



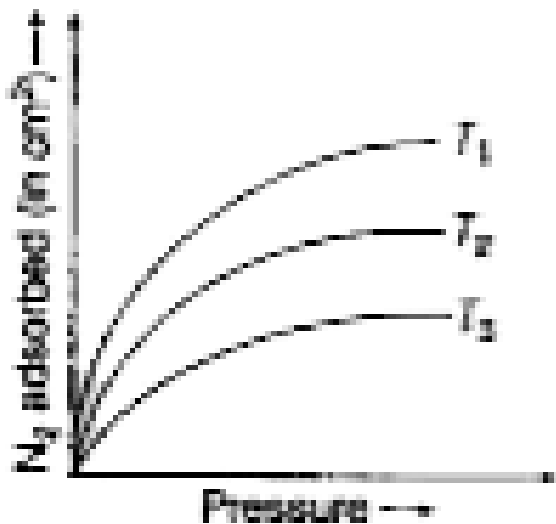
# CHEMISTRY

## BOOKS - ARIHANT PUBLICATION

### SURFACE CHEMISTRY

#### Sample Questions

1. The following figure shows the variation of adsorption of  $N_2$  on charcoal with pressure at different constant temperatures.



Arrange the temperatures  $T_1$ ,  $T_2$  and  $T_3$  in the increasing order.



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**Part I Questions For Practice Multiple Choice Type Questions**

1. Which of the following is not a characteristic of chemisorption?

A. It is irreversible

B. It is specific

C. It is multilayer phenomenon

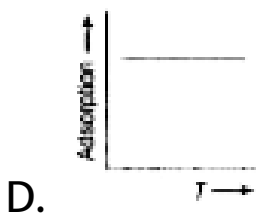
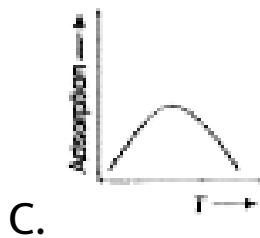
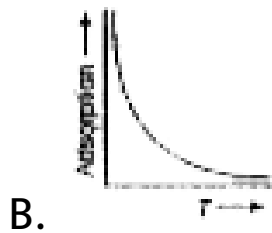
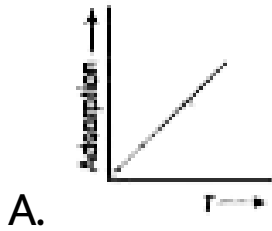
D. Heat of adsorption is of about - 400 kJ

**Answer: C**



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2. Which of the following is the variation of physical adsorption with temperature?



**Answer: B**



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**3. The rate of chemisorption**

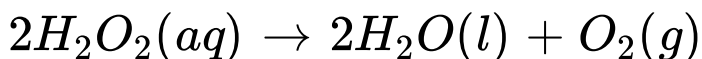
- A. decreases with increase of pressure
- B. increases with increase of pressure
- C. is independent of pressure
- D. is independent of temperature

**Answer: B**



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4. Following reaction is catalysed by  $Br^-$  (aq).



this is an example of

- A. homogeneous catalysis
- B. heterogeneous catalysis
- C. autocatalysis
- D. enzyme catalysis

**Answer: A**



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5. Catalyst increases the rate

- A. by decreasing  $E_a$
- B. by increasing  $E_a$
- C. by increasing entropy
- D. by both (a) and (c)

**Answer: A**



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## Part I Questions For Practice Very Short Answer Type Questions

1. Why is adsorption always exothermic?



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2. Why physisorption forms multi-molecular layers, whereas chemisorption forms unimolecular layers?



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3. .... has a higher enthalpy of adsorption



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



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

Gas	CO <sub>2</sub>	SO <sub>2</sub>	CH <sub>4</sub>	H <sub>2</sub>
Critical Temperature/K	304	630	190	33



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6. Give reason. Why a finely divided substance is more effective as an adsorbent?



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7. Why is chemisorption referred to as activated adsorption?



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



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**9.** Why does the white precipitate of silver halide becomes coloured in the presence of the dye eosin?



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**10.** In Haber's process, hydrogen is obtained by reacting methane with steam in the 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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**11.** Give reason that why is it necessary to remove CO when ammonia is prepared by Haber's process?



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12. Give a chemical reaction which involves homogeneous catalysis.



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13. ----- and ----- are two industrial processes in which heterogeneous catalysts are used.



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14. What is the role of desorption in the process of catalysis?



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## Part I Questions For Practice Short Answer Type I Questions

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



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2. Write any two characteristics of chemisorption.



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3. Write the differences between physisorption and chemisorption with respect to the following.

Specificity



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4. Write the differences between physisorption and chemisorption with respect to the following.

Temperature dependence



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5. Write the differences between physisorption and chemisorption with respect to the following.

Reversibility



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6. Write the differences between physisorption and chemisorption with respect to the following.

Enthalpy change



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



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8. One gram of charcoal adsorbs 100 mL of 0.5 M -acetic acid to form a monolayer and the molarity of acetic acid reduces to 0.49. Calculate the surface area of charcoal adsorbed by each molecule of acetic acid. The surface area of charcoal is  $3.01 \times 10^2 m^2 g^{-1}$ .



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9. Why are substances like platinum and palladium often used for carrying out

electrolysis of aqueous solutions?



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**10.** Explain how the phenomenon of adsorption finds application in the following processes?

Production of high vacuum



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**11.** Explain how the phenomenon of adsorption finds application in the following processes?

Heterogeneous catalysis



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**12.** Give four examples of heterogeneous catalysis.



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**13.** What is the role of diffusion in heterogeneous catalysis?



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



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



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**16.** What do you mean by activity and selectivity of the catalyst?



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## Part I Questions For Practice Short Answer Type II Questions

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



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2. Write three distinctive features of chemisorption which are not found in physisorption.





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3. What is difference between physisorption and chemisorption ?



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



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



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6. Twenty per cent of the surface sites of a catalyst is occupied by nitrogen molecules. The density of surface sites is  $6.023 \times 10^{14} \text{ gcm}^{-3}$ . The total surface area is  $1000 \text{ cm}^2$ . The catalyst is heated to 300 K and nitrogen is completely adsorbed into a pressure of 0.001 atm and volume of 2.46 cmo.

Calculate the number of sites occupied by nitrogen molecules.



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



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**8.** What is an adsorption isotherm? Describe Freundlich adsorption isotherm.



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**9.** What is shape-selective catalysis?



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**10.** Describe some features of catalysis by zeolites.



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11. What are enzymes? Write in brief the characteristics of enzyme catalysis.



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## Part I Questions For Assessment Multiple Choice Type Questions

1. Ink is adsorbed on the chalk. In this ink and chalk are respectively

A. adsorbate and adsorbent

B. adsorbent and adsorbate

C. Both adsorbent

D. Both adsorbate

**Answer: A**



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2. Which of the following catalyst catalyses the conversion of glucose into ethanol?

A. Zymase

B. Invertase

C. Maltase

D. Diastase

**Answer: A**



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**3.** The zeolites have shapes selectivity depending on

- A. pore structure
- B. atomic structure
- C. molecular structure
- D. None of these

**Answer: A**



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**Part I Questions For Assessment Very Short  
Answer Type Questions**



1. How is adsorption of a gas related to its critical temperature?



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2. The type of forces responsible for the occurrence of physisorption is



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3. What are catalytic poisons?



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## Part I Questions For Assessment Short Answer Type I Questions

1. Determine the value of  $n$  in Freundlich adsorption isotherm in the following cases:

At high pressure



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2. Determine the value of  $n$  in Freundlich adsorption isotherm in the following cases:

At high pressure



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3. Write the expression of Freundlich adsorption isotherm for adsorption from solution. Using graphical method, explain how does the extent of adsorption varies with

respect to pressure, temperature and concentration?



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4. How does the phenomenon of adsorption plays its role in control of humidity?



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5. How does the phenomenon of adsorption play its role in curing diseases?



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6. Why enzyme catalysts are highly specific in their action? Give reason.



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# Part I Questions For Assessment Short Answer

## Type II Questions

1. Plot of  $\log x/m$  against  $p$  is a straight line inclined at an angle of  $45^\circ$ . When the pressure is 0.5 atm and Freundlich parameter,  $k$  is 10. What will be the amount of solute adsorbed per gram of adsorbent?



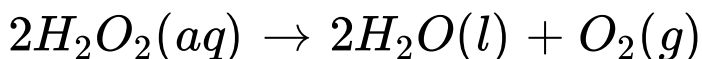
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2. Explain graphically, how does Freundlich 'adsorption isotherm varies with pressure for physisorption and chemisorption. Also, explain for the same when it varies with temperature.



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3. In the presence of  $I^-$  (aq), decomposition of  $H_2O_2(aq)$  is shown in the following reaction:



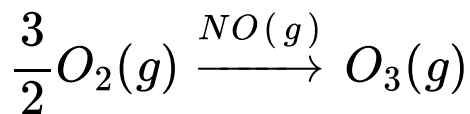
it follows rate law as,  $\text{rate} = k_2[\text{H}_2\text{O}_2][\text{I}^-]$

what is the role of catalyst ?



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4. In the atmosphere, NO is a gas phase homogeneous catalyst for the conversion of molecular  $\text{O}_2$  to  $\text{O}_3$



what is the role of NO ?



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5. In the presence of palladium, hydrogen adds to acetylene to form ethane, but in the presence of  $BaSO_4$  and quinoline or sulphur, the product is ethene. Why?



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## Part I Questions For Assessment Long Answer Type Questions

1. Explain the modern adsorption theory of heterogeneous catalysis.



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**2. Explain the mechanism of the following:**

Adsorption



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**3. Explain the mechanism of the following:**

Enzyme catalysis



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## Part II Questions For Practice Multiple Choice Type Questions

1. The diameter of colloidal particle is of the order

A.  $10^{-3}m$

B.  $10^{-6}m$

C.  $10^{-15}m$

D.  $10^{-7}m$

**Answer: B**





2. Which type of solutions is not filtrable through filter paper and parchment membrane both?

- A. True solutions and colloidal sol
- B. Colloidal sol and suspension
- C. True solution and suspension
- D. Suspension only Sol

**Answer: D**



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3. Smoke is a dispersion of

A. gas in gas

B. gas in solid

C. solid in gas

D. liquid in gas

**Answer: C**



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4. Which of the following(s) is/are w/o type emulsion?

A. Cold cream

B. Butter

C. Both (a) and (b)

D. None of these

**Answer: C**



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## Part II Questions For Practice Very Short Type Questions

1. The diameter of colloidal particles vary between....



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



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3. Why is the value of colligative properties of colloidal solution very small?



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4. Why is  $Fe(OH)_3$  colloid positively charged, when prepared by adding  $FeCl_3$  to hot water?



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5. What is Helmholtz electrical double layer?





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**6. Explain electrophoresis.**



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**7. What happens when dialysis is prolonged?**



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8. Out of  $BaCl_2$  and  $KCl$ , — — — — — — — — is more effective in causing coagulation of a negatively charged colloidal



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9. Why do we add alum to purify water?



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**10.** What happens when gelatin is mixed with gold sol?



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**11.** Why does bleeding stop by rubbing moist alum?



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**12.** A delta is formed at the meeting point of sea water and river water. Why?



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



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14. How does the precipitation of colloidal smoke take place in Cottrell precipitator?



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## Part II Questions For Practice Short Type I Questions

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



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2. Write the dispersed phase and dispersion medium of the following colloidal systems.

Smoke



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3. Write the dispersed phase and dispersion medium of the following colloidal systems.

Milk



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4. What are the characteristics of the following colloids? Give one example of each.

Multimolecular colloids



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5. What are the characteristics of the following colloids? Give one example of each.

Lyophobic sols



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6. What are micelles? Give an example of a micelle system.



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7. How are the following colloidal solutions prepared?

Sulphur in water



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**8.** How are the following colloidal solutions prepared?

Gold in water



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**9.** What modification can you suggest in the Hardy-Schulze rule?



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**10.** Give reasons for the following observations:

Leather gets hardened after tanning.



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**11.** Give reasons for the following observations:

Lyophilic sol is more stable than lyophobic



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



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**13.** What is especially observed when a beam of light is passed through a colloidal solution?



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**14.** Explain the following

Same substance can act both as colloids and crystalloids.



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**15.** Explain the following

Artificial rain is caused by spraying salt over clouds.



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**16.** What are emulsions? What are their different types? Give one example of each type.



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**17.** How do emulsifiers stabilise emulsion?  
Name two emulsifiers.



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**18.** Give four uses of emulsions.



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**19.** Gelatin which is a peptide, is added in ice-creams. What can be its role?



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**Part II Questions For Practice Short Type II Questions**

1. How are colloids classified on the basis of (i) physical state of components? (ii) nature of dispersed phase and (iii) interaction between dispersed phase and dispersion medium?



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2. How are the colloidal solutions classified on the basis of physical state of the dispersed phase and dispersion medium?



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



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4. In reference to Freundlich adsorption isotherm, write the expression for adsorption of gases on solids in the form of an equation.



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5. Write an important characteristic of lyophilic sols.



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6. Based on the type of particles of dispersed phase, and dispersion medium give one example each of associated colloid and multimolecular colloid.



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7. What is especially observed when a beam of light is passed through a colloidal solution?



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8. Explain what is observed, when an electrolyte,  $\text{NaCl}$ , is added to hydrated ferric oxide solution?



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9. Explain what is observed, electric current is passed through a colloidal solution?



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10. Among the following electrolytes:

$Na_2SO_4$ ,  $CaCl_2$ ,  $Al_2(SO_4)_3$ , ,  $NH_4Cl$

which is the most effective coagulating agent for  $Sb_2S_3$  solution?



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## Part II Questions For Practice Long Type Questions

1. Explain the following terms:

Electrophoresis



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2. Explain the following terms:

Coagulation



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**3. Explain the following terms:**

Dialysis



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**4. Explain the following terms:**

Tyndall effect



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**5. Explain the terms with suitable examples:**

Emulsion



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**6. Explain the terms with suitable examples:**

Aerosol



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7. Explain the terms with suitable examples:

Hydrosol



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8. How are the following colloids different from each other in respect of their dispersion medium and dispersed phase? Give one example .

Emulsion



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**9.** How are the following colloids different from each other in respect of their dispersion medium and dispersed phase? Give one example .

Aerosol



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**10.** How are the following colloids different from each other in respect of their dispersion medium and dispersed phase? Give one



example .

Hydrosol



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**11.** Define the following terms with an example  
in case:

Macromolecular sol



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**12.** Define the following terms with an example

in case:

Peptisation



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**13.** Define the following terms with an example

in case:

Emulsion



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**14.** 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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## Part II Questions For Assessment Multiple Choice Type Questions

**1.** Tyndall effect is not observed in

A. sugar solution

B. gold solution

C. suspension

D. emulsion

**Answer: A**



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2. Aluminium hydroxide forms a positively charged sol. Which of the following ionic

substances should be most effective in coagulating the sol?

A.  $NaCl$

B.  $CaCl_2$

C.  $Fe_2(SO_4)_3$

D.  $K_3PO_4$

**Answer: D**



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3. Flocculation value of a coagulating electrolyte is expressed in

A. milli mol  $L^{-1}$

B.  $molL^{-1}$

C.  $mgK^{-1}$

D. microgram  $mL^{-1}$

**Answer: A**



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## Part II Questions For Assessment Very Short Type Questions

1. What are the dispersed phase and dispersion medium in milk?



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2. An example of sol and gel are ----- and ---- respectively.



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3. Why is a colloidal sol stable?



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4. Define electrokinetic potential.



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**Part II Questions For Assessment Short Type I  
Questions**



1. Define the following term.

Reversible sols



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2. Define the following terms and differentiate between them.

Irreversible sols & Reversible sol



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3. Distinguish between micelles and colloidal particles. Give one example of each.



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4. What is Helmholtz electrical double layer?



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5. What are the methods of coagulation of lyophobic sols?



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## Part II Questions For Assessment Short Type II Questions

1. For the coagulation of 10 mL of  $Fe(OH)_3$  sol, 2 mL of 1 M KBr is required. What is the flocculating value of KBr?



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2. What type of colloidal sols are formed in the following?

Sulphur vapours passed through cooled water.



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3. What type of colloidal sols are formed in the following?

White of an egg is mixed with water.



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4. What type of colloidal sols are formed in the following?

Soap solution



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5. Explain

Electrolytes can cause coagulation as well as peptisation of colloidal solution.



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## 6. Explain

A sol of AgI can be positively or negatively charged. Explain, how and why?



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## 7. Explain

The curdling of milk when it sours.



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8. Compare the coagulation power of  $AlCl_3$  with that of NaCl. Given that their coagulating values are 0.093 and 52, respectively.



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## Part II Questions For Assessment Long Type Questions

1. Differentiate among homogeneous solution, heterogeneous colloid and suspension. Give a

suitable example of each. How is crystalloid different from a true solution?



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## Odisha Bureau S Textbook Solutions A Multiple Choice Type Questions

1. A mixture of colloid and crystalloid can be separated by

A. diffusion

B. cataphoresis



C. dialysis

D. filtration

**Answer: C**



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2. Tyndall effect in colloidal solution is due to

A. scattering of light

B. reflection of light

C. absorption of light

D. presence of electrically charged particles

**Answer: A**



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**3.** 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 (b) and (c)

**Answer: D**



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**4.** The Brownian motion is due to

A. temperature fluctuation within the

liquid phase

B. attraction and repulsion between the

charges on the colloidal particles

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

D. convection current

**Answer: C**



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5. Lyophilic sols are more stable than lyophobic sols because

A. the colloidal particles have positive charge

B. the colloidal particles have negative charge

C. the colloidal particles are solvated

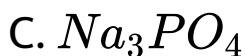
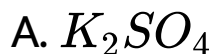
D. there are strong electrostatic repulsion between the negatively charged colloidal particles

**Answer: C**



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6. An Arsenous sulphide sol carries a negative charge. The maximum precipitating power for this sol is possessed by



**Answer: D**



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7. Which of the following substances gives a positively charged sol?

A. Gold

B. A metal sulphide

C. Ferric hydroxide

D. An acidic dye

**Answer: C**



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8. On adding a few drops of dil. HCl to freshly precipitated  $Fe(OH)_3$ , a red colour colloidal solution is obtained. The phenomenon is known as

A. peptisation

B. dialysis

C. protective action

D. dissolution

**Answer: A**





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9. Which of the following will have high coagulation power for  $As_2S_3$  colloid?



**Answer: C**



10. The sky looks blue due to

A. dispersion of light

B. reflection

C. transmission

D. scattering

**Answer: D**



11. Which of the following is not a colloid?

A. Chlorophyll

B. Smoke

C. Transmission

D. Milk

**Answer: A**



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12. Fog is an example of colloidal system of

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

**Answer: A**



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13. .... is an example of emulsion.

A. milk

B. jelly

C. boot polish

D. froth

**Answer: A**



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14. Gold number gives

A. the amount of gold present in the colloid

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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15. Which of the following can absorb largest volume of hydrogen gas ?

- A. Finely divided platinum
- B. Colloidal solution of palladium
- C. Finely divided nickel
- D. Colloidal ferric hydroxide

**Answer: A**



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16. Which of the following can act as a protective colloid?

A. Gelatin

B. Silica gel

C. Oil in water emulsion

D. All of these

**Answer: A**



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17. The blue tinge of smoke is due to

A. scattering

B. coagulation

C. brownian motion

D. electroosmosis

**Answer: A**



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18. Tyndall effect is not observed in

A. true solution

B. suspension

C. emulsion

D. colloidal solution

**Answer: A**



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19. The migration of positively charged colloidal particles under the influence of an electric field towards the cathode is called

A. electro-osmosis

B. electrophoresis

C. dialysis

D. coagulation

**Answer: B**



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20. When the dispersion medium is water, the colloidal system is called

A. sol

B. aerosol

C. organosol

D. aquasol

**Answer: D**



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21. Which of the following is a hydrophobic sol?

A. Starch solution

B. Gum solution

C. Protein solution

D. Arsenic sulphide sol

**Answer: D**



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22. A colloidal solution in which a solid is dispersed in a liquid is called

A. gel

B. emulsion

C. sol

D. precipitate

**Answer: C**



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23. Which of the following is a homogeneous system

A. Muddy water

B. Bread

C. Concrete

D. A solution of sugar in water

**Answer: D**



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

A. Adsorption

B. Tyndall effect

C. Flocculation

D. Paramagnetism

**Answer: D**



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25. Maximum coagulation power is in



**Answer: D**



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1. Distinguish between crystalloid and colloid.



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2. What is the binding force in physisorption?



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3. What is gold number?



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4. By what method a colloid can be separated from crystalloid.



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5. What is the name of the process of removing an adsorbed substance from the surface on which it is adsorbed?



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6. Liquid-liquid colloidal systems are termed as ... (sols, hydrosols, emulsions, suspensoids)



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7. Why animal charcoal is used for purification of sugar?



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**8.** A colloidal solution has two phases namely ..... phase and.....



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**9.** Why colloids cannot be filtered by ordinary filter paper?



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**10.** A colloidal solution is called a ...



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**11.** What is the size of a colloidal particle?



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**12.** Why does a colloidal solution coagulate on addition of an electrolyte?



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**13.** What is the cause of Tyndall effect?



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**14.** Why are the colloidal particles charged?



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**15.** Why colloidal solution is heterogeneous?



**Watch Video Solution**

**16.** What is desorption?



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**17.** Define molar heat of adsorption.



**Watch Video Solution**

**18.** Give an example of emulsion.



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# Odisha Bureau S Textbook Solutions C Short Answer Type Questions

1. What is gold number?



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2. Give a method of preparing colloidal solution of arsenous sulphide.

Give equation.



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3. What is Tyndall effect? What is it due to?



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4. What is adsorption? Distinguish between physical adsorption and chemisorption.



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5. Explain electrophoresis.



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6. What is colloidal solution?



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7. Why alum is used for clearing muddy water.



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



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**9. What is detergent? How it works?**



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**10. What is a colloidal solution? How does it differ from a true solution?**



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**11.** Give two examples of lyophilic sols and how are they formed?



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**12.** Why animal charcoal is used for purification of sugar?



**Watch Video Solution**

**13.** What is the difference between adsorption and absorption?



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**14.** A powerful beam of light is passed through two beakers, one containing a solution and the other a colloidal solution. How each of the solution acts towards the beam of light?



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**15.** Why some colloidal particles migrate to electrodes in an electric field?



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**16.** Why is the value of colligative properties of colloidal solution very small?



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**17.** Why is adsorption always exothermic?





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18. Explain why the gases like  $NH_3$ ,  $HCl$ ,  $CO_2$ , etc can be liquefied easily than the permanent gases like  $H_2$ ,  $N_2$ ,  $O_2$ , etc?



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19. Among  $[Fe(CN)_6]^{4-}$ ,  $PO_4^{3-}$ ,  $SO_4^{2-}$  which is more effective in coagulating  $Fe(OH)_3$  sol?



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20. Distinguish between adsorbent and adsorbate.



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21. Distinguish between lyophilic and lyophobic colloids.



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**22.** When rivers meet the ocean, they generally form delta, give reasons.



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**23.** Why colloids cannot be filtered by ordinary filter paper?



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**24.** Name any two/four applications of adsorption (four).



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**25.** When rivers meet the sea water they generally form delta, give reasons.



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26. Distinguish between homogeneous and heterogeneous catalysis.



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27. What is meant by selectivity of a catalyst?



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**Odisha Bureau S Textbook Solutions D Long  
Answer Type Questions**

1. Explain the following terms:

Tyndall effect



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2. Write notes on

Soap and detergent



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3. Write notes on

Gold number



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**4. Write notes on**

Brownian movement



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**5. Explain different types of adsorption. Write any four applications of colloids.**



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6. Give one method of preparation of colloidal solution. Give an account of electrical and optical properties of colloidal solution.



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7. Give a brief account of soap and detergent.



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8. Explain the terms adsorption and absorption with examples. Name the factors on which the extent of adsorption of a gas on solid depends.



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9. How are colloids classified? Discuss any two properties of colloidal solution.



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**10.** State and discuss Hardy-Schulze rule.



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**11.** Write notes on

Brownian movement



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**12.** Explain the following

Gold number





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**13.** Explain the following terms:

Dialysis



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**14.** What is adsorption? Distinguish between physical adsorption and chemisorption.



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**15.** Explain various applications of colloidal solution.



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**16.** Discuss the factors that affect the phenomenon of adsorption.



**Watch Video Solution**

**17.** What do you understand by the term "Electrophoresis"? How would you

demonstrate this phenomenon.



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**18.** What is a colloid? How does colloid differ from crystalloid? "Colloid is a state of matter, not a class of matter"-discuss the statement.



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**19.** Explain three of the following.

Peptisation



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**20. Explain the following terms:**

Dialysis



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**21. Explain the following.**

Emulsions



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**22.** Explain the following.

Lyophobic sols



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**23.** Give a note of the following

Origin of charge on colloidal particles.



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**24.** Give a note of the following

Zeta potential



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**25.** Write a note on cataphoresis.



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**26.** Discuss important features of solid catalysts with reference to activity and

selectivity.



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27. Explain the modern adsorption theory of heterogeneous catalysis.



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28. What is the effect of catalyst on activation energy?



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**29.** What is enzyme catalysis? Discuss its characteristics with suitable examples.



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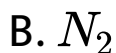
**30.** What is a catalyst? Discuss the characteristics of a catalyst with example.



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## Chapter Practice Multiple Choice Type Questions

1. Identify the gas which is readily adsorbed by activated charcoal.



**Answer: C**



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2. In physisorption, the molecules of adsorbate held to the adsorbent by

- A. chemical forces
- B. ionic forces
- C. van der Waals' forces
- D. None of these

**Answer: C**



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3. Physical adsorption is inversely proportional to

A. temperature

B. volume

C. concentration

D. All of these

**Answer: A**



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4. Select the correct statement(s).

A. Milk is a type of emulsion

B. Brownian motion is observed in emulsion

C. Cleansing action of soap is due to formation of emulsions (Micelle)

D. All of the above are correct statements

**Answer: D**



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## Chapter Practice Very Short Answer Type Questions

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



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2. What is meant by critical micelle concentration?



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3. How does  $BF_3$  act as a catalyst in industrial process?



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4. What is common in aqua and solid aerosols?



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Chapter Practice Short Answer Type I Questions

1. Explain what is observed when silver nitrate solution is added to potassium iodide solution?



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2. Explain what is observed when the size of the finest gold sol particle increases in the gold sol?



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3. Why is  $FeCl_3$  solution preferred over KCl solution in case of a cut leading to bleeding?



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4. Explain positive and negative adsorption with examples.



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5. in which of the following, adsorption takes place and why?

Silica gel placed in the atmosphere saturated with water.



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6. in which of the following, adsorption takes place and why?

Anhydrous  $CaCl_2$  placed in the atmosphere saturated with water.



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



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8. Which one of the following electrolytes is most effective for the coagulation of  $Fe(OH)_3$  sol and why?

$NaCl$ ,  $Na_2SO_4$ ,  $Na_3PO_4$





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## Chapter Practice Short Answer Type Ii Questions

1. How do size of particles of adsorbent, pressure of gas and prevailing temperature influence the extent of adsorption of a gas on a solid?



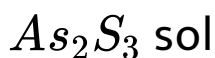
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2. What is the charge on the colloidal particles



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3. What is the charge on the colloidal particles



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4. What is the charge on the colloidal particles

Colloidal sol of silver



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5. Write three distinctive features of chemisorption which are not found in physisorption.



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6. How can a colloidal solution and true solution of the same colour be distinguished from each other?



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7. What do you mean by electrical property of colloidal particles, explain by using suitable examples?



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## Chapter Practice Long Answer Type Questions

1. Write any two methods for preparation of colloid .



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