

# CHEMISTRY

## BOOKS - MBD -HARYANA BOARD

### SURFACE CHEMISTRY

#### Very Short Answer Type Questions

1. Why does physisorption decrease with increase of temperature ? Explain.



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2. What is the effect of temperature on the rate of physical adsorption ?



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3. Write Freundlich's adsorption isotherm.



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4. What is desorption ?



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5. Give one example each of water in oil and oil in water type emulsion.



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6. Give one test to distinguish whether the given emulsion is oil in water type or water in oil type.



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7. Define dialysis.



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8. Define peptization.



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9. Give one example of lyophilic sol.



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**10.** Arrange the solutions : true solution, colloidal solution and suspension in the decreasing order of their particle size.



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**11.** Give an example of heterogenous catalyst.



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**12.** Give one example each of positive and negative sol.



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**13.** How will you prepare colloidal solution of sulphur?



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**14.** Describe the role of soap as emulsifier.



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**15.** Which of the two: physical adsorption and chemisorption has higher heat of adsorption ?



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**16.** What is adsorption isobar ?



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**17.** Does the adsorption of a gas on the surface of a solid increase or decrease with rise in temperature ?



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



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19. Why are powdered substances more effective adsorbent than their crystalline forms ?



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## Short Answer Type Questions

1. Differentiate between adsorption and absorption



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2. Give any four points of differences between physical and chemical adsorption .

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



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



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6. Write three differences between true solution and colloidal solution



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7. Explain Electrophoresis.



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



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9. Explain the terms with suitable examples : (i) Alcosol (ii) Aerosol and (iii) Hydrosol.



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



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11. Differentiate between lyophilic and lyophobic colloids (Give 5 points)



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12. Differentiate between homogeneous and heterogeneous catalysis with one example of each.



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**13.** Describe briefly the following: (i) Dialysis (ii) Electrophoresis.



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**14.** Define zeolites with an example. Define peptisation.



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**15.** What is demulsification ?



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



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17. Explain the following terms : (i) Electrophoresis (ii) Coagulation (ii) Dialysis (iv) Tyndall effect.



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

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

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

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20. Name four factors which effect adsorption.



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21. What do you understand by electrophoresis ?



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22. Describe a method for the preparation of sol of platinum in water.



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**23.** What are micelles ? Give an example of micellar system.



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**24.** Explain what is observed when a colloidal solution of arsenious sulphide is treated as follows:

(i) A beam of light is passed through it (ii) An

electrolyte is added to it (ii) It is brought under the influence of electric field.

Give the name of the phenomenon in each case.



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**25.** What happens when KCl is added to ferric hydroxide sol ?



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**26.** Explain Tyndall effect.



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**27.** Explain briefly the method for preparing gold sol.



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**28.** Account for the fact that the charge of the colloidal particles is due to the selective

adsorption of the ions. Give one example.



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**29.** Explain the following: (i) Gold number (ii) Dialysis.



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**30.** Explain the following terms : (i) Electrophoresis (ii) Coagulation (iii) Dialysis (iv) Tyndall effect.



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



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**32.** 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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**33.** Give two applications of colloids.

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**34.** Explain the role of Hardy-Schulze rule in flocculating sols.

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



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



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**37.** What is heat of adsorption ? Give the effect of temperature on physical adsorption and chemical adsorption.

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

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

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

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41. What are emulsions ? Give three uses of emulsions in industry.



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## Long Answer Type Questions

1. What are emulsions ? Give an example of an emulsion.



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2. Describe briefly the cleansing action of soap.



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3. Define adsorption isotherm and explain Freundlich adsorption isotherm of gases on solids.



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4. What is coagulation ? Explain the various factors which influence coagulation.



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