



Class: 12

**CHENGALPATTU DISTRICT
ONE WORD EXAMINATION – FEBRUARY -2023
CHEMISTRY**

[Max. Marks:100]

Time: 1.30hrs

1. On roasting a sulphide ore colourless gas evolved. Its aqueous solution is
 - a) Acidic
 - b) Basic
 - c) Neutral
 - d) Amphoteric
2. Which one of the following method is used for concentrating ore
 - a) Chemical leaching
 - b) Roasting
 - c) Froth floatation process
 - d) both (a) and (c)
3. During the electrolysis of copper by electrolytic refining method, which one of the following is acts as cathode
 - a) Pure copper
 - b) Impure copper
 - c) carbon block
 - d) Platinum
4. In the electrolytic refining of copper, which one of the following is used as cathode?
 - a) Pure copper
 - b) Impure copper
 - c) Carbon rod
 - d) Platinum electrode
5. Which of the following is the ore of copper
 - a) Azurite
 - b) Anglesite
 - c) Cerrusite
 - d) Argentite
6. Zirconium can be purified using
 - a) Mond process
 - b) Van Arkel method
 - c) Alumino thermic process
 - d) chemical leaching method
7. Which of the following metal can be used to reduce alumina?
 - a) Fe
 - b) Cu
 - c) Mg
 - d) Zn
8. Which of the following metal has the largest abundance in the earth's crust
 - a) Aluminium
 - b) Calcium
 - c) Magnesium
 - d) Sodium
9. The element that does not show catenation among the following
 - a) carbon
 - b) silicon
 - c) lead
 - d) Germanium
10. $B_3N_3H_6$ is known as
 - a) Borazole
 - b) Borax
 - c) Boric acid
 - d) Boran hydride
11. 17 th Group of elements in the periodic table is called as
 - a) Chalcogen
 - b) Icosagens
 - c) Pnictogens
 - d) Tetragens
12. On heating $HCOOH$ with H_2SO_4 the gas liberated is
 - a) CO
 - b) CO_2
 - c) H_2
 - d) SO_3
13. Pick out the product formed when diborane on heating red hot
 - a) B_5H_9
 - b) $B_{10}H_{14}$
 - c) B
 - d) B_4H_{10}
14. Pick out the wrong statement from the structure of carbon dioxide
 - a) It has linear structure
 - b) Equal bond distance in C-O
 - c) one 3c-4e bond
 - d) three sigma bond
15. Marshall's acid is
 - a) H_2SO_5
 - b) $H_2S_2O_8$
 - c) $H_2S_2O_7$
 - d) H_2SO_3
16. Decreasing order of stability of hydrogen halides are
 - a) $HF > HCl > HBr > HI$
 - b) $HF < HCl > HBr > HI$
 - c) $HF < HCl < HBr < HI$
 - d) $HF > HCl < HBr < HI$
17. The basicity of Pyrophosphorous acid is ($H_4P_2O_5$) is
 - a) 4
 - b) 2
 - c) 3
 - d) 5
18. The shape of the molecule $XeOF_4$ is
 - a) square planar
 - b) Square pyramid
 - c) linear
 - d) Octahedral
19. The metal used for manufacturing artificial joints is
 - a) Titanium
 - b) Molybdenum
 - c) Tungsten
 - d) Platinum
20. Mn^{3+} has the configuration
 - a) $3d^5$
 - b) $3d^4$
 - c) $3d^2$
 - d) $3d^3$
21. Magnetic moment of Sc^{3+} is
 - a) 1.75 BM
 - b) 4.80 BM
 - c) diamagnetic
 - d) 5.96 BM Page 110 EM
22. When $KMnO_4$ is heated with hot sulphuric acid, to give
 - a) $MnSO_4$
 - b) Mn_2O_7
 - c) K_2MnO_4
 - d) MnO_2 pg 116 EM
23. Equivalent weight of $KMnO_4$ in neutral medium is
 - a) 31.6
 - b) 158
 - c) 52.67
 - d) 63.2
24. The electronic configuration of Americium is
 - a) $[Rn] 5f^7 6d^0 7s^2$
 - b) $[Rn] 5f^6 6d^1 7s^2$
 - c) $[Rn] 5f^7 6d^0 7s^3$
 - d) $[Rn] 5f^3 6d^4 7s^2$
25. The number of moles of acidified $KMnO_4$ required to oxidize 1 mole of ferrous oxalate (FeC_2O_4) is
 - a) 5
 - b) 0.6
 - c) 3
 - d) 1.5

26. Coordination number of nickel in the complex $[\text{Ni}(\text{en})_3] \text{Cl}_2$ is
 a) 5 b) 6 c) 2 d) 4
27. Zeisel's salt is
 a) $\text{K}[\text{PtCl}_3(\text{C}_2\text{H}_4)]$ b) $[\text{Pt}(\text{NH}_3)_4][\text{PtCl}_4]$ c) $[\text{Co}(\text{NH}_3)_6]^{3+}$ d) $\text{K}_4[\text{Fe}(\text{CN})_6]$
28. Which of the following is ambidentate ligand
 a) CN^- b) NO_2^- c) NO_3^- d) Both (a) and (b)
29. Crystal field stabilization energy for high spin d^5 octahedral complex is
 a) $-0.6\Delta_o$ b) $0\Delta_o$ c) $2(P-\Delta_o)$ d) $2(P+\Delta_o)$
30. Pick out Lewis base from the following
 a) SO_2 b) CO_2 c) SO_3 d) CaO
31. The primary valence of the metal M in the complex $[\text{Fe}(\text{en})_2(\text{Ox})] \text{Cl}$ is
 a) 3 b) 6 c) 4 d) 9
32. In FCC unit cell of the edge length is $8\sqrt{2}$ pm. The radius of the metal atom is A°
 a) 0.04 b) 0.02 c) 8×10^{-2} d) $8/\sqrt{2}$
33. In a solid atom M occupies CCP lattice and $(1/3)$ of tetrahedral voids are occupied by atom N
 Find the formula of a solid formed by M and N
 a) MN b) M_3N c) MN_3 d) M_3N_2
34. Radius ratio of an ionic crystal is between 0.414- 0.732. Coordination number is _____
 a) 3 b) 4 c) 6 d) 8
35. The number of unit cell shared by an atom at the center in FCC crystal is
 a) 1 b) 2 c) 4 d) 8
36. An example of covalent solid is a) SiO_2 b) Naphthalene c) Anthracene d) Glucose
37. In a primitive crystal system crystallographic axes and angles are
 $\alpha = \beta = \gamma \neq 90^\circ$ & $a \neq b \neq c$ respectively. Shape of the crystal system is
 a) Hexagonal b) Rhombohedral c) Tetragonal d) Cubic
38. Packing efficiency of FCC crystal lattice is a) 74% b) 48% c) 32% d) 26%
39. An example of zero order reaction is
 a) Dissociation of sulphuric chloride b) Dissociation of nitrogen peroxide
 c) Dissociation of aqueous solution of hydrogen peroxide
 d) Iodination of acetone in acid medium
40. Initial concentration of a zero order reaction is 0.25 M. Its rate constant is 2.303×10^{-2}
 then half life period of the reaction is
 a) 0.096×10^2 b) 1×10^2 c) 2×10^2 d) 1
41. The addition of a catalyst during a chemical reaction alters which of the following quantities?
 a) Activation energy b) Enthalpy c) Entropy d) Internal energy
42. A first order reaction takes 45 minutes to complete the reaction, Time required for the completion of 99.9% of the reaction is
 a) 7.5 Hr b) 5 Hr c) 10 Hr d) 20 Hr
43. Unit of zero order reaction
 a) $\text{mol L}^{-1}\text{S}^{-1}$ b) $\text{mol}^{-2}\text{L}^{-2}\text{S}^{-1}$ c) S^{-1} d) $\text{mol}^{-1}\text{L S}^{-1}$
44. The decomposition of phosphine (PH_3) on tungsten at low pressure is a first order reaction. It is because the
 a) rate is proportional to the surface coverage
 b) rate is inversely proportional to the surface coverage
 c) Rate is independent of the surface coverage
 d) rate of decomposition is slow
45. The rate constant of a reaction at temperature 200K is 10 times less than the rate constant at 400K. What is the activation energy of the reaction?
 a) 1842.2 R b) 921.2R c) 460.6 R d) 230.R
46. The solubility product of lead iodide is 3.2×10^{-8} , its solubility will be
 a) $2 \times 10^{-3}\text{M}$ b) $4 \times 10^{-4}\text{M}$ c) $1.6 \times 10^{-11}\text{M}$ d) Zero
47. Conjugate acid of H_2O is a) HCl b) OH^- c) H_3O^+ d) H^+
48. The pOH value of Hydrogen ion concentration of a fruit juice is 10^{-5}M is
 a) 14 b) 9 c) 5 d) 7
49. Which one of the following will not act as buffer solution
 a) $\text{CH}_3\text{COOH} + \text{CH}_3\text{COONa}$ b) $\text{HCl} + \text{NaCl}$
 c) $\text{NH}_4\text{OH} + \text{NH}_4\text{Cl}$ d) $\text{H}_2\text{CO}_3 + \text{NaHCO}_3$
50. Choose Lewis base from the following a) SO_2 b) CO_2 c) SO_3 d) CaO

51. The dissociation constant of a weak acid is 1×10^{-3} . In order to prepare a buffer solution with a pH=4, the [Acid]/[Salt] ratio will be
 a) 4:3 b) 10:1 c) 3:4 d) 1:10
52. The PH of an aqueous solution is one. The solution is
 a) Strongly acidic b) Slightly acidic c) Neutral d) Basic
53. What is the PH of the resulting solution when equal volume of 0.01M NaOH and 0.01M HCl are mixed?
 a) 3.0 b) 2.0 c) 7.0 d) 12.65
54. Equal volume of three acid solutions of PH 1, 2, and 3 are mixed in a vessel. What will be the H^+ ion concentration in the mixture?
 a) 10^{-6} b) 0.11 c) 3.7×10^{-2} d) None of these
55. Ostwald dilution law equation is
 a) $K = \frac{c a^2}{(1-a)^2 c}$ b) $K = \frac{c a^2}{(1-a)}$ c) $K = \frac{1-a^2}{c}$ d) $K = \frac{c a^2}{(a-1)}$
56. When $[H_3O^+]$ ion concentration increases in a solution, its PH value
 a) Decreases b) Increases c) No change d) Equal to 7
57. In the spectro chemical series, which ligand produce strong field,
 a) Cl^- b) H_2O c) NO_2^- d) CO
58. The standard EMF, in volts produced by the cell $Zn/Zn^{2+} // Ag^+/Ag$ when E^0 for $Zn^{2+} = -0.761$ Volt and E^0 for $Ag^+ = 0.799V$ is
 a) 1.10 b) 1.560 c) 0.076 d) 2.359
59. During the charging of a lead storage battery the reaction occurring at the cathode is represented by
 a) $Pb^{2+} + SO_4^{2-} \rightarrow PbSO_4$ b) $Pb \rightarrow Pb^{2+} + 2e^-$
 c) $PbSO_4 + 2H_2O \rightarrow PbO_2 + 4H^+ + SO_4^{2-} + 2e^-$ d) $Pb^{2+} + 2e^- \rightarrow Pb$
60. Oxidation number of Chlorine in Cl_2O_3 , Cl_2 and ClO_3^- are respectively
 a) +1, -1, +5 b) +1, 0, -1 c) -1, 0, -1 d) +1, 0, +5
61. Insulin, a hormone, chemically is a) Fat b) Steroid c) Protein d) Carbohydrates
62. The best solvent for removing butter stain from cloth is
 a) $CHCl_3$ b) C_2H_5OH c) $C_2H_5OC_2H_5$ d) H_2O
63. Which of the following does not reduce Benedicts solution?
 a) Glucose b) Fructose c) Sucrose d) Cellulose
64. Protein give purple colour with
 a) Benedicts reagent b) Iodine-solution c) Ninhydrin solution d) Biuret
65. The Sweetest sugar is a) Sucrose b) Fructose c) Glucose d) Maltose
66. Teflon is a polymer, monomer of which is
 a) Difluoroethane b) Mon fluoro ethane c) Tetrafluoro ethane d) Tetrafluoroethene
67. In nuclic acid, the nucleotides are linked to one another through
 a) Hydrogen bond b) Peptide bond c) Glycosidic linkage d) Phosphate group
68. Glucose reacts with acetic anhydride to form
 a) Mono acetate b) Tetra acetate c) Pent acetate d) Hexa acetate
69. Cannizaros's reaction involves a) Oxidation only b) Reduction only c) Hydride shift d) Alkyl shift
70. When phenol reacts with ammonia in the presence of $ZnCl_2$ at $300^\circ C$ it gives
 a) Primray amine b) Secondary amine c) Tertiary amine d) Both b and c
71. Chlorobenzene on fusing with NaOH gives
 a) Phenol b) Benzal c) Benzaldehyde d) Toluene
72. In a first order reaction, the concentration of the reactant decrease from 0.8 to 0.4 M in 15 minutes. The time taken for the concentration to change from 0.1M to 0.025M is
 a) 7.5 min b) 15 min c) 30 min d) 60 min
73. The quantity of current required to produce 15 g of Zinc in 200 minutes is
 a) $2.67 A^0$ b) $3.69 A^0$ c) $1.67 A^0$ d) None
74. EDTA is a) Arrhenius acid b) Bronsted base c) Lewis base d) All the above
75. The hybridization in XeF_6 , XeF_4 and XeF_2 respectively
 a) SP^3d^2 SP^3 SP b) SP_3d^3 SP^3d^2 SP^3d
 c) SP^3d^2 SP^3 SP^2 d) SP_3d^3 SP^3d SP^3
76. Which of the following is not an electrophile? a) NH_3 b) Br^+ c) H^+ d) BF_3
77. Glucose and Fructose can be distinguished by using
 a) Molisch test b) Conc. NaOH c) H_2O_2 d) Alk solution of $KMnO_4$

78. Which statement is not true
 a) Peptide give α -amino acid on hydrolysis b) Peptide are not amino acids
 c) peptides contain amide linkage d) Dipeptide can be produced from two different amino acids.
79. The Metal found in Vitamin B12 is a) Co Metal b) Co(II) c) Co(III) d) Co(IV)
80. (+) Glucose and (+) mannose are
 a) Geometrical isomer b) Epimers c) Diastereoisomers d) Enantiomers
81. The conductivity cell has been calibrated with a 0.01 M, 1:1 electrolyte solution. Specific conductance ($K = 1.25 \times 10^{-3} \text{ S cm}^{-1}$), in the cell and the measured resistance was 800 ohm at 25°C . The cell constant is
 a) 10^{-1} Cm^{-1} b) 10^1 cm^{-1} c) 1 cm^{-1} d) $5,7 \times 10^{-12}$
82. The button cell used in watches function as follows
 $\text{Zn(s)} + \text{Ag}_2\text{O(s)} + \text{H}_2\text{O(l)} = 2 \text{Ag(s)} + \text{Zn}^{2+}(\text{aq}) + 2\text{OH}^-(\text{aq}) \quad E^0 = 0.76 \text{ V}$
 $\text{Ag}_2\text{O(s)} + \text{H}_2\text{O(l)} + 2 \text{e}^- \text{-----} \rightarrow 2\text{Ag(s)} + 2 \text{OH}^-(\text{aq}) \quad E^0 = 0.34 \text{ V}$
 $\text{Zn(s)} \text{-----} \rightarrow \text{Zn}^{2+}(\text{aq}) + 2 \text{e}^- \quad E^0 = 0.76 \text{ V}$ The cell potential will be
 a) 0.84 V b) 1.34 V c) 1.10 V d) 0.42 V
83. Cell equation $\text{A} + 2\text{B}^- \text{---} \rightarrow \text{A}^{2+} + 2\text{B}$, $\text{A}^{2+} + 2\text{e}^- \text{---} \rightarrow \text{A}$ $E^0 = +0.34 \text{ V}$ and $\log_{10}K = 15.6$
 At 300K for cell reaction find E^0 for $\text{B}^+ + \text{e}^- \text{---} \rightarrow \text{B}$
 a) 0.80 b) 1.26 c) -0.54 d) -10.94
84. Unit of molar conductance is _____ a) Ohm b) Sm^{-1} c) $\text{mol}^{-1} \text{m}^3$ d) $\text{Sm}^2 \text{mol}^{-1}$
85. The process used for converting hard water into soft water is
 a) Mond's Process b) Permutit process c) Haber's Process d) Fisher Thrope Synthesis
86. When litmus solution is added to Al^{3+} solution, the nature of the solution changes to
 a) Acidic b) Basic c) Neutral d) None of the above
87. An example for Heterogeneous catalysis reaction is
 a) $2\text{SO}_2(\text{g}) + \text{O}_2(\text{g}) \text{-----} \rightarrow 2\text{SO}_3(\text{g})$
 b) $\text{CH}_3\text{CHO}(\text{g}) + \text{I}_2(\text{g}) \text{-----} \rightarrow \text{CH}_4(\text{g}) + \text{CO}(\text{g}) + \text{I}_2(\text{g})$
 c) $\text{C}_{12}\text{H}_{22}\text{O}_{11}(\text{l}) + \text{H}_2\text{O}(\text{l}) \text{-----} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6(\text{l}) + \text{C}_6\text{H}_{12}\text{O}_6(\text{l})$
 d) $\text{H}_2\text{O}_2(\text{l}) \text{-----} \rightarrow 2\text{H}_2\text{O}(\text{l}) + \text{O}_2(\text{g})$
88. $\text{E} + \text{S} = \text{ES} \text{---} \rightarrow \text{P} + \text{E}$ In the enzyme catalysis reaction ES is known as
 a) Product b) Activated complex c) Reactant d) Enzyme
89. The dispersion medium and dispersion phase in Cheese is
 a) Liquid, Solid b) Solid, Liquid c) Liquid, Liquid d) Solid, Solid
90. Colloidion is a 4% solution of which one of the following compounds in alcohol- ether mixture?
 a) Nitro glycerine b) Cellulose acetate c) Glycodinitrate d) Nitrocellulose
91. Hair cream is a) Gel b) Emulsion c) Solid sol d) Sol.
92. An example of condensation polymer is
 a) PVC b) Terelyene c) Polypropylene d) Polystyrene
93. 2- Phenyl ethanol may be prepared by the reaction of phenyl magnesium bromide with
 a) HCHO b) CH_3CHO c) CH_3COCH_3 d) $\text{HO}-\text{CH}_2-\text{CH}_2\text{OH}$
94. Zinc is coated over iron to prevent rusting of iron because
 a) $E^0(\text{Zn}^{2+}, \text{Zn}) = E^0(\text{Fe}^{2+}/\text{Fe})$ b) $E^0(\text{Zn}^{2+}, \text{Zn}) > E^0(\text{Fe}^{2+}/\text{Fe})$
 c) $E^0(\text{Zn}^{2+}, \text{Zn}) < E^0(\text{Fe}^{2+}/\text{Fe})$ d) Zinc is cheaper than iron.
95. IUPAC name of the $\text{C}_6\text{H}_5-\text{CH}_2-\text{NH}-\text{CH}_3$ compound is
 a) N-methyl phenyl methanamine b) N,N dimethylamine
 c) N-methyl propanamine d) Neo pentyl amine
96. _____ does not undergo Friedel Crafts reaction
 a) Aniline b) Phenol c) Anisole d) Chlorobenzene
97. Antifreeze in automobile radiator is
 a) Ethanol b) Methanol c) Neopentyl alcohol d) ethan-1,2-diol
98. The sweet smelling of ester compound responsible for orange fruit is
 a) Amyl acetate b) Ethyl Buterate c) Octyl acetate d) Amyl buterate
99. Cumene on air oxidation gives
 a) Benzoic acid b) Acetophenone c) Benzophenone d) Phenol
100. Vinegar is
 a) Pure acetic acid b) Impure acetic acid
 c) 6-8% Acetic acid d) 50% acetic acid