NEET CHEMISTRY 2018-19 - Chennai

Periodic Test :16 **Test ID :** 028

Number of questions: 150 **Test date: 05.04.2019**

Name: _____ **Time**: 3HRS

ID No: _____

Negative Marks : 4 marks for correct attempt & 1 mark deducted for every wrong attempt.

1. which one of the following statements is not correct?
   (a) The value of equilibrium constant is changed in the presence of a catalyst in the reaction at equilibrium.
   (b) Enzymes catalyse mainly bio-chemical reactions.
   (c) Coenzymes increase the catalytic activity of enzyme.
   (d) Catalyst does not initiate any reaction.

2. 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) I > II > III
   (b) II > I > III
   (c) III > II > I
   (d) III > I > II

3. Fog is a colloidal solution of
   (a) Solid in gas
   (b) Gas in gas
   (c) Liquid in gas
   (d) Gas in liquid

4. Which one of the following characteristics is associated with adsorption>
   (a) ΔG and ΔG 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) ΔG, ΔH and ΔS all are negative

5. Which property of colloidal solution is independent of charge on the colloidal particles?
   (a) Electro-osmosis
   (b) Tyndall effect
   (c) Coagulation
   (d) Electrophoresis

6. Which property of colloids is not dependent on the charge on colloidal particles?
   (a) Coagulation
   (b) Electrophoresis
   (c) Electro-osmosis
   (d) Tyndall effect

7. In Freundlich adsorption isotherm, the value of 1/m is
   (a) Between 0 and 1 in all cases
   (b) Between 2 and 4 in all cases
   (c) 1 in case of physical absorption
   (d) 1 in case of chemisorptions

8. Which one of the following statements is incorrect about enzyme catalysis?
   (a) Enzymes are mostly proteinous in nature
   (b) Enzyme action is specific
   (c) Enzymes are denatured by ultraviolet rays and at high temperature.
   (d) Enzymes are least reactive at optimum temperature.

9. The protecting power of lyophilic colloidal sol is expressed in terms of
   (a) Coagulation value
   (b) Gold number
   (c) Critical micelle concentration
   (d) Oxidation number

10. If x is amount of adsorbate and m is amount of adsorbent, which of the following relations is not related to adsorption process?
    (a) x/m = ƒ(p) at constant T
    (b) x/m = ƒ(T) at constant p
    (c) p = ƒ(T) at constant (x/m)
    (d) x/m = p X T

11. The Langmuir adsorption isotherm is deduced using the assumption
    (a) The adsorption sites are equivalent in their ability to adsorb particles
    (b) The heat of adsorption varies with coverage.
    (c) The absorbed molecules interact with each other
    (d) The adsorption takes place in multilayers.

12. A plot of log(x/m) versus log p for the adsorption of a gas on a solid gives a straight line with slope equal to
    (a) log K
    (b) - log K
    (c) n
    (d) 1/n

13. Which one of the following forms micelles in aqueous solution above certain concentration?
    (a) Dodecyl trimethyl ammonium chloride
    (b) Glucose
    (c) Urea
    (d) Pyridiniwn chloride

14. The enzyme which hydrolyses triglycerides to fatty acids and glycerol is called
    (a) maltase
    (b) lipase
    (c) zymase
    (d) pepsin.

15. According to the adsorption theory of catalysis, the speed of the reaction increases because
    (a) the concentration of reactant molecules the active centres of the catalyst becomes high due to adsorption
    (b)) in the process of adsorption, 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

16. Position of non polar and polar part in micelle
    (a) polar at outer surface but non polar at inner surface
    (b) Polar inner surface non polar at outer surface
    (c) distributed over all the surface
    (d) are present in the surface only.

17. Which is not correct regarding the adsorption of a gas on surface of a solid?
    (a) On increasing temperature adsorption increases continuously.
    (b) Enthalpy and entropy change is negative.
    (c) Adsorption is more for some specific substance.
    (d) It is a reversible reaction.

18. Which one of the following method is commonly used method for destruction of colloid?
    (a) Dialysis
    (b) Condensation
    (c) Filteration by animal membrane
    (d) By adding electrolyte.

19. At the critical micelle concentration (CMC) the surfactant molecules
    (a) associate
    (b) dissociate
    (c) decompose
    (d) become completely soluble

20. The ability of anion, to bring about coagulation of a given colloid, depends upon
    (a) magnitude of the charge
    (b) both magnitude and charge
    (c) its charge only
    (d) sign of the charge alone.

21. A colloidal system has particle of which of the following size?
    (a) 10^{-9} m to 10^{-12} m
    (b) 10^{-6} m to 10^{-9} m
    (c) 10^{-4} m to 10^{-10} m
    (d) 10^{-5} m to 10^{-7} m

22. When a few typical solutes are separated by a particular selective membrane such as protein particles, blood corpuscles, this process is called
    (a) transpiration
    (b) endosmosis

(c) dialysis
(d) diffusion.

23. For the adsorption of a gas on a solid, the plot of log (x/m) versus log P is linear with slope equal to
(a) n
(b) 1/n
(c) k
(d) log k.

24. Extraction of gold and silver involves leaching with CN^- ion. Silver is later recovered by
(a) Distillation
(b) Zone refining
(c) Displacement with Zn
(d) Liquation

25. Match items of Column I with the items of Column II and assign the correct code :

Column I	Column II
(A) Cyanide process	(i) Ultrapure Ge
(B) Froth floatation process	(ii) Dressing of Zns
(C) Electrolyte reduction	(iii) Extraction of Al
(D) Zone refining	(iv) Extraction of Au
	(v) Purification of Ni

Code :

	A	B	C	D
(a)	(i)	(ii)	(iii)	(iv)
(b)	(iii)	(iv)	(v)	(i)
(c)	(iv)	(ii)	(iii)	(i)
(d)	(ii)	(iii)	(i)	(v)

26. In the extraction of copper from its sulphide ore, the metal is finally obtained by the reduction of cuprous oxide with
(a) Carbon monoxide
(b) Copper (I) sulphide
(c) Sulphur dioxide
(d) Iron (II) sulphide.

27. "Metals are usually not found as nitrates in their ores." Out of the following two (I and II) reasons which is/are true for the above observation?
I. Metal nitrates are highly unstable.
II. Metal nitrates are highly soluble in water.
(a) I is false but II is true.
(b) I is true but II is false
(c) I and II are true
(d) I and II are false

28. Roasting of sulphides gives the gas X as a byproduct. This is a colourless gas with choking smell of burnt sulphur and causes great damage to respiratory organs as a result of acid rain. Its aqueous solution is acidic, acts as a reducing agent and its acid has never been isolated. The gas X is
(a) CO_2
(b) SO_3
(c) H_2S
(d) SO_2

29. The metal oxide which cannot be reduced to metal by carbon is
(a) Al_2O_3
(b) PbO
(c) ZnO
(d) Fe_2O_3

30. Aluminum is extracted from alumina (Al_2O_3) by electrolysis of a molten mixture of
(a) $Al_2O_3 + HF + NaAlF_4$
(b) $Al_2O_3 + CaF_2 + NaAlF_4$
(c) $Al_2O_3 + Na_3AlF_6 + CaF_2$
(d) $Al_2O_3 + KF + Na_3AlF_6$

31. Which one of the following is a mineral of iron?
(a) Malachite
(b) Cassiterite
(c) Pyrolusite
(d) Magnetite

32. Which of the following elements is present as the impurity to the maximum extent in the pig iron?

(a) Manganese
(b) Carbon
(c) Silicon
(d) Phosphorus

33. Which of the following pairs of metals is purified by van Arkel method?
(a) Ga and In
(b) Zr and Ti
(c) Ag and Au
(d) Ni and Fe

34. The following reactions take place in the blast furnace in the preparation of impure iron. Identify the reaction pertaining to the formation of the slag.
(a) $Fe_2O_{3(s)} + 3CO_{(g)} \rightarrow 2Fe_{(l)} + 3CO_{2(g)}$
(b) $CaCO_{3(s)} \rightarrow CaO_{(s)} + CO_{2(g)}$
(c) $CaO_{(s)} + SiO_{2(s)} \rightarrow CaSiO_{3(s)}$
(d) $2C_{(s)} + O_{2(g)} \rightarrow 2CO_{(g)}$

35. Sulphide ores of metals are usually concentrated by froth floatation process. Which one of the following sulphide ores offer an exception and is concentrated by chemical leaching?
(a) Galena
(b) Copper pyrite
(c) Sphalerite
(d) Argentite

36. Which of the following statements, about the advantage of roasting of sulphide ore before reduction is not true?
(a) The ΔG_f° of the sulphide is greater than those for CS_2 and H_2S.
(b) The ΔG_f° is negative for roasting of sulphide ore to oxide.
(c) Roasting of the sulphide to the oxide is thermodynamically feasible.
(d) Carbon and hydrogen are suitable reducing agents for metal sulphides.

37. The method of zone refining of metals is based on the principle of
(a) Greater mobility of the pure metal than that of the impurity.
(b) Higher melting point of the impurity than that of the pure metal.
(c) Greater noble character of the solid metal than that of the impurity.
(d) Greater solubility of the impurity in the molten state than in the solid.

38. Cassiterite is an ore of
(a) Sb
(b) Ni
(c) Mn
(d) Sn

39. Purification of aluminium, by electrolytic refining, is known as
(a) Hoope's process
(b) Bayer's process
(c) Hall's process
(d) Serpeck's process

40. Calcium is obtained by
(a) Reduction of calcium chloride with carbon
(b) Electrolysis of molten anhydrous calcium chloride
(c) Roasting of limestone
(d) Electrolytes of solution of calcium chloride in H_2O.

41. The angular shape of ozone molecule (O_3) consists of
(a) 1σ and 1π bond
(b) 2σ and 1π bond
(c) 1σ and 2π bonds
(d) 2σ and 2π bonds

42. Which one of the following orders correctly represents the increasing acid strengths of the given acids?
(a) $HOClO < HOCl < HOClO_3 > HOClO_2$
(b) $HOClO_2 < HOClO_3 < HOClO < HOCl$
(c) $HOClO_3 < HOClO_2 < HOClO < HOCl$
(d) $HOCl < HOClO < HOClO_2 < HOClo_3$

43. The electronegativity difference between N and F greater than that between N and H yet the dipole moment of NH_3 (1.5 D) is larger than that of NF_3 (0.2 D). this is because
(a) In NH_3 the atomic dipole and bond dipole are in the opposite directions whereas in NF_3 these are in the same direction.
(b) In NH_3 as well as in NF_3 the atomic dipole and bond dipole are in the same direction

(c) In NH_3 the atomic dipole and bond dipole are in the same direction whereas in NF_3 these are in opposite directions
(d) In NH_3 as well as in NF_3 the atomic dipole and bond dipole are in opposite directions.

44. Which one of the following orders is not in accordance with the property stated against it?
(a) $F_2 > Cl_2 > Br_2 > I_2$: Bond dissociation energy
(b) $F_2 > Cl_2 > Br_2 > I_2$: Oxidising power
(c) $HI > HBr > HCl > HF$: Acidic property in water
(d) $F_2 > Cl_2 > Br_2 > I_2$: Electronegativity.

45. In which of the following molecules are all the bonds are not equal?
(a) NF_3
(b) ClF_3
(c) BF_3
(d) AlF_3

46. What is the correct relationship between the pH of isomolar solutions of sodium oxide, Na_2O (pH_1), sodium sulphide, Na_2S (pH_2), sodium selenide, Na_2Se (pH_3) and sodium telluride Na_2Te(pH_4) ?
(a) $pH_1 > pH_2 > pH_3 > pH_4$
(b) $pH_1 > pH_2 = pH_3 > pH_4$
(c) $pH_1 < pH_2 < pH_3 < pH_4$
(d) $pH_1 < pH_2 = pH_3 < pH_4$

47. which of the following oxides is expected to exhibite paramagnetic behaviour?
(a) CO_2
(b) SiO_2
(c) SO_2
(d) ClO_2

48. Which of the following would have permanent dipole moment?
(a) SiF_4
(b) SF_4
(c) XeF_4
(d) BF_3

49. Among K, Ca, Fe and Zn, the element which can form more than one binary compound with chlorine is
(a) Fe
(b) Zn
(c) K
(d) Ca

50. Which of the following statement is true?
(a) Silicon exhibits 4 coordination number in its compound.
(b) Bond energy of F_2 is less than Cl_2.
(c) Mn(III) oxidation state is more stable than Mn(II) in aqueous state.
(d) Elements of 15^{th} gp shows only +3 and +5 oxidation states.