

STD-XII**ONE MARK EXAMINATION-2023-24****CHEMISTRY****Total Marks :100**

- Which of the following is incorrect for Physisorption?
 - Reversibles
 - Increases with increases in temperature
 - Low heat of adsorption
 - Increases with increases in surface area
- Among the following cells I) Leclanche cell II) Nickel - Cadmium cell III) Lead storage battery IV) Mercury cell Primary cells
 - I and IV
 - I and III
 - III and IV
 - II and III
- Which of the following electrolytic solution has the least specific conductance
 - 2 N
 - 0.002 N
 - 0.02 N
 - 0.2 N
- During electrolysis of molten Sodium Chloride the time required to produce 0.1 mols of chlorine gas using a current of 3A is
 - 55 minutes
 - 107.2 minutes
 - 220 Minutes
 - 330 minutes
- How many faradays of electricity are required for the following reaction to occur $MnO_4^- \rightarrow Mn^{2+}$
 - 5 F
 - 3 F
 - 1F
 - 7 F
- Faraday constant is defined as
 - charge carried by 1 electron
 - Charge carried by one mole of electron
 - charge required to deposit one mole of substance
 - Charge carried by 6.22×10^{10} electrons
- The number of electron that have a total charge of 9650 coulombs is
 - 6.22×10^{23}
 - 6.022×10^{24}
 - 6.022×10^{22}
 - 6.022×10^{24}
- H_4PO_4 the conjugate base of
 - PO_4^{3-}
 - P_2O_5
 - H_3PO_4
 - HPO_4^{2-}
- The pH of 10^{-5} M KOH solution will be
 - 9
 - 5
 - 19
 - none of these
- If the solubility product of lead iodide is 3.2×10^{-8} its solubility will be
 - 2×10^{-3} M
 - 6.022×10^{24}
 - 1.6×10^{-6} M
 - 1.8×10^{-6} M
- Which of these is not likely to act as lewis base
 - BF_3
 - PF_3
 - Co
 - F^-
- Conjugate base for bronsted acids H_2O and HF are
 - OH^- and $H_2F^+N^+$ respectively
 - H_3O^+ and F^- respectively
 - OH^- and F^- respectively
 - H_3O^+ and H_2F^- respectively
- The half life period of a radioactive element is 140 days. After 560 days, 1g of element will be reduced to
 - $(1/2)$ g
 - $(1/4)$ g
 - $(1/8)$ g
 - $(1/16)$ g
- If the initial concentration of the reactant is doubled the time for half reaction is also double then the order of the reaction.
 - Zero
 - One
 - Fraction
 - None
- The rate constant of the reaction is $5.8 \times 10^{-2} S^{-1}$. The order of the reaction
 - First Order
 - Zero Order
 - Second Order
 - Third Order
- The addition of a catalyst during chemical reaction alters which of the following quantities
 - Enthalpy
 - Activation energy
 - Entropy
 - Internet energy
- The decomposition of phosphine (PH_3) on tungsten at low pressure is a first order reaction it is because the
 - Rate is proportional to the surface coverage
 - Rate is inversely proportional to the surface coverage
 - Rate is independent of the surface coverage
 - Rate of decomposition is slow
- The Crystal with a metal deficiency defect is
 - NaCl
 - FeO
 - ZnO
 - KCl
- The cation leave its normal position in the crystal and moves to some interstitial position the defect is the crystal is know as
 - Schottly deffect
 - F center
 - Frenkel defect
 - Non - stoichiometric defect
- The yellow colour is NaCl crystal is due to
 - Extraction of electrons in F center
 - Reflection of light from Cl^- ion as the surface
 - Refraction of light from Na^+ ion
 - All of the above
- The Vacant space is bcc lattice unit cells is
 - 48%
 - 23%
 - 32%
 - 26%
- Solid Co_2 is an example of
 - Covalent Solid
 - Metallic Solid
 - Molecular solid
 - Ionic Solid
- Choose the correct statement.
 - Square planar complexes are more stable than octahedral.
 - The spin only magnetic moment of $[Cu(Cl)_4]^{2-}$ is 1.732 BM and it has square planar structure.
 - Crystal field splitting energy (Δ_o) of $[FeF_6]^{4-}$ is higher than he (Δ_o) of $[Fe(CN)_6]^{4-}$.
 - Crystal field stabilization energy of $V(H_2O)_6]^{2+}$ is higher than the crystal field stabilization of $[Ti(H_2O)_6]^{2+}$.

24. Which of the following is paramagnetic in nature
 a) $[Zn(NH_3)_4]^{2+}$ b) $[Co(NH_3)_6]^{3+}$ c) $[Ni(H_2O)_4]^{2+}$ d) $[Ni(CN)_4]^{2-}$
25. A complex in which the Oxidation number of the metal is zero is
 a) $K_4[Fe(CN)_6]$ b) $[Fe(CN)_5(NH_3)]^-$ c) $[Fe(CO)_5]$ d) Both (b) and (c)
26. Which kind of isomerism is possible for a complex $[(Co(NH_3)_4Br_2)Cl]^{2+}$?
 a) Geometrical and ionization b) Geometrical and optical
 c) Optical and ionization d) Geometrical only
27. Which type of isomerism is exhibited by $PI(NH_3)_2Cl_2$?
 a) Coordination isomerism b) Linkage isomerism
 c) Optical isomerism d) Geometrical isomerism.
28. IUPAC name of the complex $K_3[Al(C_2O_4)_3]$ is
 a) Potassiumtrioxalatoaluminium (III) b) Potassiumtrioxalatoaluminate (II)
 c) Potassium trisoxalato aluminate (III) d) Potassium trioxalato aluminate (III)
29. The actinoid element which show the highest oxidation state of +7 are
 a) Np, Pu, Am b) U, Fm, Tn c) U, Tn, Md d) Es, No, Lr
30. Which of the following oxidation states is most common among the lanthanoid
 a) +4 b) +2 c) +6 d) +3
31. Which of the following lanthanoid ion is diamagnetic
 a) Eu^{2+} b) Yb^{2+} c) Co^{2+} d) Sm^{2+}
32. In acid medium potassium permanganate oxidized oxalic acid to
 a) Oxalate b) Carbon dioxide c) Acetate d) Acetic acid
33. The magnetic moment of Mn^{2+} ion is
 a) 5.92 BM b) 2.80 BM c) 8.95 BM d) 3.90 BM
34. Which one of the following is has the same number of unpaired electrons as present in V^{3+}
 a) Ti^{3+} b) Fe^{3+} c) Ni^{2+} d) Cr^{3+}
35. Which of the following is strongest acid among all
 a) HI b) HF c) HBr d) HCl
36. Most easily liquefiable Gas is
 a) Ar b) Ne c) He d) Kr
37. **Assertion:** bond dissociation energy of fluorine is greater than chlorine gas.
Reason: Chlorine has more electronic repulsion than fluorine.
 a) Both assertion and reason are true and reason is the correct explanation of assertion
 b) Both assertion and reason are true but reason is not the correct explanation of assertion.
 c) Assertion is true but reason is false d) Both assertion and reason are false
38. The basicity of Pyrophosphorus acid ($H_4P_2O_6$) is
 a) 4 b) 2 c) 3 d) 5
39. In which of the following NH_3 is not used?
 a) Nessler' reagent b) Reagent for the analysis of IV group basic radical
 c) Reagent for the analysis of III group basic radical d) Tollen's reagent
40. Duralumin is an alloy
 a) Cu, Mn b) Cu, Al, Mg c) Al, Mn d) Al, Cu, Mn, Mg
41. Which of the following is not Sp_2 hybridised
 a) Graphite b) Graphene c) Fullerene d) Dryice
42. The basic structural unit of silicates is
 a) $(SiO_3)^{2-}$ b) $(SiO_4)^{2-}$ c) $(SiO)^-$ d) $(SiO_4)^{4-}$
43. Oxidation state of carbon in its hydrides
 a) +4 b) -4 c) +3 d) +2
44. In diborane the number of electrons that accounts for banana bonds is
 a) Six b) Two c) Four d) Three
45. The incorrect statement among the following is
 a) Nickel is refined by Mond's Process b) Titanium is refined by van Arkel's process
 c) Zinc blende is concentrated by froth flotation
 d) In the metallurgy of gold the metal is leached with dilute sodium chloride solution
46. Zinc is obtained from ZnO by
 a) Carbon reduction b) Reduction using Silver
 c) Electrochemical process d) Acid leaching
47. Flux is a substance which is used to Convert
 a) Mineral into silicate b) Infusible impurities to soluble impurities
 c) Soluble impurities to infusible impurities d) All of these
48. Wolframite ore is separated from tinstone by the process of
 a) Smelting b) Calcination c) Roasting d) Electro Magnetic Separation

77. Which of the following amines does not undergo acetylation
 a) t-butylamine b) Ethylamine c) Diethylamine d) Triethylamine
78. Secondary nitro alkanes react with nitrous acid to form
 a) Red Solution b) Blue Solution c) Green Solution d) Yellow Solution
79. Nitrobenzene and reaction with Ca HNO_3 , H_2SO_4 at $80-100^\circ\text{C}$ forms which are of the following products
 a) 1,4 - dinitrobenzene b) 2,4,6 - trinitrobenzene c) 1,2 dinitrobenzene d) 1,3 - dinitrobenzene
80. The product formed by the reaction an aldehyde with a primary amine
 a) Carbonylic acid b) Aromatic acid c) Schiff's base d) Ketone
81. Which are of the following will not undergo Hoffman bromamide reaction
 a) $\text{CH}_3\text{CO NH CH}_3$ b) $\text{CH}_3\text{CH}_2\text{CO NH}_2$ c) $\text{CH}_3\text{CO NH}_2$ d) $\text{C}_6\text{H}_5\text{CO NH}_2$
82. Which of the following reagent can be used to convert nitrobenzene to aniline
 a) Sn / HCl b) ZnHg / NaOH c) $\text{Zn / NH}_4\text{Cl}$ d) All of these
83. Carboxylic acids have higher boiling points than aldehydes, ketones and even alcohols of comparable molecular mass. It is due to their
 a) More extensive association of carboxylic acid via van der Waals force of attraction
 b) Formation of carboxylate ion c) Formation of intramolecular H-bonding
 d) Formation of intermolecular H-bonding
84. In which of the following reaction new carbon - carbon bond is not formed
 a) Aldol condensation b) Friedel craft reaction c) Kolbe's reaction d) Wolff-Kishner reduction
85. The reagent used to distinguish between acetaldehyde and benzaldehyde is
 a) Tollens reagent b) Fehling's solution c) 2,4 dinitrophenyl hydrazine d) Semicarbazide
86. Which are of the following reaction is an example of disproportionation reaction
 a) Aldol condensation b) Cannizzaro reaction c) Benzoin Condensation d) None of these
87. Which are of the following reduces Tollens' reagent
 a) Formic acid b) Acetic acid c) Benzophenone d) None of these
88. $\text{CH}_3\text{Br} \xrightarrow{\text{KCN}}$ (A) $\xrightarrow{\text{H}_3\text{O}^+}$ (B) $\xrightarrow{\text{PCl}_5}$ (C) Product is
 a) Acetyl chloride b) Chloroacetic acid c) α -chloro cyclo ethanoic acid d) none of these
89. In the following reaction $\text{HC}\equiv\text{CH} \xrightarrow[\text{HgSO}_4]{\text{H}_2\text{SO}_4}$ x Product x will not give
 a) Tollens' test b) Victor Meyer test c) Iodoform test d) Fehling solution test
90. An reacting with neutral ferric chloride phenol gives
 a) Red colour b) Violet Colour c) Dark Green Colour d) No Colouration
91. Which of the following compound can be used as antifreeze in automobile radiators?
 a) Methanol b) Ethanol c) Neopentyl alcohol d) Ethane -1,2 diol
92. Isopropylbenzene on air oxidation in the presence of dilute acid gives
 a) $\text{C}_6\text{H}_5\text{COOH}$ b) $\text{C}_6\text{H}_5\text{COCH}_3$ c) $\text{C}_6\text{H}_5\text{COC}_6\text{H}_5$ d) $\text{C}_6\text{H}_5\text{OH}$
93. Assertion : Phenol is more acidic than ethanol
 Reason : Phenoxide ion is resonance stabilised
 a) Both assertion and reason are true and reason is the correct explanation of assertion
 b) Both assertion and reason are true but reason is not the correct explanation of assertion
 c) Assertion is true but reason is false d) Both assertion and reason are false
94. Carboxylic acid is
 a) Phenol b) Picric acid c) Benzoic acid d) Phenylacetic acid
95. Which are of the following is the strongest acid
 a) 2-Nitrophenol b) 4-Chlorophenol c) 4-Nitrophenol d) 3-Nitrophenol
96. Adsorption of a gas on a solid metal surface is spontaneous and exothermic then
 a) ΔH increases b) ΔS increases c) ΔG increases d) ΔS decreases
97. Which are of the following is an example of homogeneous catalysis
 a) Manufacture of ammonia by Haber's process b) manufacture of sulphuric acid by contact process
 c) Hydrogenation of oil d) Hydrolysis of sucrose in presence of dil. HCl
98. The phenomenon observed when a beam of light is passed through a colloidal solution is
 a) Cataphoresis b) Electrophoresis c) Coagulation d) Tyndall effect
99. The most effective electrolyte for the coagulation of As_2S_3 Sol is
 a) NaCl b) $\text{Ba}(\text{NO}_3)_2$ c) $\text{K}_3[\text{Fe}(\text{CN})_6]$ d) $\text{Al}_2(\text{SO}_4)_3$
100. Fog is a colloidal solution of
 a) Solid is gas b) Gas is gas c) Liquid is gas d) Gas is liquid