



INDIAN SCHOOL AL WADI AL KABIR

Class: XII	Department: SCIENCE 2020 – 21 SUBJECT : CHEMISTRY	Date of submission: 16.04.2020
Worksheet No: 01	Topic: CHAPTER 5 – SURFACE CHEMISTRY	Note: A4 FILE FORMAT
NAME OF THE STUDENT	CLASS & SEC:	ROLL NO.

PREVIOUS YEARS' BOARD BASED QUESTIONS

[2008 – 2020]

1. What are lyophilic and lyophobic sols? Give one example of each type. Which one of these two types of sols is easily coagulated and why?
2. Explain what is observed when:
 - (i) an electrolyte, KCl, is added to a hydrated ferric oxide sol.
 - (ii) an electric current is passed through a colloidal solution.
 - (iii) a beam of strong light is passed through a colloidal solution.
3. Mention two ways by which lyophilic colloids can be coagulated.
4. Explain what is observed when an electrolyte NaCl, is added to hydrated ferric oxide sol.
5. Define the term 'Tyndall effect'.
6. How are the following colloids different from each other in respect of dispersion medium and dispersed phase? Give one example of each type.
 - (i) An aerosol
 - (ii) A hydrosol
 - (iii) An emulsion
7. What is the 'coagulation' process?
8. What is an emulsion?
9. Give an example of 'shape-selective catalyst'.

10. Define the following:
- (i) Peptization
 - (ii) Reversible sols
11. What is the difference between multimolecular and macromolecular colloids? Give one example of each type. How are associated colloids different from the above two types of colloids?
12. Define 'electrophoresis.
13. Explain how the phenomenon of adsorption finds application in each of the following processes:
- (i) Production of vacuum
 - (ii) Heterogeneous catalysis
 - (iii) Froth floatation process
14. Define each of the following terms:
- (i) Micelles
 - (ii) Peptization
 - (iii) Desorption
15. Classify colloids where the dispersion medium is water. State their characteristics and write an example of each of these classes.
16. What are lyophobic colloids? Give one example for them.
17. Write four distinguishing features operative between chemisorption and physisorption.
18. Name the two groups into which phenomenon of catalysis can be divided. Give an example of each group with the chemical equation involved.
19. What is meant by coagulation of a colloidal solution? Describe briefly any three methods by which coagulation of lyophobic sols can be carried out?
20. Write three distinct features of chemisorption which are not found in physisorption.
21. Why is the adsorption phenomenon always exothermic?
22. Write the dispersed phase and dispersion medium of the following colloidal systems:
- (i) Smoke (ii) Milk
23. What are lyophilic and lyophobic colloids? Which of these sols can be easily coagulated on the addition of small amounts of electrolytes?

24. Write the differences between physisorption and chemisorption with respect to the following:
- (i) Specificity
 - (ii) Temperature dependence
 - (iii) Reversibility and (iv) Enthalpy change
25. What is the difference between multimolecular and macromolecular colloids? Give one example of each.
26. Of physisorption or chemisorption, which has a higher enthalpy of adsorption?
27. What are the characteristics of the following colloid? Give two examples:
- Multimolecular colloids
28. Define the term giving an example of associated colloids.
29. (a) What happens when a freshly precipitated $\text{Fe}(\text{OH})_3$ is shaken with water containing a small quantity of FeCl_3 ?
- (b) Why is a finely divided substance more effective as an adsorbent?
30. On what principle is chromatography based?
31. Write the dispersed phase and dispersion medium of the following colloids:
- (i) Cheese
 - (ii) Fog
32. Give one example each of 'oil in water' and 'water in oil' emulsion.
33. (a) In reference to Freundlich adsorption isotherm write the expression for adsorption of gases on solids in the form of an equation.
- (b) Write an important characteristic of lyophilic sols.
- (c) Based on type of particles of dispersed phase, give one example each of associated colloid and multimolecular colloid.
34. Give one example each of sol and gel.
35. Give one example each of lyophobic sol and lyophilic sol.
36. Give one difference between dialysis and electro-dialysis
37. Write the difference between Electrophoresis and Electro-osmosis
38. What are soaps? Explain the formation of ionic micelles.
39. What is the effect of temperature on chemisorption?
40. What are emulsions? What are their different types? Give one example of each type
41. What are the dispersed phase and dispersion medium in milk?
42. What type of forces are responsible for the occurrence of physisorption?

43. (a) Write the expression for the Freundlich adsorption isotherm for the adsorption of gases on solids, in the form of an equation.
- (b) What are the dispersed phase and dispersion medium of butter?
- (c) A delta is formed at the meeting place of sea and river water. Why?
44. Explain the following statements.
- The sky appears blue.
 - Alum is used for blood clotting
 - Smoke precipitator is essential in factories.
45. Name the temperature above which the formation of micelles takes place.
46. What is CMC?
47. Based on the type of dispersed phase, what type of colloid is micelles?
48. Out of BaCl_2 and KCl , which one is more effective in causing coagulation of a negatively charged colloidal sol? Give reason.
49. Out of AlCl_3 and NaCl , which is more effective in causing coagulation of a negative sol and why?
50. What is the type of charge on AgI colloidal sol formed when AgNO_3 solution is added to KI solution?
51. Differentiate between the following:
- Solution and Colloid
 - Homogeneous catalysis and Heterogeneous catalysis
 - O/W emulsion and W/O emulsion
52. Write the dispersed phase and dispersion medium of paints.
53. Write the dispersed phase and dispersion medium of smoke.
54. Define the following terms: Sorption
55. Write a method by which lyophobic colloids can be coagulated.
56. Give reasons for the following observations:
- Physisorption decreases with increase in temperature
 - Addition of alum purifies the water.
 - Brownian movement provides stability to the colloidal solution.
57. Write the dispersed phase and dispersion medium of butter.
58. Physisorption is reversible while chemisorption is irreversible. Why?
59. Give reasons for the following observations:
- NH_3 gas adsorbs more readily than N_2 gas on the surface of charcoal.
 - Powdered substances are more effective absorbents.
60. Explain the steps involved in the mechanism of adsorption.
61. Hardening of leather in tanning industry is based on: [2020]
- Electrophoresis
 - Electro-osmosis
 - Mutual coagulation
 - Tyndall effect
62. Explain the cleansing action of soap. [2020]
63. Give three points of difference between physisorption and chemisorption. [2020]