

CHEMISTRY 4th

- Fischer Tropsch process is used for the manufacture of
 - synthetic petrol
 - thermosetting plastics
 - ethanol
 - benzene
- Brown ring test is used to detect
 - iodide
 - nitrate
 - iron
 - bromide
- Carbohydrates are used by body mainly
 - for obtaining vitamins
 - as source of energy
 - for all its developmental needs
 - for building muscles
- The polymer containing an amide group is
 - Nylon
 - Polythene
 - Polystyrene
 - Terylene
- The organic compound used as antiknock agent in petroleum is
 - $(C_2H_5)_4Pb$
 - TNT
 - CH_3MgBr
 - $(C_2H_5)_2Hg$
- Carbyl amine test is used in the detection of
 - aliphatic 2^o amine
 - aromatic 1^o amine
 - aliphatic 1^o amine
 - both aliphatic and aromatic 1^o amines
- Aromatic primary amine when treated with cold HNO_2 gives
 - benzyl alcohol
 - nitro benzene
 - benzene
 - diazonium salt
- Which of petroleum corresponds to kerosene oil?
 - $C_{15} - C_{18}$
 - $C_{10} - C_{12}$
 - $C_5 - C_9$
 - $C_1 - C_4$
- Aldehydes and ketones can be distinguished by
 - bromoform
 - solubility in water
 - Tollen's test
 - Mollich test
- Aspirin is obtained by the reaction of CH_3COCl with
 - phenol
 - benzoic Acid
 - benzaldehyde
 - salicylic acid
- Correct order of the size of iodine species is
 - $I > I^- > I_2$
 - $I^- > I > I_2$
 - $I_2 > I > I^-$
 - $I^- > I_2 > I$
- Nitrolin is a name given to
 - $CaCN_2 + C$
 - $Ca_3(PO_4)_2$
 - $Ca(CN)_2$
 - $Ca(NO_3)_2$
- The pair of compound, which cannot exist together, is
 - $NaHCO_3$ and $NaOH$
 - Na_2CO_3 and $NaOH$
 - Na_2CO_3 and $NaHCl_3$
 - $NaHCO_3$ and $NaCl$
- One of the constituents of the german silver is
 - Ag
 - Cu
 - Mg
 - Al
- Which compound is optically active?
 - 4-chloro, 1-hydroxy butane
 - 3^o butyl alcohol

- C. Secondary butyl amine D. n-butyl alcohol
16. Plumbo solvency implies dissolution of lead in
A. bases B. acids C. ordinary water D. CuSO_4 sol
17. Indigo dye belongs to
A. Vat dye B. Mordant dye C. Direct dye D. Ingrain dye
18. Dipole moment is shown by
A. 1, 4-dichloro benzene B. cis, 1, 2-dichloro ethane
C. trans, -1, 2-dichloro, 2-pentene D. trans, -1, 2-dichloro ether
19. When acetylene is passed through H_2SO_4 containing HgSO_4 , it gives
A. ethyl alcohol B. acetic Acid C. acetaldehyde D. ethylene
20. The compound, which does not leave any residue on heating, is
A. NaNO_3 B. NH_4NO_3 C. CuSO_4 D. AgNO_3
21. Which of the following alloys contain only Cu and Zn?
A. Bronze B. Brass C. Gun metal D. Bell metal
22. Gold number is a measure of the
A. stability of a colloidal system B. efficiency of a protective colloids
C. coagulating power of colloids D. size of the colloidal particle
23. Whose name is not associated with the development of Periodic Table?
A. Prout's B. Newlands C. Rutherford D. Loother Meyer
24. Polarisibility of halide ions increases in the order
A. F⁻, I⁻, Br⁻, Cl⁻ B. Cl⁻, Br⁻, I⁻, F⁻ C. I⁻, Br⁻, Cl⁻, F⁻ D. F⁻, Cl⁻, Br⁻, I⁻
25. Acetylene molecules contain
A. 5σ bond
B. 4σ bond and 1π bond
C. 3σ and 2π D. 3σ and 3π
26. The oxidation number of S in $\text{NO}_2\text{S}_4\text{O}_6$ is
A. -2.5 B. 2.5 C. -10 D. +10
27. In ideal gas equation, the dimension of R is
A. mole-atm/K B. litre/mole C. litre-atm/K/mole D. erg/K
28. An element X which occurs in the first short period has an outer electronic structure s^2p^1 . What are the formula and acid-base character of its oxides?
A. XO_3 , basic B. X_2O_3 , basic C. X_2O_3 , acidic D. XO_2 , acidic
29. The uncertainty in the position of a moving bullet of mass 10 gm is 10^{-5} m. Calculate the uncertainty in its velocity.
A. 5.2×10^{-28} m/sec B. 3.0×10^{-28} m/sec C. 5.2×10^{-22} m/sec D. 3×10^{-22} m/sec
30. Which is not paramagnetic?
A. O_2 B. O_2
+ C. O_2
2- D. O_2
-
31. What is wrongly stated about electrochemical series?
A. It is the representation of element in order of increasing or decreasing standard electrode reduction potential
B. It does not compare the relative reactivity of metals
C. It compares relative strengths of oxidising agents
D. H_2 is centrally placed element
32. Which pairs of ions are isoelectronic?
A. F⁻ and Cl⁻ B. F⁻ and O⁻ C. Na^+ and K^+ D. Na^+ and Mg^{+2}

33. The ionization energy of N_2 is more than that of O_2 because
A. of the extra stability of half filled orbitals in N_2
B. of the smaller size of N_2
C. the former contains less number of electrons
D. the former is less electronegative
34. Stainless steel is an alloy of iron with
A. 8% Cr, 5% Mn B. 10% Ni, 2% Mn, C. 2%Cr, 3%C D. 12%Cr, 1%N
35. Highest pH (14) is given by
A. 0.1 M H_2SO_4 B. 0.1 M NaOH C. 1 N NaOH D. 1 N HCl
36. N_2 atom has 3 unpaired electrons, because of
A. Hund's Rule B. Uncertainty Principle
C. Pauli's Exclusion Principle D. Aufbau's Rule
37. A group of atoms can function as a ligand only when
A. it is a small molecule B. it has an unshared electron pair
C. it is a negatively charged ion D. it is positively charged ion
38. When potassium dichromate crystals are heated with conc. HCl,
A. O_2 is evolved B. Chromyl chloride vapours are evolved
C. Cl_2 is evolved D. No reaction takes place
39. Aluminium is more reactive than Fe. But Al is less easily corroded than iron because
A. Al is noble metal B. Fe forms both mono and divalent ions
C. Al forms a protective oxide layer D. Fe undergoes reaction easily with H_2O
40. The ratio of C_v/C_p for inert gas is
A. 1.33 B. 1.66 C. 2.13 D. 1.99
41. The pH of blood is
A. less than 6 B. greater than 7 and less than 6
C. greater than 8 and less than 9 D. greater than 10
42. Sodium carbonate is manufactured by Solvay process. The recycled products are
A. CO_2 and NH_3 B. CO_2 and NH_4Cl C. NaCl D. $CaCl_2$ and CaO
43. Among the following which is the weakest base?
A. NaOH B. $Ca(OH)_2$ C. KOH D. $Zn(OH)_2$
44. The set of quantum number not applicable for an electron in an atom is
A. $n = 1, l = 1, m = 1, S = +1/2$ B. $n = 1, l = 0, m = 0, S = +1/2$
C. $n = 1, l = 0, m = 0, S = -1/2$ D. $n = 2, l = 0, m = 0, S = +1/2$
45. The conversion of $A \rightarrow B$ follows second order kinetics, tripling the concentration of A will increase the rate of formation of B by a factor of
A. 1/4 B. 2 C. 1/2 D. 9
46. Amino group in the benzene ring can be protected by
A. arylation B. sulfonation C. chlorination D. acetylation
47. The light radiation with discrete quantities of energy is called
A. electron B. photon C. positron D. meson
48. How many primary amines are possible for the formula $C_4H_{11}N$?
A. 1 B. 2 C. 3 D. 4
49. Base catalysed aldol condensation occurs with
A. propanaldehyde B. benzaldehyde
C. 2, 2-dimethyl propionaldehyde D. none of the above
50. A sample of chloroform before being used as an anaesthetic is tested by
A. Fehling's solution

- B. ammonical cuprous chloride
C. silver nitrate solution
D. silver nitrate solution after boiling with alcoholic potassium hydroxide
51. 1-chlorobutane on reaction with alcoholic potash gives
A. 1-butene B. 1-butanol C. 2-butene D. 2-butanol
52. The halogen which is most reactive in the halogenation of alkanes under sunlight is
A. chlorine B. bromine C. iodine D. fluorine
53. The highest b.p. is expected for
A. iso octane B. only ketone C. n-octane D. n-butane
54. The bond between carbon atom (1) and carbon atom (2) in compound $\text{N}\equiv\text{C}-\text{CH}=\text{CH}_2$ involves the hybrids as
A. sp_3 and sp_2 B. sp_3 and sp C. sp and sp_2 D. sp and sp
55. If two compounds have the same empirical formula but different molecular formula, they must have
A. different percentage composition B. different molecular weight
C. same viscosity D. same vapour density
56. Optical isomerism is shown by
A. Butanol-1 B. Butanol-2 C. Butene-1 D. Butene-2
57. The ion that cannot be precipitated by both HCl and H_2S is
A. Pb^{2+} B. Cu^+ C. Ag^+ D. Sn^{2+}
58. The aqueous solution of the following salts will be coloured in case of
A. $\text{Zn}(\text{NO}_3)_2$ B. LiNO_3 C. $\text{CO}(\text{NO}_3)_2$ D. ArCl_3
59. The highest degree of paramagnetism per mole of the compound at 25°C will be shown by
A. $\text{MnSO}_4 \cdot 7\text{H}_2\text{O}$ B. $\text{COCl}_2 \cdot 6\text{H}_2\text{O}$ C. $\text{FeCl}_3 \cdot 4\text{H}_2\text{O}$ D. $\text{NiCl}_2 \cdot 6\text{H}_2\text{O}$
60. Bromine can be liberated from KBr solution by the action of
A. iodine solution B. chlorine water C. sodium chloride D. potassium iodide
61. The ratio of the molar amounts of H_2S needed to precipitate the metal ions from 20 ml each of 1 M $\text{Cd}(\text{NO}_3)_2$ and 0.5 M CuSO_4 is
A. 2:1 B. 1:1 C. 1:2 D. indefinite
62. Among the following elements, which one has the highest value of first ionization potential?
A. Argon B. Barium C. Cesium D. Oxygen
63. Which of the following concepts best explains that o-nitrophenol is more volatile than p-nitrophenol?
A. Resonance B. Conjugation C. Hydrogen binding D. Covalent bonding
64. Which of the following statements is false?
A. Ionic compounds generally have low m.p. and b.p.
B. Carbon tetrachloride is a non-polar molecule
C. Anhydrous AlCl_3 is a covalent substance
D. A molecule represents a more stable state as compared to individual atoms
65. The chemical species having same number of electrons in the outermost and penultimate shell is
A. Al^{3+} B. O_2 C. Na^+ D. Cl^-
66. The solution was prepared by dissolving 0.0005 mol of $\text{Ba}(\text{OH})_2$ in 100 ml of the solution. If the base is assume to ionize completely, the pOH of the solution will be
A. 10 B. 12 C. 2 D. unpredictable
67. In which of the following neutralization will the enthalpy of neutralization be the smallest?

A. H_3PO_4 with NaOH B. NaOH and CH_3OOH

C. NaOH with HCl D. HCl with NH_4OH

68. The pH of 10^{-8} M NaOH will be

A. 6.96 B. 7.04 C. 12.0 D. 8

69. Gas deviates from ideal gas nature because molecules

A. attract each other B. contain covalent bond

C. show Brownian movement D. are colourless

70. Among the following reactions, the fastest one is

A. precipitation of silver chloride by mixing silver nitrate and sodium chloride solutions

B. burning of coal

C. rusting of iron in moist air

D. conversion of monoclinic sulphur to rhombic sulphur

71. When 5.0 g of BaCl_2 is dissolved in water to have 106 g of solution. The concentration of solution is

A. 5M B. 5gmL^{-1} C. 2.5 ppm D. 5 ppm

72. The unit of electrochemical equivalent is

A. coulomb/gram B. gm-ampere C. gm./coulomb D. gm-ampere $^{-1}$

73. Adsorption increases when

A. temperature remains constant B. temperature increases

C. temperature decreases D. none of the above

74. The number of hours required for a current of 3.0 A to decompose electrically 18 g of water is

A. 12 hours B. 24 hours C. 6 hours D. 18 hours

75. The number of electrons per second, which pass through a cross section of a copper wire carrying 10 $^{-16}$ A, is

A. 16×10^{-2} e/s B. 1.6×10^{-3} C. 60 e/s D. 625 e/s

76. 20 ml of HCl having certain normality neutralizes exactly 1.0 g CaCO_3 . The normality of acid is

A. 0.1 N B. 1.0 N C. 0.5 N D. 0.01 N

77. The alkali metal used in photoelectric cell is

A. Cs B. Fr C. K D. Rb

78. Calcium is extracted from

A. fused CaSO_4 B. fused $\text{Ca}_3(\text{PO}_4)_3$

C. fused CaCl_2 D. aqueous CaCl_2 solution

79. SbCl_3 upon hydrolysis yields

A. $\text{Sb}(\text{OH})_3$ B. SbO_2 C. Sb^{+3} D. None of the above

80. Which of the following trioxides can exist as monomer molecule?

A. SO_3 in gaseous state

B. TeO_3 C. SeO_3 in all states D. SO_3 in solid state

81. Pure chlorine is obtained

A. by heating PtCl_4

B. by heating a mixture of NaCl and MnO_2 with conc. H_2SO_4

C. by heating MnO_2 with HCl

D. by treating bleaching powder with HCl

82. Which of the following gases is used in very low temperature thermometers?

A. N_2 B. H_2 C. Ne D. He

83. Number of nucleons in D_2 molecule is

A. 4 B. 1 C. 2 D. 3

84. There is no s-s bond in

A. S₂O₇

2- B. S₂O₃

2- C. S₂O₄

2- D. S₂O₅

2-

85. The ratio of C_p/C_v for inert gas is

A. 1.66 B. 1.33 C. 1.99 D. 2.13

86. Electrolytic reduction method is used in the extraction of

A. highly electropositive elements B. transition metals

C. noble metals D. highly electronegative elements

87. The metal that is extracted from sea water is

A. Mg B. Au C. Ca D. Fe

88. The compound having blue colour is

A. HgSO₄ B. PbSO₄ C. CuSO₄.5H₂O D. CuSO₄

89. Which of the following is known as 'Wolframite'?

A. Na₂CO₃ + K₂CO₃ B. FeWO₄ C. SnO₂ D. 98% pure Zinc

90. Within each transition series, the oxidation state

A. first decreases till the middle of period and then increases

B. decreases regularly in moving from left to right

C. first increases till the middle of period and then decreases

D. none of the trend is correct

91. Which of the following properties of graphite and diamond are identical?

A. Density B. Crystal structure C. Atomic weight

D. Electrical

conductivity

92. Which of the following is an example of co-polymer?

A. PAN B. PTFE C. Polythene D. Buna-S

93. The reagent which forms crystalline osazone derivative when reacted with glucose is

A. Hydroxylamine B. Benedict solution C. Fehling solution D. Phenylhydrazine

94. To which class of dyes does phenolphthalein belong?

A. Phthalein dyes B. Triphenyl methane dyes

C. Nitro dyes D. Azo dyes

95. Peroxo linkage is present in

A. H₂S₂O₈ B. H₂SO₃ C. H₂S₂O₇ D. H₂SO₄

96. Tautomerism is exhibited by

A. RCH₂NO₂ B. R₃CNO₂ C. (CH₃)₂NH D. (CH₃)₃CNO

97. Latest technique for purification, isolation and separation of organic substances is

A. chromatography B. sublimation C. crystallization D. distillation

98. Lactic acid loses optical activity when reduced with red P and HI because

A. racemic mixture is formed B. spatial arrangement is changed

C. symmetry of the molecule is destroyed D. chirality of the molecule is destroyed

99. In order to convert aniline into chlorobenzene, the reagents needed are

A. Cl₂/AlCl₃ B. Cl₂/CCl₄

C. NaNO₂/HCl and

CuCl

D. CuCl

100. Which of the following alcohol on dehydration with conc. H₂SO₄ will yield 2-

butene?

A. 2-methyl-2-propanol

B. 2-methyl-2-butanol

C. 2-propanol D. Sec. Butyl alcohol

Solutions:

1 2 3 4 5 6 7 8 9 10

A B B A A D D B C D

11 12 13 14 15 16 17 18 19 20

B A A B C C A B C B

21 22 23 24 25 26 27 28 29 30

B B C D C B C C A C

31 32 33 34 35 36 37 38 39 40

B A A A C A B C B B

41 42 43 44 45 46 47 48 49 50

B B D A D D B D A C

51 52 53 54 55 56 57 58 59 60

A A C C B B C C A B

61 62 63 64 65 66 67 68 69 70

A A C A D C D B A A

71 72 73 74 75 76 77 78 79 80

D C C D D B C C B A

81 82 83 84 85 86 87 88 89 90

A D A A A A A C B C

91 92 93 94 95 96 97 98 99 100

C D D A A A A D C C