

DPP

DAILY PRACTICE PROBLEMS

CLASS : XIth

DATE :

SUBJECT : CHEMISTRY

DPP No. : 3

Topic :- SURFACE CHEMISTRY

- Which statement is wrong?
 - The catalyst does not alter the equilibrium of a reaction
 - Reaction with higher activation energy has higher rate constant
 - In the endothermic reaction, the activation energy of the reaction is higher than that of heat of reaction
 - Half-life period of a first order reactions is independent of initial concentration
- During hydrogenation of oils, catalyst commonly used is :
 - Pd or CuCl₂
 - Finely divided Ni
 - Fe
 - V₂O₅
- Which of the following reactions is an example of heterogeneous catalysis?
 - $O_3 + O \xrightarrow{Cl} 2O_2$ (gas phase)
 - $2CO(g) + O_2(g) \xrightarrow{NO} 2CO_2(g)$
 - $$CH_3-\overset{\overset{O}{\parallel}}{C}-OC_2H_5 (l) + H_2O (l)$$

$$\xrightarrow{H_2SO_4} CH_3-\overset{\overset{O}{\parallel}}{C}-OH (l) + C_2H_5OH (l)$$
 - $CO(g) + 2H_2(g) \xrightarrow{Cu,ZnO-Cr_2O_3} CH_3OH(l)$
- Which is not a macromolecule?
 - Palmitate
 - Starch
 - DNA
 - Insulin
- Physical adsorption increases when
 - Temperature increases
 - Temperature decreases
 - Temperature remains constant
 - Temperature increases above 60°C
- Soap removes grease by :
 - Adsorption
 - Emulsification
 - Coagulation
 - None of these
- Which of the following is correct according to adsorption isotherm?
 - $\frac{x}{m} \propto p^0$
 - $\frac{x}{m} \propto p^1$
 - $\frac{x}{m} \propto p^{1/n}$
 - All of these
- Which of the following statements is incorrect regarding physisorptions?
 - It occurs because of van der Waals' forces

- b) More easily liquefiable gases are adsorbed readily
 c) Under high pressure it results into multimolecular layer on adsorbent surface
 d) Enthalpy of adsorption ($\Delta H_{\text{adsorption}}$) is slow and positive
9. In which process, a catalyst is not used?
 a) Deacon's process b) Solvay's process c) Chamber process d) Haber's process
10. Hydrolysis of urea is an example of
 a) Homogeneous catalysis b) Heterogeneous catalysis
 c) Biochemical catalysis d) Zeolite catalysis
11. Which of the following is a heterogeneous catalysis?
 a) $2\text{C}_2\text{H}_5\text{OH} \xrightarrow{\text{Conc H}_2\text{SO}_4} \text{C}_2\text{H}_5\text{OC}_2\text{H}_5 + \text{H}_2\text{O}$ b) $2\text{CO} + \text{O}_2 \xrightarrow{\text{NO}} \text{CO}_2$
 c) $\text{SO}_2 + \frac{1}{2}\text{O}_2 \xrightarrow{\text{NO}_2} \text{SO}_3$ d) $\text{SO}_2 + \frac{1}{2}\text{O}_2 \xrightarrow{\text{V}_2\text{O}_5} \text{SO}_3$
12. Milk is
 a) Fat dispersed in water b) Fat dispersed in milk
 c) Fat dispersed in fat d) Water dispersed in milk
13. Which of the following is the best protective colloid?
 a) Gelatin (Gold no.=0.005) b) Gum Arabic (Gold no. =0.15)
 c) Egg albumin (Gold no.=0.08) d) None of the above
14. Which of the following reactions lead to the formation of colloidal solution?
 a) $\text{Cu} + \text{HgCl}_2 \rightarrow \text{CuCl}_2 + \text{Hg}$ b) $2\text{HNO}_3 + 3\text{H}_2\text{S} \rightarrow 3\text{S} + \text{H}_2\text{O} + 2\text{NO}$
 c) $2\text{Mg} + \text{CO}_2 \rightarrow 2\text{MgO} + \text{C}$ d) $\text{Cu} + \text{CuCl}_2 \rightarrow 2\text{CuCl}$
15. The coagulation of sol particles or sol destruction may be brought in by :
 a) Cataphoresis
 b) Adding oppositely charged sol
 c) Adding electrolyte
 d) All of the above
16. Which is an example of a heterogeneous catalysis?
 a) Formation of SO_3 in the chamber process
 b) Formation of SO_3 in the contact process
 c) Hydrolysis of an ester in the presence of H^+ ions
 d) Combination of H_2 and Cl_2 in the presence of moisture
17. A negatively charged suspension of clay in water needs for precipitation the minimum amount of :
 a) Aluminium chloride b) Potassium sulphate c) Sodium hydroxide d) Hydrochloric acid
18. The Brownian motion is due to:
 a) Temperature fluctuations within the liquid phase
 b) Attraction and repulsion between charges on the colloidal particles
 c) Impact of the molecules of the dispersion medium on the colloidal particles
 d) Convective currents



19. What will be the Freundlich adsorption isotherm equation at high pressure?
- a) $\frac{x}{m} = k$ b) $\frac{x}{m} = kp^{1/n}$ c) $\frac{x}{m} = kp$ d) None of these
20. An example for autocatalysis is
- a) Oxidation of NO to NO₂ b) Oxidation of SO₂ to SO₃
c) Decomposition of KClO₃ to KCl and O₂ d) Oxidation of oxalic acid by acidified KMnO₄



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