SURFACE CHEMISTRY

CONCEPTS OF ADSORPTION (Choose the correct option)

1. Which among the following is mainly a surface phenomenon? (Adsorption, Absorption
2. Which gas will be adsorbed more ? (CO_2, H_2)
3. High pressure is more favourable in case of ? (Physisorption, Chemisorption, Both)
4. In which case extent of adsorption is more? (Charcoal Block, Powdered charcoal)
5. Which type of adsorption decreases with increase of temperature ? (Physisorption, Chemisorption)
6. Adsorption is always (Endothermic, exothermic)

Ans:- 1)adsorption 2) CO_2 3). Both4)Powdered charcoal5)Physisorption 6) Exothermic

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Adsorption

Fill in the Blanks

1. log x/m=log k+1/n ---- (Ans:- log p)
2. Froth floatation makes use of-------- process (Ans:- Adsorption)
3. Enthalpy of adsorption is more in case of ---------- (Ans:- Chemisorption)
4. The dispersion medium in the case of smoke is ---------- (Ans:- Air)
5. ---------- Process is the reverse of Adsorption (Ans:- Desorption)

Ans:- 1)log p 2)adsorption 3) Chemisorption 4) air 5) desorption

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III Match the following:-

Column A	Column B
1). The process of settling of colloidal particles	(a)Tyndall effect
2). Scattering of light by colloidal particles	(b)Brownian movement
3). Movement of colloidal particles under an applied electrical field	(c) Coagulation
4). Potential difference between the fixed layer and the diffused layer of opposite charges around a colloidal particle	(d) Dialysis
5) Zig-zag motion of colloidal particles observed under ultramicroscope	(e)Electrophoresis
6. Process of converting a precipitate into colloidal sol by shaking it with a small amount of electrolyte	(f)Emulsions
7. Liquid-liquid colloidal systems	(g)Peptization
8. Process of removing a dissolved substance from a colloidal solution by means of diffusion through a suitable membrane	(h)Zeta potential

Answers:- 1-c, 2- a, 3-e, 4-h , 5-b , 6-g ,7-f, 8- d

IV) Name it.

1. Give an example of shape selective catalyst.
2. Substance which increases the activity of the enzymes is called
3. The concentration above which the micelle formation takes place
4. The temperature above which the micelle formation takes place
5. Name an example of macromolecular colloid.

Answers:-1) ZSM-5 2)Co enzyme 3) CMC 4) Kraft temperature 5) polystyrene

V .Give reasons:-

1.Why does the sky appear blue ?

2.Why $FeCl_3$ is better for coagulation of blood than KCl?

3.Why does the smoke get precipitated by Cottrell precipitator?

4.Why is an animal hide soaked in tannin before use in leather industry ?

5 How are deltas formed?

Answers:-1.Due to scattering of blue light by dust particles along with water

suspended in air

2.According to Hardy schulze rule ,Fe^{3+} has more flocculating power than K^{+}

3.The charge of colloidal smoke particles gets neutralized by oppositely charged plates in chimney.

4.Due to mutual coagulation of positively charged animal hide particles and negatively charged colloidal particles of tannin.

5.Colloidal clay particles carried by river water are coagulated by electrolytes In sea water.