Surface Chemistry

1. In Freundlich adsorption isotherm $x/m = Kp^{1/n}$, the value of 'n' at low pressure is
(a) more than one.
(b) less than one.
(c) equal to one.
(d) from zero to one.

▼ **Answer**

Answer: c

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2. According to adsorption theory of catalysis, the speed of the reaction increases because
(a) the concentration of the reactant molecules at the active centres of the catalyst becomes high due to adsorption.
(b) in the process of adsoption, the activation energy of the molecules becomes large.
(c) adsorption produces heat which increases the speed of the reaction.
(d) adsorption lowers the activation energy of the reaction.

▼ **Answer**

Answer: d

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3. Which shape selective catalyst is used to convert alcohol to gasoline?
(a) Trpsin
(b) Calgon
(c) ZSM-5
(d) Zeigler-Natta catalyst

▼ **Answer**

Answer: c

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4. Which of the following is an example of heterogenous catalyst?
(a) $2SO_2 + O_2 + 2H_2O \xrightarrow{NO} 2H_2SO_4$
(b) Sucrose + $H_2O \xrightarrow{H^+}$ Glucose + Fructose
(c) $2H_2O_2\,(aq) \xrightarrow{MnO_2} 2H_2O + O_2$
(d) $2H_2O_2\,(aq) \xrightarrow{FeCl_3} 2H_2O + O_2$

▼ **Answer**

Answer: c

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5. When a small amount of $FeCl_3$ is added to a freshly precipitated $Fe(OH)_3$, b reddish brown colloidal solution is obtained. This pheno¬menon is known as
(a) dialysis
(b) peptization
(c) protection
(d) dissolution

▼ **Answer**

Answer: c

6. Lyophillic colloids are stable due to
(a) charge on the particles.
(b) large size of the particles.
(c) small size of the particles.
(d) layer of dispersion of medium on the particles.

▼ **Answer**

Answer: d

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7. Cottrell precipitator is used to
(a) precipitate mud from muddy water.
(b) precipitate carbon particles from smoke.
(c) purify the ordinary drinking water.
(d) precipitate salts in qualitative analysis.

▼ **Answer**

Answer: b

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8. The potential difference between the fixed charged layer and the diffused layer having opposite charge is called
(a) Zeta potential
(b) Electrokinetic potential
(c) Both (a) and (b)
(d) Streaming potential

▼ **Answer**

Answer: a

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9. Peptization is a process of
(a) precipitation of colloidal particles.
(b) purification of colloids.
(c) dispersing precipitate into colloidal solution.
(d) movement of colloidal particles in the electric field.

▼ **Answer**

Answer: c

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10. An emulsifier is a substance which
(a) stabilises the emulsion.
(b) homogenises the emulsion.
(c) Coagulates the emulsion.
(d) Accelerates the disperson of liquid in liquid.

▼ **Answer**

Answer: a