

STD: XII

ONE MARK TEST - 9

CHEMISTRY

Marks: 30 / Time: 45 Min.

Choose the correct answer.

- Which among the following is an adsorbent?
a) N_2 b) SO_2 c) Ni d) NH_3
- Adsorption is always accompanied by
a) Increase in entropy b) Increase in free energy
c) Decrease in free energy d) No change in entropy
- The coagulation values in millimoles per litre of the electrolytes used for the coagulation of As_2S_3 are given below (I) $(NaCl)=52$ (II) $((BaCl_2)=0.69$ (III) $(MgSO_4)=0.22$ The correct order of their coagulating power is
a) $III > II > I$ b) $I > II > III$ c) $I > III > II$ d) $II > III > I$
- The critical temperature of the gas which is readily adsorbed is
a) lower b) higher c) zero d) none of the above
- For Freundlich isotherm a graph of $\log \frac{x}{m}$ is plotted against $\log p$. The slope of the line and its y - axis intercept respectively corresponds to
a) $1/n, k$ b) $\log 1/n, k$ c) $1/n, \log k$ d) $\log 1/n, \log k$
- Sugar prepared from molasses is decolourised by adding.
a) Silica gel b) Permutit c) Animal Charcoal d) Activated charcoal
- Intermediate compound formation theory explains.
a) Homogeneous catalysis b) Heterogeneous catalysis c) Autocatalysis d) Negative catalysis
- Which of the following is incorrect for physisorption?
a) reversible b) increases with increase in temperature
c) low heat of adsorption d) increases with increase in surface area
- The catalytic activity of a catalyst is increased by a promoter by
a) Increasing the number of active centres
b) Decreasing the number of active centres
c) Blocking the number of active centres
d) Desorbing the active centres
- Which one of the following characteristics are associated with adsorption?
a) ΔG and ΔH are negative but ΔS is positive b) ΔG and ΔS are negative but ΔH is positive
c) ΔG is negative but ΔH and ΔS are positive d) $\Delta G, \Delta H$ and ΔS all are negative
- Which of the following is incorrect
a) Enzymes can be inhibited (poisoned)
b) Catalytic activity of enzymes is decreased by coenzymes
c) Enzyme catalysis is highly specific in nature
d) the rate of Enzyme catalysed reactions varies with the pH of the system.
- In an electrical field, the particles of a colloidal system move towards cathode. The coagulation of the same sol is studied using K_2SO_4 (i), Na_3PO_4 (ii), $K_4[Fe(CN)_6]$ (iii) and $NaCl$ (iv) Their coagulating power should be
a) $II > I > IV > III$ b) $III > II > I > IV$ c) $I > II > III > IV$ d) none of these
- Fog is colloidal solution of
a) solid in gas b) gas in gas c) liquid in gas d) gas in liquid
- In hydrosols the dispersion medium is
a) Benzene b) Alcohol c) Water d) Ether
- Adsorption of a gas on solid metal surface is spontaneous and exothermic, then
a) ΔH increases b) ΔS increases c) ΔG increases d) ΔS decreases

16. Statement: To stop bleeding from an injury, ferric chloride can be applied. Which comment about the statement is justified?
- It is not true, ferric chloride is a poison
 - It is true, Fe^{3+} ions coagulate blood which is a negatively charged sol
 - It is not true; ferric chloride is ionic and gets into the blood stream
 - It is true, coagulation takes place because of formation of negatively charged sol with Cl^- .
17. Collodion is a 4% solution of which one of the following compounds in alcohol – ether mixture?
- Nitroglycerine
 - Cellulose acetate
 - Glycoldinitrate
 - Nitrocellulose
18. In butter the dispersed phase and the dispersion medium are respectively
- Solid, gas
 - Liquid, solid
 - Solid, liquid
 - Gas, solid
19. Assertion: Coagulation power of Al^{3+} is more than Na^+ .
Reason: greater the valency of the flocculating ion added, greater is its power to cause precipitation
- if both assertion and reason are true and reason is the correct explanation of assertion
 - if both assertion and reason are true but reason is not the correct explanation of assertion
 - assertion is true but reason is false
 - both assertion and reason are false
20. If x is the amount of adsorbate and m is the amount of adsorbent, which of the following relations is not related to adsorption process?
- $x/m = f(P)$ at constant T
 - $x/m = f(T)$ at constant P
 - $P = f(T)$ at constant x/m
 - $x/m = PT$
21. Arsenic sulphide sol is prepared $\text{As}_2\text{O}_3 + 3\text{H}_2\text{S} \rightarrow \text{As}_2\text{S}_3 + 3\text{H}_2\text{O}$. This method is known as
- Hydrolysis
 - Double decomposition
 - Oxidation
 - Reduction
22. Hair cream is
- gel
 - emulsion
 - solid sol
 - sol
23. The movement of dispersion medium under the influence of electric current is known as
- Electro osmosis
 - Electrophoresis
 - Electrodialysis
 - Ultra filtration
24. The most effective electrolyte for the coagulation of As_2S_3 Sol is
- NaCl
 - $\text{Ba}(\text{NO}_3)_2$
 - $\text{K}_3[\text{Fe}(\text{CN})_6]$
 - $\text{Al}_2(\text{SO}_4)_3$
25. Blue colour of the sky in nature is due to
- Brownian movement
 - Tyndall effect
 - Both (a) and (b)
 - None of the above
26. The phenomenon observed when a beam of light is passed through a colloidal solution is
- Cataphoresis
 - Electrophoresis
 - Coagulation
 - Tyndall effect
27. The force of attraction exist between adsorbent and adsorbate in physical adsorption is
- Vanderwaal's force
 - Dipole-dipole interaction
 - Dispersion forces
 - All the above
28. Which one of the is not a surfactant?
- $\text{CH}_3 - (\text{CH}_2)_{15} - \overset{+}{\text{N}} - (\text{CH}_3)_2 \text{CH}_2\text{Br}$
 - $\text{CH}_3 - (\text{CH}_2)_{15} - \text{NH}_2$
 - $\text{CH}_3 - (\text{CH}_2)_{16} - \text{CH}_2 \text{OSO}_2^- \text{Na}^+$
 - $\text{OHC} - (\text{CH}_2)_{14} - \text{CH}_2 - \text{COO}^- \text{Na}^+$
29. On which of the following properties does the coagulating power of an ion depend?
- Both magnitude and sign of the charge on the ion
 - Size of the ion alone
 - the magnitude of the charge on the ion alone
 - the sign of charge on the ion alone
30. Which one of the following is correctly matched?

a) Emulsion	-	Smoke
b) Gel	-	Butter
c) foam	-	Mist
d) whipped cream	-	sol

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| 1. c) Ni | 14. c) Water |
| 2. c) Decrease in free energy | 15. d) ΔS decrease |
| 3. a) $\text{III} > \text{II} > \text{I}$ | 16. b) It's true, Fe^{3+} ions coagulate blood which is a negatively charged sol. |
| 4. d) none of the above | 17. d) Nitrocellulose |
| 5. c) $\frac{1}{n}$, $\log K$ | 18. c) Solid, liquid |
| 6. c) Animal charcoal | 19. a) If both assertion and reason are true and reason is the correct explanation of assertion. |
| 7. a) Homogeneous catalysts | 20. d) $\alpha/m = PT$ |
| 8. b) increases with increase in temperature. | 21. b) double decomposition |
| 9. a) Increasing the number of active centres. | 22. b) emulsion |
| 10. d) ΔG , ΔH and ΔS all are negative | 23. a) Electrosmosis |
| 11. b) Catalytic activity of enzymes is decreased by coenzyme | 24. d) $\text{Al}_2(\text{SO}_4)_3$ |
| 12. b) $\text{III} > \text{II} > \text{I} > \text{IV}$ | 25. b) Tyndall effect. |
| 13. c) liquid in gas. | 26. d) Tyndall effect. |
| | 27. d) All the above. |
| | 28. b) $\text{CH}_3 - (\text{CH}_2)_{15} - \text{NH}_2$ |
| | 29. a) Both magnitude and sign of the charge is |
| | 30. b) Grease - Butter. |