

District Common Examinations-2023

Kanchipuram District

One mark revision

Subject: Chemistry

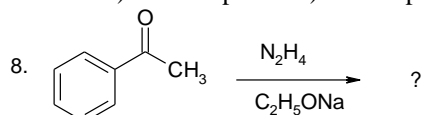
Time: 3.30PM to 5.00PM

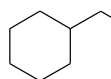
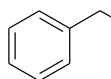
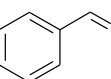
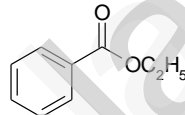
1. Consider the following statements.

- (i) increase in concentration of the reactant increases the rate of a zero order reaction
 (ii) rate constant K is equal to collision frequency A if $E_a=0$
 (iii) rate constant K is equal to collision frequency A if $E_a=\infty$
 (iv) a plot of $\ln(K)$ vs T is a straight line.
 (v) a plot of $\ln(K)$ vs $1/T$ is a straight line with a positive slope.

Correct statements are

- (a) (ii) and (iv) (b) (i), (ii), and (v) (c) (ii) only (d) (ii) and (v)
2. Which one of the following is a bio-degradable polymer?
 a) HDPE b) PVC c) Nylon-6 d) PHBV
3. Which is known as oil of mirbane?
 a) Nitromethane b) Nitrobenzene c) aniline d) Methyl cyanide
4. In the electrolytic refining of copper, which one of the following is used as anode?
 a) impure copper b) pure copper c) carbon rod d) platinum electrode
5. the geometry at which carbon atom in diamond are bonded to each other is
 a) hexagonal b) octahedral c) tetrahedral d) none of these
6. the packing efficiency in bcc lattice unit cell is
 a) 22% b) 32% c) 68% d) 72%
7. which one of the following is strongest acid?
 a) 4-chlorophenol b) 3-nitro phenol c) 2-nitro phenol d) 4-nitro phenol



- (a)  (b)  (c)  (d) 

9. $2XeOF_4 + SiO_2 \rightarrow A + SiF_4$, Here 'A' is

- a) XeO_2F_2 b) XeO_3 c) XeF_4 d) $XeSiO_3$

10. Glucose \xrightarrow{HCN} Product $\xrightarrow{\text{Hydrolysis}}$ Product \xrightarrow{HI} A : A is

- a) Heptane b) 2-iodo hexane c) Heptanol d) Heptanoic acid

11. Crystal field stabilization energy for high spin d^5 octahedral complex is

- a) +0 b) $2(p+\Delta_o)$ c) $2(p-\Delta_o)$ d) $-0.6 \Delta_o$

12. the shape of the $Fe(OH)_3$ sol is

- a) spherical b) rod like c) cylinder d) disc like

13. During electrolysis of molten sodium chloride, the time required to produce 0.1 mole of chlorine gas using a current of 3A is

- a) 55min b) 107.2min c) 220 min d) 330 min

14. the pH of $10^{-5}M$ KOH solution will be

- a) 5 b) 11 c) 9 d) none of these

15. The pyrimidine base present in DNA are

- (a) cytosine and uracil (b) cytosine and guanine
 (c) cytosine and adenine (d) cytosine and thiamine

16. Match the following choose the correct answer

- (i) Malachite 1) zinc
 (ii) Calamine 2) Lead
 (iii) Galena 3) Iron
 (iv) Haematite 4) Copper

(a) (i)-2 (ii)-3 (iii)-4 (iv)-1 (b) (i)-4 (ii)-1 (iii)-2 (iv)-3 (c) (i)-1 (ii)-4 (iii)-3 (iv)-2 (d) (i)-3 (ii)-1 (iii)-4 (iv)-2

17. An aqueous solution of borax is

- a) acidic b) neutral c) amphoteric d) basic

18. The correct order of the thermal stability of hydrogen halide is

- a) $HI > HBr > HCl > HF$ b) $HF > HCl > HBr > HI$ c) $HI > HCl > HF > HBr$ d) $HCl > HF > HBr > HI$

19. Which actinoid is +7 oxidation state

- a) Plutonium b) Thorium c) Uranium d) Gadolinium

20. In which of the following coordination entities the magnitude of Δ_o will be maximum?

- a) $[Co(CN)_6]^{3-}$ b) $[Co(C_2O_4)_3]^{3-}$ c) $[Co(H_2O)_6]^{3+}$ d) $[Co(NH_3)_6]^{3+}$

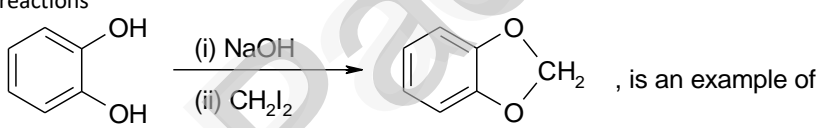
21. Solid CO_2 is an example of

- a) Covalent solid b) metallic solid c) Molecular solid d) ionic solid
22. After 2 hours, a radioactive substance becomes $(1/4)$ th of original amount. Then the half life (in min) is
a) 120 minutes b) 240 minutes c) 6 minutes d) 180 minutes
23. Zinc can be coated on iron to produce galvanized iron but the reverse is not possible. It is because
a) zinc is lighter than iron b) Zinc is lower melting point than iron
c) zinc is lower negative electrode potential than iron
d) zinc is higher negative electrode potential than iron
24. Which of these is not likely to act as Lewis base?
a) F^- b) CO c) PF_3 d) BF_3
25. Argyrol is
a) Gold sol b) magnesia sol c) calcium sol d) Silver sol
26. Polymer of nylon-6 is
a) carbolactom b) phenol c) glycol d) glycol and terephthalic acid
27. Which pyrimidine base not present in DNA?
a) Thiamine b) Cytosine c) Uracil d) Adenine
28. Which one is used insecticide?
a) Nitromethane b) nitro benzene c) methyl nitrile d) chloropicrin
29. In this reaction,

$$HC\equiv CH \xrightarrow[HgSO_4]{H_2SO_4} X$$
; Product X will not give
a) Tollen's test b) Victor meyer test c) Fehling solution test d) Iodoform test
30. Carbolic acid is
a) Picric acid b) Benzoic acid c) Acetic acid d) Phenol
31. Glycerol oxidised with bismuth nitrate to form compound is
a) glyceraldehydes b) meso oxalic acid c) glyceric acid d) tartronic acid
32. Dissociation constant of NH_4OH is 1.8×10^{-5} the hydrolysis constant of NH_4Cl would be
a) 1.8×10^{-19} b) 5.55×10^{-10} c) 5.55×10^{-5} d) 1.80×10^{-5}
33. Faraday constant is defined as
a) Charge carried by 1 electron b) Charge carried by one mole of electrons
c) Charge required to deposit one mole of substance
d) Charge carried by 6.22×10^{10} electrons
34. Which one of the following Lanthanoid ion diamagnetic nature?
a) Eu^{2+} b) Yb^{2+} c) Ce^{2+} d) Sm^{2+}
35. Which of the metal is extracted by Hall-Heroult process?
a) Ni b) Cu c) Al d) Zn
36. Which is ortho silicate
a) Phenacite b) Thortveitite c) Spodumene d) Asbestos
37. Number of atom present in face centered cubic unit cell
a) 1 b) 2 c) 4 d) 6
38. Assertion: rate of reaction doubles when the concentration of the reactant is doubles if it is a first order reaction
Reason: rate constant also doubles
a) Both assertion and reason are false
b) Both assertion and reason are true but reason is the correct explanation of assertion
c) Assertion is true but reason is false
d) Both assertion and reason are true but reason is not the correct explanation of assertion
39. Match the following choose the correct answer
(i) Acetyl salicylic acid 1) General anaesthetics
(ii) Morphine 2) Antacids
(iii) Propofol 3) Antipyretics
(iv) milk of magnesia 4) Opioids
(a) (i)-4 (ii)-3 (iii)-1 (iv)-2 (b) (i)-3 (ii)-4 (iii)-1 (iv)-2 (c) (i)-3 (ii)-2 (iii)-4 (iv)-1 (d) (i)-4 (ii)-1 (iii)-3 (iv)-2
40. Which one of the following ions has the same number of unpaired electrons as present in V^{3+} ?
a) Ti^{3+} b) Fe^{3+} c) Ni^{2+} d) Cr^{3+}
41. Hair cream is
a) gel b) emulsion c) solid sol d) sol
42. Which is used coagulating agent for rubber latex
a) formic acid b) benzoic acid c) acetyl chloride d) ethyl acetate
43. what is the molecular formula of phosphoric acid?
a) H_3PO_2 b) H_3PO_3 c) $H_4P_2O_6$ d) $H_4P_2O_7$
44. Which one of the following compound is para magnetic in nature?
a) $[Zn(NH_3)_4]^{2+}$ b) $[Co(NH_3)_6]^{3+}$ c) $[Ni(H_2O)_6]^{2+}$ d) $[Ni(CN)_4]^{2-}$
45. Secondary nitro alkanes react with nitrous acid to form
a) yellow solution b) green solution c) red solution d) blue solution

46. The instability constant value (α) of $[Fe(SCN)]^{2+}$ is 1.0×10^{-3} then the stability constant value β is

47. The magnetic moment of Mn^{2+} ion is equal to the magnetic moment of ____
 a) Fe^{2+} b) V^{3+} c) Cr^{3+} d) Fe^{3+}
48. The basicity of pyrophosphorous acid ($H_4P_2O_5$) is
 a) 2 b) 3 c) 1 d) 4
49. The element that does not show catenation among the following p-block element is
 a) Carbon b) Germanium c) Silicon d) Lead
50. Match the following
 (i) Alkali Leaching 1) Extraction of gold
 (ii) Acid Leaching 2) Purification of zirconium
 (iii) Cyanide leaching 3) Concentration of bauxite ore
 (iv) Van-Arkel process 4) Concentration of ZnS
 (a) (i)-2 (ii)-3 (iii)-4 (iv)-1 (b) (i)-1 (ii)-2 (iii)-3 (iv)-4 (c) (i)-2 (ii)-1 (iii)-4 (iv)-3 (d) (i)-3 (ii)-4 (iii)-1 (iv)-2
51. The crystal with a metal deficiency defect is
 a) NaCl b) ZnO c) FeO d) KCl
52. The half life period of first order reaction is 20 mins. The initial concentration of the reactant is doubled, its half life period is
 a) 20mins b) 40mins c) 10mins d) 60mins
53. The catalyst used in the preparation of sulphuric acid by contact process is
 a) H_2S b) Pt c) Fe d) Mo
54. The number of electrons delivered at the cathode during electrolysis by a current of 1A in 60seconds is (Charge of electron = $1.6 \times 10^{-19}C$)
 a) 7.48×10^{23} b) 3.75×10^{20} c) 6.022×10^{20} d) 6.22×10^{23}
55. If the solubility product of lead iodide is 3.2×10^{-8} its solubility will be
 a) $2 \times 10^{-3}M$ b) $1.6 \times 10^{-5}M$ c) $4 \times 10^{-4}M$ d) $1.8 \times 10^{-5}M$
56. Which one of the following reagent is used to distinguish between acetaldehyde and benzaldehyde?
 a) Tollen's reagent b) Fehling's solution c) 2,4-dinitro phenylhydrazin d) Semicarbid
57. Antiseptic and disinfectants either kill (or) prevent growth of microorganisms. Identify which of the following statements is not true?
 a) Disinfectants harm the living tissues b) dilute solutions of boric acid and hydrogen peroxide are strong antiseptics c) A 0.2% solution of phenol is an antiseptic while 1% solution acts as a disinfectant d) Chlorine and iodine are used as strong disinfectants.
58. A precursor to synthesis of insecticide pheromones is
 a) Ethanol b) Ethanal c) diethyl ether d) methoxy benzene
59. The pH value maintain during the conversion of benzene diazonium chloride to p-amino azo benzene at 273-278 K is
 a) 7-9 b) 4-5 c) 8-11 d) 9-10
60. Which is not correctly matched?
 a) Vitamin C - Ascorbic acid
 b) Vitamin B_{12} - Cobalamin
 c) Vitamin E - Ergocalciferol
 d) Vitamin B_6 - Pyridoxine
61. 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
62. The fraction of total volume occupied by the atoms in a simple cubic is
 a) $\pi/4\sqrt{2}$ b) $\pi/6$ c) $\pi/4$ d) $\pi/3\sqrt{2}$
63. Which one of the following will react with phenol to give salicylaldehyde after hydrolysis
 a) CO_2 b) Trichloromethane c) Trichloro ethane d) Dichloro methane
64. If the rate of the reaction is equal to rate constant, then the order of this reaction is?
 (a) zero (b) one (c) pseudo first (d) second
65. The most effective electrolyte for the coagulation of As_2S_3 sol is
 a) $Al_2(SO_4)_3$ b) NaCl c) $Ba(NO_3)_2$ d) $K_3[Fe(CN)_6]$
66. How many geometrical isomers are possible for $[Pt(py)(NH_3)(Br)(Cl)]?$
 a) 0 b) 3 c) 4 d) 15
67. The compound that is used in nuclear reactors as protective shields and control rods is
 a) Metal oxides b) Metal carbide c) Metal borides d) Metal carbonates
68. The hybridisation in IF_7 is
 a) SP^3d^2 b) SP^3d c) SP^3 d) SP^3d^3
69. If 75% of a first order reaction was completed in 60 mins, 50% of the same reaction under the same conditions would be completed is
 (a) 20mins (b) 30mins (c) 75 mins (d) 35 mins
70. The colour U^{4+} is
 a) green b) Yellow c) Red d) Orange
71. In a buffer solution contain equimolar weak acid and its salt. The dissociation constant of weak acid is 1×10^{-4} . Then its pH value is
 a) 4 b) 12 c) 10 d) 11
72. How much of the current required to deposit 1 mole of Cu^{2+} ? [Atomic mass of copper is 63]
 a) 96500C b) 193000C c) 48250C d) 6300C
73. If the compound oxidized by concentrated nitric acid to give propionic acid and ethanoic acid, then that compound is
 a) Pentanone b) Butanone c) Pentan-2-one d) butan-2-one
74. The compound used to produce lubricating oils in motors and machinery is
 a) Nitromethane b) Methylamine c) Nitrobenzene d) aniline
75. α -1,2 glycosidic linkage present in the carbohydrate is

- a) Maltose b) Starch c) Glucose d) Sucrose
76. Jeweler borax is
a) $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$ b) $\text{Na}_2\text{B}_4\text{O}_7 \cdot 8\text{H}_2\text{O}$ c) $\text{Na}_2\text{B}_4\text{O}_7 \cdot 5\text{H}_2\text{O}$ d) $\text{Na}_2\text{B}_4\text{O}_7$
77. The hybridization in diamond is
a) sp b) sp^2 c) sp^3 d) dsp^2
78. On oxidation with iodine, sulphite ion is transformed to
a) $\text{S}_4\text{O}_6^{2-}$ b) SO_3^{2-} c) $\text{S}_2\text{O}_6^{2-}$ d) SO_4^{2-}
79. The magnetic moment of Cu^+ ion is
a) 1.732BM b) 0BM c) 5.92BM d) 2.80BM
80. Crystal field stabilization energy for high spin d^5 octahedral complex is
a) $-0.6\Delta_o$ b) $2(p-\Delta_o)$ c) 0 d) $2(p+\Delta_o)$
81. The coordination number of CCP arrangement in solid is
a) 6 b) 8 c) 10 d) 12
82. The order of the reaction for the isomerisation of cyclopropane to propene, is
a) Zero b) First c) Second d) Third
83. Equal volumes of three acid solutions of pH 1, 2 and 3 are mixed in vessel. What will be the H^+ ion concentration in the mixture?
a) 0.111 b) 10^{-6} c) 3.7×10^{-2} d) 1.3×10^{-4}
84. Colloidal solution of gold can be prepared by
a) Mechanical dispersion method b) Electro dispersion method c) Oxidation method d) Hydrolysis method
85. MnO can be reduced by using
(a) Cr (b) Fe (c) C (d) mg
86. Which one of the halogens shows only -1 oxidation state?
(a) F (b) Cl (c) Br (d) I
87. Which one of the vitamin only consists of metal ion?
(a) Vitamin B_6 (b) Vitamin B_{12} (c) Vitamin A (d) Vitamin C
88. The unit of rate constant for zero order reaction is?
(a) s^{-1} (b) $\text{mole lit}^{-1}\text{s}^{-1}$ (c) $\text{lit mole}^{-1}\text{s}^{-1}$ (d) $\text{lit}^{-1}\text{s}^{-1}$
89. The monomer of Teflon is?
(a) Ethene (b) Tetrafluoroethylene (c) Styrene (d) Caprolactum
90. The gold number of Gum Arabic colloid is?
(a) 0.1-0.15 (b) 25 (c) 0.08-0.10 (d) 0.005-1
91. Which is used as a refrigerant?
(a) Anisole (b) diethyl ether (c) phenol (d) methanal
92. pH of a saturated solution of $\text{Ca}(\text{OH})_2$ is 9. The solubility product (K_{sp}) of $\text{Ca}(\text{OH})_2$ is?
(a) 0.25×10^{-10} (b) 0.5×10^{-10} (c) 0.5×10^{-5} (d) 0.125×10^{-15}
93. While charging lead storage battery?
(a) PbSO_4 on anode is oxidized to PbO_2 (b) PbSO_4 on anode is reduced to Pb
(c) PbSO_4 on cathode is oxidized to Pb (d) PbSO_4 on cathode is reduced to Pb
94. Match the following?
(1) hypnotic (i) Acetophenone
(2) perspex (ii) Methanoic acid
(3) hypnone (iii) Ethanal
(4) treatment of gout (iv) Propanone
(a) 1-ii 2-iii 3-iv 4-i (b) 1-iv 2-iii 3-i 4-ii (c) 1-iii 2-iv 3-i 4-ii (d) 1-iii 2-i 3-iv 4-ii
95. The reactions


(a) Kolbe reaction (b) Williamson reaction (c) cyclic reaction (d) Wurtz reaction
96. The product formed by the reaction of an aldehyde with a primary amine?
(a) aromatic acid (b) ketone (c) carboxylic acid (d) Schiff's base
97. Insulin, a hormone, chemically is?
(a) Fat (b) carbohydrates (c) steroid (d) protein
98. In diborane, the number of electrons that accounts for banana bonds is?
(a) two (b) six (c) four (d) three
99. XeF_6 on complete hydrolysis produces
(a) XeO_2F_2 (b) XeO_2 (c) XeOF_4 (d) XeO_3
100. Resorcinol is
(a) 1,2-dihydroxy benzene (b) 1,3-dihydroxy benzene (c) 1,4-dihydroxy benzene (d) 1,2,3-trihydroxy benzene