Assertion (A) and Reason (R) both are true but (R) does not explains (A).
- C. Assertion (A) and Reason (R) both are false.
- D. Assertion (A) is true and Reason (R) is false.

Answer: D



View Text Solution

3. Assertion (A) : Surface of an adsorbent shows the preference for a particular gas.

Reason (R) : van der Waals' forces are not universal.

- A. Assertion (A) and Reason (R) both are true. (R) is the proper explanation of (A).
- B. Assertion (A) and Reason (R) both are true but (R) does not explains (A).
- C. Assertion (A) and Reason (R) both are false.
- D. Assertion (A) is not true but Reason (R) is true.

Answer: C



[View Text Solution](#)

4. Assertion (A): Number of particles in colloidal dispersions are less in compare to homogeneous solutions.

Reason (R) : Colloidal particles are huge aggregates.

A. Assertion (A) and Reason (R) both are true. (R) is the proper explanation of (A).

B. Assertion (A) and Reason (R) both are true but (R) does not explains (A).

C. Assertion (A) and Reason (R) both are false.

D. Assertion (A) is not true but Reason (R) is true.

Answer: A



[View Text Solution](#)

5. Assertion (A) : Electrical charge of the particle decreases by boiling the sol.

Reason(R) : Collision of molecules of dispersions medium increased by boiling the sol.

- A. Assertion (A) and Reason (R) both are true. (R) is the proper explanation of (A).
- B. Assertion (A) and Reason (R) both are true but (R) does not explains (A).
- C. Assertion (A) and Reason (R) both are false.
- D. Assertion (A) is not true but Reason (R) is true.

Answer: A



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Section E Mcqs Asked In Competitive Exam

1. Fog is an example of what?

- A. Dispersion of liquid in gas
- B. Dispersion of gas in gas
- C. Dispersion of solid in gas
- D. Dispersion of solid in liquid

Answer: A



[View Text Solution](#)

2. is a hydrophilic sol.

- A. Starch solution

B. Silver iodide

C. Magnesium sulphate

D. Arsenic sulfide

Answer: A



[View Text Solution](#)

3. Fog is a type of colloidal sol.

A. solid-gas

B. gas-liquid

C. liquid-gas

D. gas-gas

Answer: C



[View Text Solution](#)

4. The work of zymase is.. .

- A. fructose from soluble sugar.
- B. sugar and dexfran from starch.
- C. sugar from starch.
- D. alcohol and CO_2 from glucose.

Answer: D



[View Text Solution](#)

5. In a chemical reaction catalyst

- A. increase proportion of products.
- B. increase activation of products.

C. decrease activation energy.

D. increase value of ΔH in forward reaction.

Answer: C

 [View Text Solution](#)

6. Which is a best substance for coagulation of gold sol?

A. KNO_3

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

C. $MgCl_2$

D. K_3PO_4

Answer: C

 [View Text Solution](#)

7. Which phenomenon takes place in chromatography ?

- A. Absorption
- B. Adsorption
- C. Desorption
- D. None of these

Answer: B



[View Text Solution](#)

8. The work of enzymes in living system is....

- A. as a catalyst in biochemical reactions.
- B. to provide oxygen.
- C. give energy to the reaction.

D. give protection.

Answer: A

 [View Text Solution](#)

9. In chemical adsorption how many layers are there on adsorbent?

A. Infinite

B. TWO

C. Zero

D. One

Answer: D

 [View Text Solution](#)

10. is a lyophilic sol.

- A. gum
- B. sulphur sol
- C. milk
- D. Blood

Answer: A



[View Text Solution](#)

11. In which of the following Tyndal effect is observed ?

- A. solvent
- B. solution
- C. precipitate

D. colloidal sol

Answer: D



[View Text Solution](#)

12. Bio chemical catalyst is known as.....

A. enzymes

B. associated colloid

C. nucleic acid

D. cellobiose

Answer: A



[View Text Solution](#)

13. What are biological catalyst in reality?

- A. Enzyme
- B. Carbohydrate
- C. Amino acid
- D. Base containing nitrogen

Answer: A



[View Text Solution](#)

14. What is the range of adsorption enthalpy in $kJmol^{-1}$ for physical adsorption ?

- A. 40-400
- B. 40-100
- C. 10-40

D. 1-10

Answer: C



[View Text Solution](#)

15. Which attraction forces are between adsorbent and adsorbate in physical adsorption ?

- A. Ionic
- B. Covalent
- C. van der Waals
- D. H-bond

Answer: C



[View Text Solution](#)

16. In cloud and fog the dispersion medium and dispersed phase is

- A. gas - liquid
- B. liquid - liquid
- C. liquid - gas
- D. gas - solid

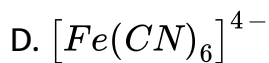
Answer: C



[View Text Solution](#)

17. Which of the following ion is most effective for coagulation of positively charged colloid ?





Answer: D



[View Text Solution](#)

18. Which of the following is illustration of homogeneous catalysis

?

A. Production of ammonia by Haber process.

B. Catalytic conversion of SO_2 to SO_3 in contact process.

C. Hydrolysis of methyl acetate in presence of acid.

D. Hydrogenation of oil in presence of nickel catalyst.

Answer: C

 [View Text Solution](#)

19. Conversion of precipitates into colloidal sol is known by which process ?

A. Coagulation

B. Dispersion

C. Peptisation

D. Dissolution

Answer: C

 [View Text Solution](#)

20. The colloidal gold is obtained by

- A. peptisation
- B. bredig's arc method
- C. mechanical dispersion
- D. none of these

Answer: B



[View Text Solution](#)

21. Which adsorption takes place by strong chemical bond ?

- A. physisorption
- B. chemisorption
- C. reversible adsorption

D. none of these

Answer: B



[View Text Solution](#)

22. Which option is true?

A. Aerosol - Smoke

B. Glass - Gel

C. Emulsion - Colour

D. Foam - Fog

Answer: A



[View Text Solution](#)

23. Which is not used in preparation of lyophilic sol?

- A. White of an egg
- B. Rubber
- C. Metal sulphide
- D. Gelatin

Answer: C



[View Text Solution](#)

24. The surface tension of lyophilic sol is .. .

- A. more than H_2O
- B. less than H_2O
- C. equal to H_2O
- D. more or less than H_2O

Answer: B

 [View Text Solution](#)

25. Precipitates are converted into colloids by addition of electrolyte is called .. .

- A. hydrolysis
- B. Peptisation
- C. mechanical dispersion
- D. condensation

Answer: B

 [View Text Solution](#)

26. The primary test to check the sol is colloid or not is...

A. by the motion of particles.

B. by ultrafiltration.

C. tyndal effect

D. by the vol. of particles.

Answer: C



[View Text Solution](#)

27. Which bond is present in physical adsorption ?

A. Ionic

B. van der Waals

C. H-bond

D. Dative bond

Answer: B



[View Text Solution](#)

28. Purification of blood is carried out by...

A. coagulation

B. dialysis

C. electroosmosis

D. ultrafiltration

Answer: B



[View Text Solution](#)

29. The motion of particles in Brownian movement

- A. linear
- B. irregular curve
- C. continuous zig-zag
- D. circular

Answer: C



[View Text Solution](#)

30. The work of catalyst depends on

- A. weight
- B. concentration
- C. volume of particles
- D. Solubility

Answer: C



View Text Solution

31. Which is incorrect statement with respect to physical adsorption ?

- A. It is reversible process.
- B. Value of adsorption enthalpy is low.
- C. There is unimolecular layer on the surface of adsorbent.
- D. It occurs at low temperature.

Answer: C



View Text Solution

32. In which condition the rate of physisorption increases?

- A. By decreasing pressure.
- B. By increasing temperature.
- C. By decreasing temperature.
- D. By decreasing vol. of system.

Answer: C



[View Text Solution](#)

33. Why adsorption of gas on solid is exothermic ?

- A. Entropy decreases
- B. Entropy increases
- C. Free energy increases

D. Enthalpy is positive

Answer: A



[View Text Solution](#)

34. For coagulation of As_2S_3 colloid, the coagulation value is minimum for

A. $AlCl_3$

B. KI

C. $BeCl_2$

D. $NaNO_3$

Answer: A



[View Text Solution](#)

35. Which factor is not effective in a reversible chemical reaction
?]

- A. Temperature
- B. Pressure
- C. Catalyst
- D. Concentration

Answer: C



[View Text Solution](#)

36. Which colloidal sol is not prepared by bredig's arc method ?

- A. Gold
- B. Silver

C. Iron

D. Platinum

Answer: C



[View Text Solution](#)

37. The biochemical reaction by using urease enzyme is ..

A. hydrolysis of urea.

B. digestion of lipid. (C)

C. digestion of starch.

D. hydrolysis of maltose.

Answer: A



[View Text Solution](#)

1. Molecules on the surface at critical micelle concentration.....

- A. get decomposed.
- B. become soluble.
- C. get associated.
- D. get dissociated.

Answer: C



[View Text Solution](#)

2. What will happen when alum is added in water ?

- A. It forms aqua compounds and it removed.

- B. Sulphur separates sand particles in form of precipitates.
- C. Alum converts insoluble impurities into soluble one
- D. It coagulate unnecessary particles

Answer: D



[View Text Solution](#)

3. Which statement is wrong with reference to physical adsorption ?

- A. Gases having liquid state adsorbed easily.
- B. Multimolecular layer is formed on the surface of adsorbent at high pressure.
- C. The value of adsorption enthalpy is less and positive.
- D. Van der Waals' attraction is present.

Answer: C



View Text Solution

4. The coagulating power of electrolytes having ions Na^+ , Al^{3+} and Ba^{2+} for arsenic sulphide sol increases in the order :



Answer: B



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5. Match the catalysts to the correct processes :



- A. (A-iii), (B-ii), (C-iv),(D-i)
- B. (A-ii),(B-i), (C-iv),(D-iii)
- C. (A-ii),(B-iii),(C-iv),(D-i)
- D. (A-iii), (B-i),(C-ii),(D-iv)

Answer: B



[View Text Solution](#)

6. Which property of colloidal solution is independent of charge on the colloidal particles?

- A. Coagulation
- B. Electrophoresis

C. Electro - osmosis

D. Tyndall effect

Answer: D

 [View Text Solution](#)

7. For a linear plot of $\log (x/m)$ versus $\log p$ in a Freundlich adsorption isotherm, which of the following statements is correct/ (k and n are constants)

A. $\log (1/n)$ appears as the intercept

B. Both k and $1/n$ appear in the slope term

C. $1/n$ appears as the slope

D. Only $1/n$ appears as the slope

Answer: D



[View Text Solution](#)

8. Fog is colloidal solution of :

A. Gas in liquid

B. Solid in gas

C. Gas in gas

D. Liquid in gas

Answer: D



[View Text Solution](#)

9. The coagulation values in milimoles 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 gt II gt I

B. III gt I gt II

C. I gt II gt III

D. II gt I gt III

Answer: A



[View Text Solution](#)

10. Which one of the following characteristic is associated with adsorption ?

A. ΔG , ΔH and ΔS all are negative.

B. ΔG and ΔH are negative but ΔS is positive

C. ΔG and ΔS are negative but ΔH is positive.

D. ΔG is negative but ΔH and ΔS are positive.

Answer: A

 [View Text Solution](#)

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

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 used.

(c) The refractive 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



View Text Solution

12. Which of the following statements is incorrect?

A. In coagulation of a negative sol, flocculating power is in the

order of $Al^{3+} > Ba^{2+} > Na^{+}$

B. In the flocculation of a positive sol, flocculating power is in

the order, $Cl^{-} > SO_4^{2-} > PO_4^{3-} > [Fe(CN)_6]^{4-}$

C. Lyophilic colloids have greater affinity for solvents

D. Lyophilic sols are more stable than lyophobic sols

Answer: B



[View Text Solution](#)

13. On which of the following properties does the coagulating power of an ion depend ?

- A. The sign of charge on the ion alone.
- B. The magnitude of the charge on the ion alone.
- C. Both magnitude and sign of the charge on the ion.
- D. Size of the ion alone.

Answer: C



[View Text Solution](#)

14. Which mixture of the solutions will lead to the formation of negatively charged colloidal $[AgI]I^-$ sol?

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

B. 50 mL of 1 M $AgNO_3$ + 50 mL of 1.5 M KI

C. 50 mL of 1 M $AgNO_3$ + 50 mL of 2 M KI

D. 50 mL of 2 M $AgNO_3$ + 50 mL of 1.5 M KI

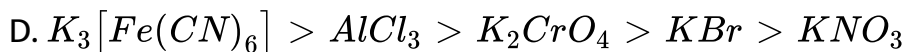
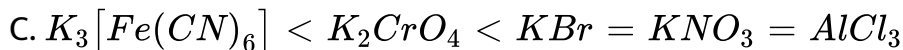
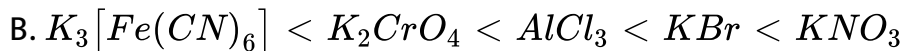
Answer: B::C



[View Text Solution](#)

15. As per Hardy-Schulze formulation, the flocculation values of the following for ferric hydroxide sol are in the order :

A. $AlCl_3 > K_2[Fe(CN)_6] > K_2CrO_4 > KBr = KNO_3$



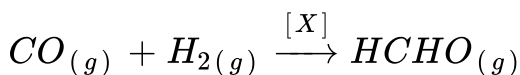
Answer: C



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Section E Mcqs Asked In Gujcet Board Exams

1. Name the catalyst [X] for the reaction,



A. Ni

B. Cu

C. $C \frac{u}{Z} nO$

D. Cu / Cr_2O_3

Answer: B

 [View Text Solution](#)

2. Which of the following statement is incorrect for physical adsorption ?

- A. Monomolecular layer forms on the adsorbent.
- B. It is instantaneous.
- C. Less activation energy is required for it.
- D. Generally it results at low temperature and adsorption decreases with increase in temperature.

Answer: A

 [View Text Solution](#)

3. Which type of colloid is the dissolution of sulphur (S_8) ?

- A. Associated colloid
- B. Micelle
- C. Multimolecular colloid
- D. Macromolecular colloid

Answer: C



[View Text Solution](#)

4. For adsorption phenomenon,

- 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: C



[View Text Solution](#)

5. The method for converting precipitates into colloidal particles by stirring them in a dispersion medium in presence of electrolyte is called

A. flocculation

B. coagulation

C. peptization

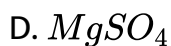
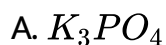
D. emulsification

Answer: C



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6. Which one is the best coagulating substance for $Fe(OH)_3$ colloid ?



Answer: A



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7. in which emulsion coloured droplets are obtained when oil soluble dye is added to it?

A. Cold cream

B. Milk

C. Hair cream

D. Cod liver oil

Answer: B



View Text Solution

8. Which statement is incorrect for catalyst ?

A. It does not affect the equilibrium constant.

B. It increases the proportion of products in less time.

C. It decreases the activation energy of a reaction.

D. It increases the free energy change for the reaction.

Answer: D

 [View Text Solution](#)

9. During electrophoresis of colloidal sol of $Fe(OH)_3$, the colloidal particles

A. move towards anode and cathode both.

B. move towards cathode.

C. move towards anode.

D. do not move.

Answer: B

 [View Text Solution](#)

10. In which of the following reactions ZSM-5 is useful ?

- A. Toluene from benzene
- B. Benzene from toluene
- C. Petrol from alcohol
- D. Toluene from heptane

Answer: B



[View Text Solution](#)

11. The value of $\frac{x}{m}$ does not increase rapidly with the increase in value of p in Freundlich adsorption isotherm because.....

- A. $n < 1$
- B. $n = 0$

C. $n - 1 = 0$

D. $n > 1$

Answer: D

 [View Text Solution](#)

12. Which substance prepare colloidal sol in water?

A. Salt

B. Glucose

C. Starch

D. $Ba(NO_3)_2$

Answer: C

 [View Text Solution](#)

13. $SO_{2(g)} + 2H_2S_{(g)} \rightarrow 3S_{(s)} + 2H_2O_{(l)}$ which will be the method to obtain sulphur sol by reaction shown above?

- A. Double decomposition
- B. Oxidation
- C. Reduction
- D. Hydrolysis

Answer: B



[View Text Solution](#)

14. Name the enzyme due to which protein is converted into amino acid.

- A. Zymase

B. Pepsin

C. Urease

D. Cellulase

Answer: B



[View Text Solution](#)

15. Based on which two opposite phenomena Langmuir derived adsorption isotherm equation ?

A. Adsorption and desorption of gas.

B. Rate of condensation and rate of evaporation become equal.

C. Kinetic theory and collision theory of gases.

D. Opposing collision of gaseous molecules.

Answer: A

 [View Text Solution](#)

16. Which of the following is not suitable for chemisorption ?

- A. It is irreversible.
- B. It is multimolecular.
- C. Depends upon nature of gas.
- D. There is no noticeable effect of change in temperature.

Answer: B

 [View Text Solution](#)

17. Which of the following catalyst is used for preparation of polyethylene from ethylene by heterogeneous catalysis in modern industrial process ?

A. Silver

B. Bismuth

C. $[Rh(CO)_2I_2]^-$

D. Organo Chromium and Titanium

Answer: D



[View Text Solution](#)

18. If dispersed phase is gas and dispersion medium is liquid then the type of colloid is...

A. Emulsion

B. Foam

C. Aerosol

D. Sol

Answer: B



View Text Solution

19. Which of the following apparatus is used to decide positive or negative electric charge of colloid ?

A. Ultracentrifuge

B. Electrophoresis

C. Ultrafilter paper

D. Mechanical dispersor

Answer: B



View Text Solution

20. At very low pressure, what is the equation of Langmuir Adsorption Isotherm ?

A. $\frac{x}{m} = Kp^{\frac{1}{n}}$

B. $\frac{x}{m} = \frac{ap}{1 + bp}$

C. $\frac{x}{m} = ap$

D. $\frac{x}{m} = \frac{a}{b}$

Answer: C



View Text Solution

21. In butter, which of the following are dispersed phase and dispersion medium respectively ?

- A. Solid and solid
- B. Liquid and solid
- C. Solid and liquid
- D. Liquid and liquid

Answer: B



[View Text Solution](#)

22. Which of the following statement is appropriate for physical adsorption ?

- A. More energy of activation is required.

B. Multimolecular layers can be formed on the adsorbent.

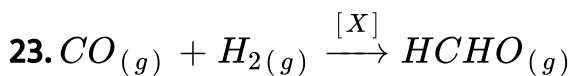
C. There is no special effect of change in temperature.

D. It is irreversible.

Answer: B



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In above reaction, what is [X] ? (A)

A. Ni / CrO_3

B. Cu

C. Ni

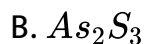
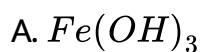
D. Cu / ZnO

Answer: B



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24. Which of the following Colloid possesses positive charge ?



Answer: A



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25. At the same temperature and pressure, which of the following gas will be adsorped in more proportion ?



Answer: D



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26. Which of the following will have less value than zero during adsorption ?



B. ΔH

C. ΔS

D. All the given three options.

Answer: D



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27. Which phenomenon will occur when water is added to anhydrous Calcium Chloride ?

A. Absorption

B. Adsorption

C. Desorption

D. Sorption

Answer: A

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28. Which option is not applicable to physical adsorption ?

- A. It is instantaneous.
- B. It is irreversible.
- C. Multi-molecular layers are formed in it.
- D. The value of E_a is comparatively low.

Answer: B

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29. Which statement is incorrect about catalyst ?

- A. It increases the rate of reaction.
- B. The effect of catalyst is selective.
- C. It decreases energy barrier.
- D. It decreases the value of equilibrium constant.

Answer: D



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30. Rubber is a colloid.

- A. Lyophobic
- B. Multi-molecular
- C. Associated
- D. Lyophilic

Answer: D

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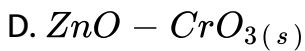
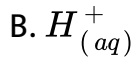
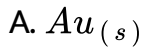
31. By which of the following methods, sulphur sol can be prepared ?

- A. Oxidation
- B. Dissolution
- C. Exchange of solvent
- D. All the given three options

Answer: D

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32. Inversion of sucrose is done in the presence of which catalyst ?



Answer: B



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33. Give the correct order of coagulation values of given electrolytes for the coagulation of 1 litre As_2S_3 sol.

(i) $FeCl_3$ (ii) Na_2SO_4 (iii) $BaCl_2$

A. (i) lt (iii) lt (ii)

B. (ii) lt (i) lt (iii)

C. (i) lt (ii) lt (iii)

D. (i) gt (iii) gt (ii)

Answer: A



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34. Which of the following emulsion will be favoured in the presence of Na-metal atom containing soap as an emulsifier ?

(P) butter (Q) vanishing cream

(R) milk (S) cold cream

A. R and S

B. Q and R

C. P and S

D. only R

Answer: B



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35. Select the correct statement regarding formation of micelle.

- A. Association formed during micelle formation, the polar head remains outside towards surface.
- B. In the association formed during micelle formation, the non-polar tail remains outside towards surface.
- C. Micelle is formed only at concentration lower than CMC.
- D. Micelle always contains less than 100 molecules.

Answer: B





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36. Which method is used to determine the molecular mass of polymer molecules like colloid?

- A. Depression in freezing point
- B. Osmotic pressure
- C. Decrease in vapour pressure
- D. Elevation in boiling point

Answer: B



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37. Asphalt used for construction of roads is

- A. an emulsion of asphalt in oil.

B. an emulsion of asphalt in water.

C. molten asphalt.

D. a solution of asphalt in water.

Answer: B



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38. Which of the following is not condensation method for preparation of colloid sol ?

A. Peptization

B. Solvent Exchange method

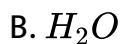
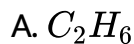
C. Excessive cooling

D. Double decomposition

Answer: A

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39. Which of the following gaseous molecule has maximum physical adsorption enthalpy?



Answer: B

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40. Which of the following is not an adsorbent ?

- A. Silica gel
- B. calcium chloride
- C. Precipitate of silver halide
- D. Clay

Answer: B



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41. $CO_{(g)} + H_{2(g)} \xrightarrow{[x]} HCHO_{(g)}$ the catalyst x in above reaction is

- A. Fe
- B. $Cu / ZnO - Cr_2O_3$

C. *Cu*

D. *Ni*

Answer: C

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42. Choose the correct order of catalytic activity of Cr, V, Fe and Mn metals in increasing order.

A. $Fe < Mn < V < Cr$

B. $Cr < V < Fe < Mn$

C. $V < Fe < Cr < Mn$

D. $V < Cr < Mn < Fe$

Answer: D

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43. Which of the following is an example of aerosol ?

- A. Pumic stone
- B. Foam rubber
- C. Froth
- D. Dust in air

Answer: D

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44. Which of the following is the emulsion of water in oil ?

- A. Vanishing cream
- B. Milk

C. Cold cream

D. Butter milk

Answer: C



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45. Enzymes are made up of ?

A. Protein

B. Lipid

C. Vitamin

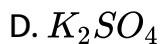
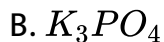
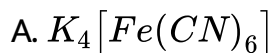
D. Carbohydrate

Answer: A



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46. Which is the least effective substance for the coagulation of $Fe(OH)_3$ colloid ?



Answer: A



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47. Which of the following will form a reversible sol?

A. Rubber sol

B. Gold sol

C. Sulphur sol

D. Arsenious sulphide sol

Answer: A



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48. Which equation of Langmuir adsorption isotherm will apply at high pressure ?

A. $\frac{x}{m} = a, p$

B. $\frac{x}{m} = \frac{b}{a}$

C. $\frac{x}{m} = \frac{1}{a \cdot p}$

D. $\frac{x}{m} = \frac{a}{b}$

Answer: D



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49. Which of the following gases can be absorbed in more proportion ?



Answer: C



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50. Which equation is true Langmuir adsorption isotherm at low pressure?

A. $\frac{x}{m} = \frac{1}{n} \times p$

B. $\frac{x}{m} = ap$

C. $\frac{x}{m} = \frac{b}{a}$

D. $\frac{x}{m} = \frac{a}{b}$

Answer: B



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51. From which enzymes are made ?

A. Vitamin

B. Lipid

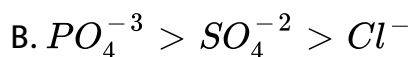
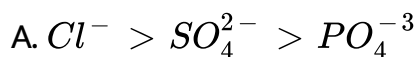
C. Carbohydrates

D. Protein

Answer: D

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52. Which is decreasing order of coagulating power for positive charged sol ?



Answer: B

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