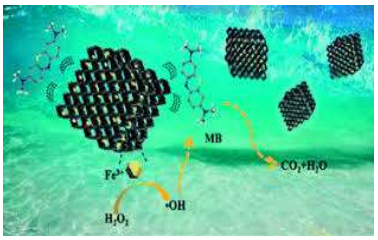


National Institute of Open Schooling
Senior Secondary Course : Chemistry
Lesson 15 : Adsorption and Catalysis
Worksheet-15

1. Kala-azar is a disease caused by mosquitos (protozoa) that result in irregular fever, enlargement of spleen and haemorrhages that are generally fatal.

(i) What is the treatment of Kala-azar?
(ii) Is colloidal antimony, lyophilic or lyophobic colloid?
(iii) Is colloidal antimony, multi molecular, macromolecular or associated colloid?
(iv) How can we protect ourselves from the fever caused by mosquitos?

2. Surface chemistry deals with phenomenon that occurs at all the surface or interfaces. Many important phenomenon- corrosion, electrode process, heterogeneous catalysis, dissociation, adsorption, crystallisation occur at the interfaces.

(i) Why do we use charcoal, in gas marks, in coal mines?
(ii) How is animal charcoal, used in the de-colourisation of sugar?
(iii) What is the use of silica gel which is given along with camera and other electronic equipments?
(iv) There is a safety lamp in coal mines. What is its purpose?

3. Hydrogenous of vegetables oil in presence of catalyst, is used to prepare vegetable ghee.

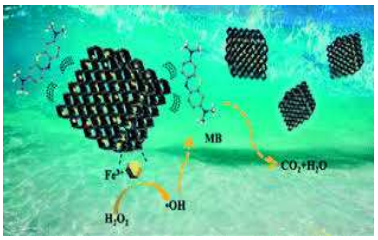
Vegetable oil $\longrightarrow$ Vegetable ghee

It is the most important industrial process.

(i) Which catalyst is commonly used in hydrogenation process and in which state?
(ii) Do you think we should use vegetable ghee instead of vegetable oils?
(iii) Is use of Nickel useful or harmful for our body?
(iv) Why should we avoid taking deep fried snacks?
(v) Why should excessive use of antacids be avoided?

4. Most of the substances we come across in our daily life are colloids. The meals we eat, cloths we wear, the wooden furniture we use, the house we live in, the newspaper we read, our largely composed of colloids. Dust particles in air, smoke, milk and blood are also example of colloidal solution.

(i) Why is sky blue in colour?
(ii) How can we stop bleeding?
(iii) How are deltas formed?
(iv) How should we decrease SPM (Suspended Particulate Matter) in atmosphere?



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5. Colloidal solutions are used as medicines. Colloidal medicines, are more effective because they have large surface areas and are therefore, easily assimilated.

(i) Name a colloidal solution used in eye lotion.
(ii) What is the use of colloidal gold?
(iii) What is milk of magnesia? Give its uses.

6. Describe the change observed:
(i)when a solution of NaCl is added to a sol. of hydrated ferric oxide.
(ii)when a beam of light is passed through a solution of NaCl and then through a sol.

7. Define the following:
(i) Dialysis
(ii) Zeta potential
(iii) Kraft temperature
(iv) Brownian movement

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

9. The resistance of a conductivity cell containing 0.001 M KCl solution is 1500 Ω at 298K. What is the cell constant, if the conductivity of 0.001 M KCl solution at 298K is 0.146 X 10^{-3} Scm^{-1}?

10. What happens when **(i)** a freshly prepared precipitate of Fe(OH)3 is shaken with a small amount of FeCl3 solution? **(ii)** persistent dialysis of a colloidal solution is carried out? **(iii)**size of dispersed phase changes in gold sol.