

India's Number 1 Education App

CHEMISTRY

BOOKS - R G PUBLICATION

SURFACE CHEMISTRY



1. Which has a higher enthalpy of adsorption,

physisorption or chemisorption?

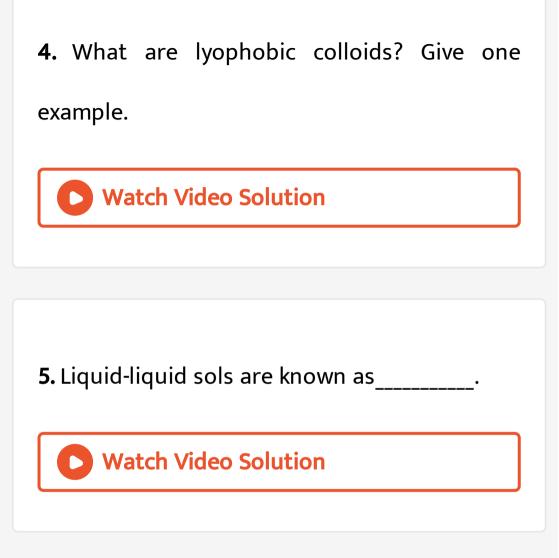
2. Define shape-selective catalysis. Give an

example of such catalyst.

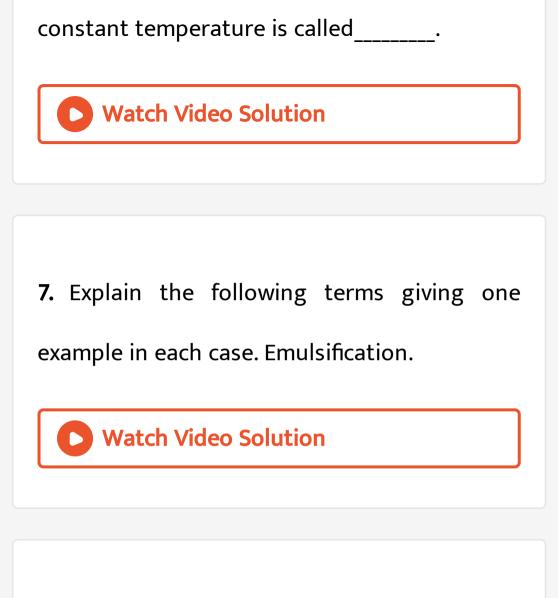
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3. What is observed when a beam of light is

passed through a colloidal solution?



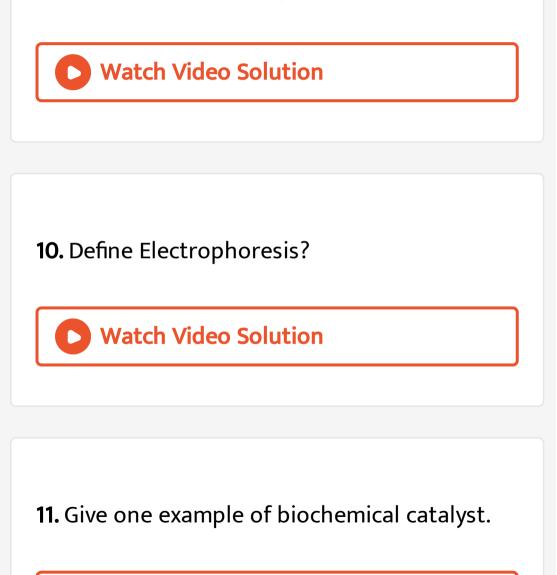
6. Fill in the blanks: The curve showing the variation of absorption with pressure at



8. Explain the following terms giving one example in each case. Coagulation.



9. Describe the following terms. Dialysis



12. Why does physisorption decrease with the

increase of temperature?



13. Give the decreasing order of flocculating power of the following ions in the coagulation

of a negative sol.

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

14. Explain what is observed when: An electrolyte is added to hydrated ferric oxide sol.



15. Explain what is observed when: Direct

electric current is passed through colloidal sol.

16. Mention any two factors which distinguish

physisorption from chemisorption.

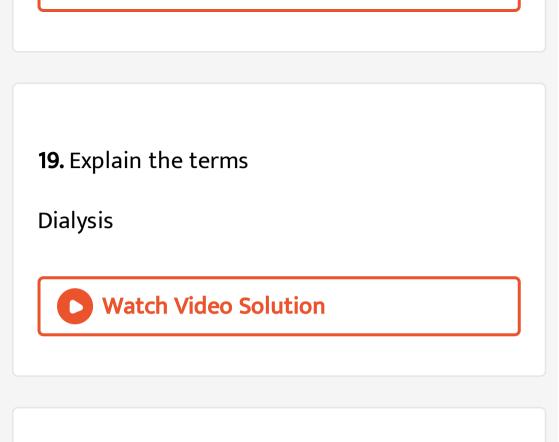
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17. Why does physisorption decrease with the

increase of temperature?

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18. Define Electrophoresis?



20. Explain the terms with suitable examples:

Aerosol

21. What are adsorption and absorption processes? Give one suitable example to show the distinction between the two.



22. Define homogeneous and heterogeneous catalysis. Give one suitable example each of

the two catalysis.



23. Explain the following observations: Sky

appears blue in colour.



24. Explain the following observations: Delta's

are formed where river meets the sea.

25. Explain the following observations

Alum/ferric chloride solution is applied to stop bleeding.



26. Explain the following observations

Mist or fog is formed in winter.



27. Mention two industrial applications of colloids.

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28. When adsorption takes place

A. δH is negative but ΔS is positive

B. ΔH is positive but ΔS is negative

C. ΔG becomes negative

D. ΔG becomes zero.

Answer:



29. During physisorption if temperature is increased then.

A. There will not further adsorption

B. Physisorption changes to chemisorption

C. There will be desorption

D. Amount of physisorption will increase

Answer:



30. When carbon monooxide reacts with hydrogen in presence of Ni catalyst producing

A. Methane and water

B. Formaldehyde

C. Methanol

D. Formic acid





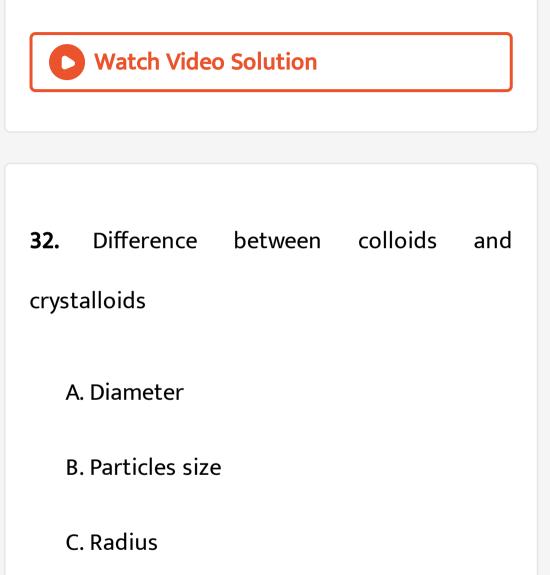
31. The maximum temperature at which enzyme works in human body is

A. $30^{\,\circ}\,C$

- B. $35^{\,\circ}\,C$
- C. $37^\circ C$

D. $40\,^\circ C$

Answer:



D. Solubility

Answer:



33. Milk is -

- A. Fat dispersed in milk
- B. Fat dispersed in water
- C. Water dispersed in fat
- D. Water dispersed is oil

Answer:



34. The extra stability of lyophilic colloids is due to-

A. Charge on their particles.

B. A layer of medium of dispersion on their

particles.

C. The smaller size of their particles

D.

Answer:



35. On adding few drops of dil HCl to freshly precipitated Ferric Hydroxide, a red coloured colloidal solution is obtained. This phenomenenon is known as-

A. Peptization

B. Dialysis

C. Protective action

D. None of the above

Answer:

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36. Tyndall effect in colloidal solution is due to-

- A. Scattering of light
- B. Reflection of light
- C. Absorption oflight

D. Presence of charge on the particles





37. The sky looks blue due to-

- A. Dispension effect
- **B.** Reflection
- C. Scattering
- D. Refraction





38. Which one of the following substancces

give a positively chaged sol?

A. Gold

B. A metal sulphide

C. Ferrice hydroxide

D. Fe_2O_3

Answer:





39. Which of the following has maximum value

of flocculating power?

A. Pb^{2+}

- $\mathsf{B.}\, Pb^{4\,+}$
- C. Sr^{2+}
- D. Na^+

Answer:



40. Which property of colloidal suspension is used to determine the nature of charge on the particles?

A. Dialysis

B. Electro phoresis

C. Ultra filtration

D. Electro osmosis

Answer:

41. The function of emulsifying agent is-

A. To decrease the inter facial tension

between two liquids of emulsion

B. To separate the liquids by forming a

boundary between them.

- C. Decrease the stability of the emulsion
- D. None of the above

Answer:



42. Fill in the blanks: The phenomenon in which absorption & adsorption takes place simultaneously is called_____.

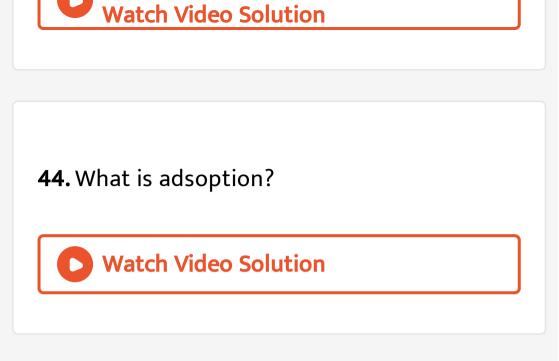


43. Fill in the blanks

When adsorption attains equilibrium position

then T ΔS became ____ ΔH .





45. What will happen when methylene blue is

adsorbed an charcoal?

46. Why adsorption accompanied by decrease

in entropy?

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47. Give reason why a finely divided substance

is more effective as an adsorbent.

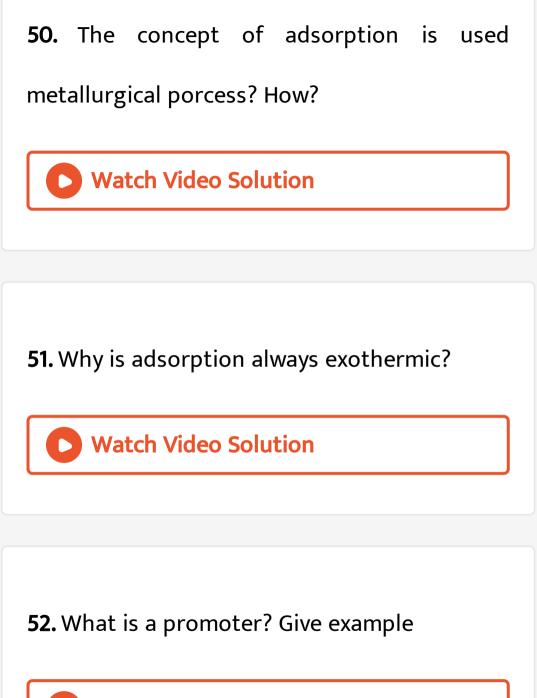
48. Between physisorption and chemisorption

which require more activation energys and why?



49. What is Freundlich adsorption isotherm?





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

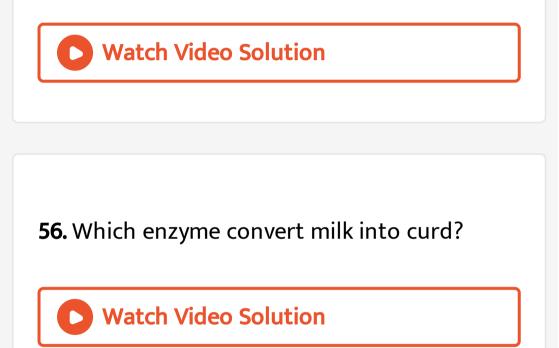


54. Write one use of ZSM-5



55. What are enzymes? Write in brief the

mechanism of enzyme Catalysis

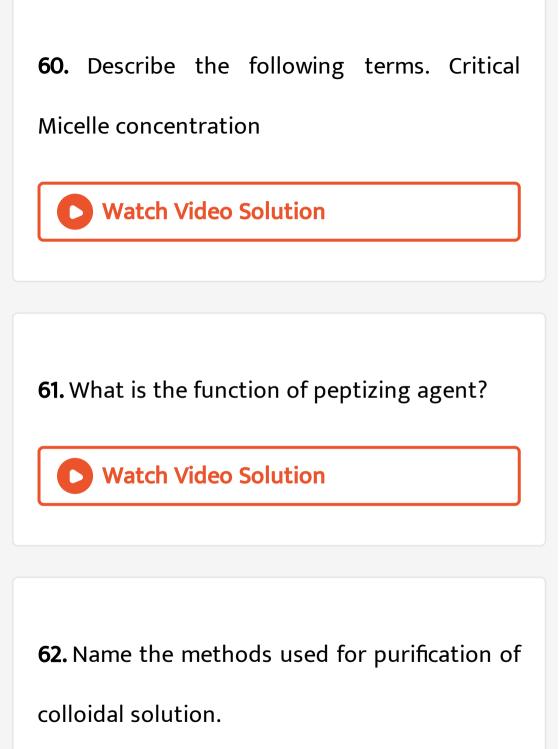


57. Define Co-enzyme. Give one example.

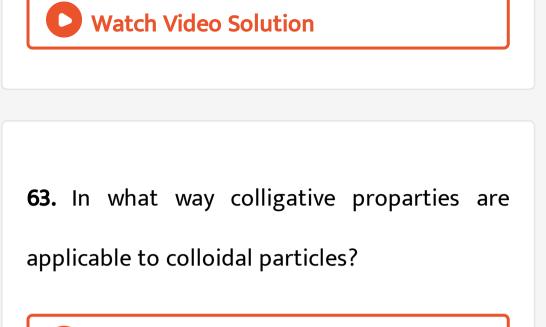
58. Why is the ester hydrolysis slow in the beginning and becomes faster after sometime?

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59. Why lyophilic colloids are reversible?



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64. To show Tyndal effect the value of refractive indices of the dispersed phase and the dispersion medium must be ___

65. What will happen when KI solution is added to $AgNO_3$ solution .

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66. A delta is formed at the meeting point of

sea water and river water why?

67. Write the conditions to observe the Tyndall

effect.



68. Why is it necessary to remove CO when

ammonia is obtained by Haber's process?

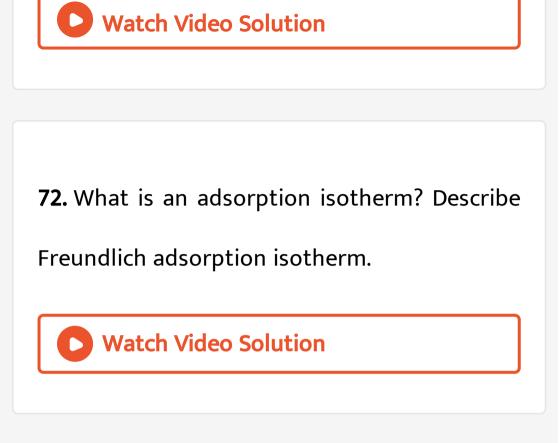


69. Distinguish between adsoption and absorption. Why does adsorption takes place?
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70. Explain the thermodynamic conditions for adsorption.



71. Write three characteristics of physorption.



73. Explain the following terms giving a suitable example in each case: Homogeneous catalysis.

74. Explain why a catalyst remain unchanged in mass and chemical composition at the end of the reaction?

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75. What is meant by shape-selective catalysis?

76. Write three important characteristics of

enzyme catalytic reaction.

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77. Describe lock and key theory of enzyme catalysis.



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

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79. Define colloids.What is the range of size of

colloidal particles?

80. Classify colloids in terms of the type of the particles of the dispersed phase. Give example of each type.



81. CMC for soap is 10^{-4} and $10^{-3} mol L^{-1}$.

What do you mean? What is Kraft

temperature?



describe the cleansing action of soap



83. Write with chemical reaction how gold sol

and ferric hydroxide sol prepared.

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84. Write short notes on peptization.





85. How colloids are purified by electro

dialysis?



86. Write short notes on

Tyndal effect

87. Write short notes on

Brownian motion



88. Write short notes on

Zeta potential.

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89. Write a note on Hardy Schulze rule.

90. Write short notes on

Emulsion



91. Comment on the statement that "colloid is

not a substance but a state of substance".

92. Why is it essential to wash the precipitate

with water before estimating it quantitatively?



93. How coagulation of lyophilic sol is carried

out?



94. Describe protactive power of lyophilic sol.



95. Write two application of colloid in the purification of drinking water and in photographic plates & film.

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96. What is observed when a beam of light is

passed through a colloidal solution?

97. Explain what is observed an electrolyte, NaCl is added to hydrated ferric oxide sol.

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98. Explain what is observed electric current is

passed through a colloidal sol?

99. How are the following colloidal solutions

prepared?

Sulphur in water



100. How are the following colloidal solutions

prepared?

Gold in water.

101. Write the dispersed phase and dispersion

medium of the following colloidal systems.

Smoke



102. Write the dispersed phase and dispersion

medium of the following colloidal systems.

Milk

103. Explain the following

Adsoption of a gas on surface solid is

generally accompanied by decrease in entropy,

still it is spontaneous process.

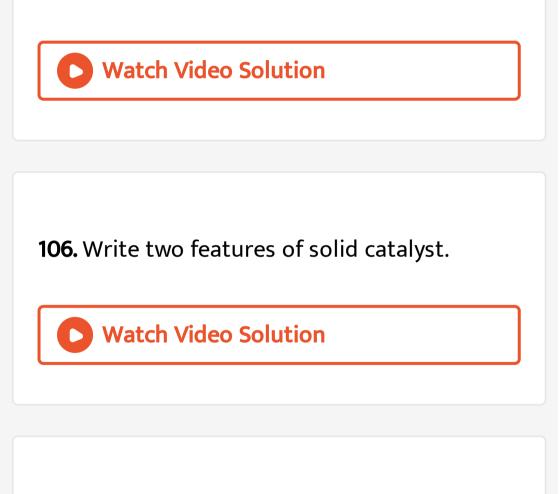


104. Explain the following: Same substance can

act both colloids and crystalloids.

105. Distinguish between micelles and colloidal

particles. Give one example of each.



107. What do you observe when adsorption

takes place from solution phase.



108. What do you mean by coagulation of colloidal solution? Describe briefly two methods by which coagulation of lyophobic sols can be carried out.