MERITSTORE

NEET - CHEMISTRY

45. What is the value of frequency at which electromagnetic wave must be propagated for the D-region of atmosphere to have a refractive index of 0.5. Electron density for D-region is 400 electrons/cc

a) 200 kHz b) 104.2 kHz
c) 208.4 kHz d) 312.6 kHz

46. In which of the following numbers all zeros are significant?

a) 0.500 b) 30.000 c) 0.00030 d) 0.0050

47. An organic compound contains 49.3% carbon, 6.84% hydrogen and its vapour density is 73. Molecular formula of the compound is

a) $C_3H_5O_2$ b) $C_4H_{10}O_2$ c) $C_6H_{10}O_4$ d) $C_3H_{10}O_2$

48. The number of orbitals present in the shell with $n = 4$ is

a) 8 b) 16 c) 18 d) 32

49. An orbital in which $n = 4$ and$l = 2$ is expressed by

a) $4s$ b) $4p$ c) $4d$ d) $5p$

50. Fluorine has low electron affinity than chlorine because of

a) Bigger radius of fluorine, less density
b) Smaller radius of fluorine, high density
c) Smaller radius of chlorine, high density
d) Smaller radius of chlorine, less density

51. The bond length of HCl molecule is 1.275 Å and its dipole moment is 1.03 D. The ionic character of the molecule (in per cent) (charge of the electron= 4.8×10^{-10}esu) is

a) 100 b) 67.3
c) 33.66 d) 16.83

52. sp^3d hybridisation results in

a) A square planar molecule b) An octahedron molecule
c) A trigonal bipyramidal molecule d) A tetrahedron molecule

53.

Gas	CO	CH_4	HCl	SO_2
Critical temp, T_c(K)	134	190	324	430

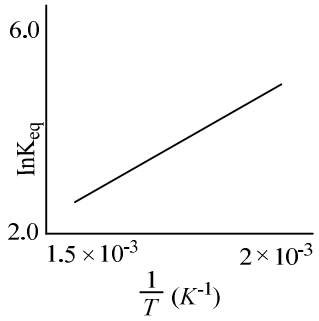
In the context of given values of critical temperature, the greater ease of liquefication is of

a) SO_2 b) HCl c) CH_4 d) CO

54. 2 moles of an ideal gas expanded isothermally and reversibly from 1 L to 10 L at 300 K. What is the enthalpy change?

a) 4.98 kJ b) 11.47 kJ
c) -11.47 kJ d) 0 kJ

55. A schematic plot of ln K_{eq} $versus$ inverse of temperature for a reaction is shown below



The reaction must be

a) Highly spontaneous at ordinary temperature
b) One with negligible enthalpy change
c) Endothermic
d) Exothermic

56. In qualitative analysis, in order to detect second group basic redical, H_2S gas is passed in the presence of dilute HCl to

a) Increase the dissociation of H_2S
b) Decrease the dissociation of salt solution
c) Decrease the dissociation of H_2S
d) Increase the dissociation of salt solution

57. Oxidation states of X, Y, Z are $+2, +5$ and -2 respectively. Formula of the compound formed by these wii be

a) X_2YZ_6 b) XY_2Z_6 c) XY_5 d) X_3YZ_4

58. Oxidation state of sulphur in $Na_2S_2O_3$ and $Na_2S_4O_6$

a) 4 and 6 b) 3 and 5
c) 2 and 2.5 d) 6 and 6

59. In which of the following reactions, H_2O_2 behaves as a reducing agent?

a) $Na_2SO_3(aq) + H_2O_2(aq) \rightarrow Na_2SO_4(aq) + H_2O(l)$
b) $PbO_2(s) + H_2O_2(aq) \rightarrow PbO(s) + H_2O(l) + O_2(g)$
c) $2KI(aq) + H_2O_2(aq) \rightarrow 2KOH(aq) + I_2(s)$
d) $KNO_2(aq) + H_2O_2(aq) \rightarrow KNO_3(aq) + H_2O(l)$

60. Which is not true in respect of berryllium chemistry?

a) Beryllium is amphoteric
b) It forms unusual carbide Be_2C
c) $Be(OH)_2$ is basic
d) Beryllium halides are electron deficient

61. Which is true for an element Rpresent in III group of the periodic table?

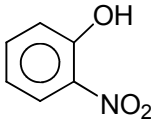
a) It has oxidation state of $+4$
b) It is gas at room temperature
c) It forms R_2O_3
d) It forms RX_2

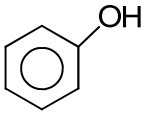
62. The correct order of increasing atomic radii, is

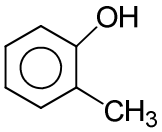
a) $B < Al < Ga$ b) $Ga < Al < B$

c) $Al < B < Ga$ d) $B < Ga < Al$

63. Which one of the following compound is most acidic?

a) $Cl - CH_2 - CH_2 - OH$ b) 

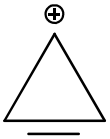
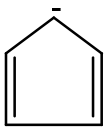
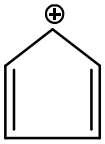
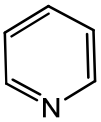
c) 

d) 

64. On mixing a certain alkane with chlorine and irradiating it with UV light, it form one monochloro alkane. The alkane could be

a) Neopentane b) Propane
c) Pentane d) Isopentane

65. Which of the following compounds is not aromatic?

a) 
b) 
c) 
d) 

66. Photochemical smog is caused by

a) CO b) CO_2 c) O_3 d) NO_2

67. A solid compound contains X, Y and Z atoms in a cubic lattice with X atom occupying the corners. Y atoms in the body centred positions and Z atoms at the centres of faces of the unit cell. What is the empirical formula of the compound?

a) XY_2Z_3 b) XYZ_3 c) $X_2Y_2Z_3$ d) X_8YZ_6

68. For a crystal system $a = b = c$ and $\alpha = \beta = \gamma \neq 90°$

a) Tetragonal b) Hexagonal
c) Rhombohedral d) Monoclinic

69. What happens when an egg is kept in saturated solution of NaCl after removing its hard shell in dilHCl?

a) Egg will swell
b) Egg will shrink
c) Egg will remain same
d) Egg will first shrink and then swell

70. On mixing, heptane and octane form an ideal solution. At 373 K, the vapour pressures of the two liquid components (heptanes and octane) are 105 kPa and 45kPa respectively. Vapour pressure of the solution obtained by mixing 25 g of heptanes and 35 g of octane will be (molar mass of heptanes = 100 g mol^{-1} and of octane = 114 gmol^{-1}).

a) 72.0 kPa b) 36.1 kPa
c) 96.2 kPa d) 144.5 kPa

71. The standard reduction potential for the half-cell having reaction

$NO_3^-(aq) + 2H^+(aq) + e^- \rightarrow NO_2(g) + H_2O$

Is 0.78 V. What will be the reduction potential of the half-cell is a neutral solution?

a) 0.78 V b) 0.89 V c) 0.36 V d) 0.59 V

72. Which of these does not influence the rate of reaction?
    a) Nature of the reactants
    b) Concentration of the reactants
    c) Temperature of the reaction
    d) Molecularity of the reaction

73. Consider the reaction $2A + B \rightarrow product$
    When concentration of B alone was doubled, the half-life did not change. When the concentration of A alone was doubled, the rate increased by two times. The unit of rate constant for this reaction is
    a) $Lmol^{-1}s^{-1}$ b) No unit
    c) $molL^{-1}s^{-1}$ d) s^{-1}

74. Associated colloid among the following is
    a) Enzyme b) Proteins c) Cellulose d) Sodium stearate

75. Flux is used to remove
    a) Acidic impurities
    b) Basic impurities
    c) All impurities from ores
    d) From ores

76. Which one of the following is correct?
    a) All minerals are ores
    b) All ores cannot be a mineral
    c) A mineral cannot be an ore
    d) All ores are minerals

77. The last orbit of argon would have electrons
    a) 2 b) 6 c) 8 d) 18

78. The atomic numbers of vanadium (V), chromium (Cr), manganese(Mn), and iron (Fe) are respectively 23, 24, 25 and 26 . Which one of these may be expected to have the highest second ionisation enthalpy?
    a) V b) Cr c) Mn d) Fe

79. Knowing that the chemistry of lanthanoids (Ln) is dominated by its +3 oxidation state, which of the following statements is incorrect?
    a) Because of the large size of the Ln (III) ions the bonding in its compounds is predominantly ionic in character.
    b) The ionic sizes of Ln (III) decrease in general with increasing atomic number.
    c) Ln (III) compounds are generally colourless.
    d) Ln(III) hydroxide are mainly basic in character.

80. The oxidation number of Fe in $K_4[Fe(CN)_6]$is
    a) +3 b) +4 c) +2 d) −2

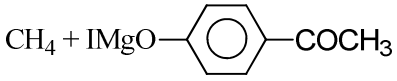
81. Which one of the isomers of cyclohexane hexachloride is strong pesticide?

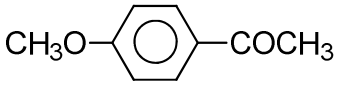
a) α b) β c) γ d) δ

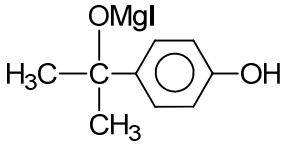
82. Lucas reagent is
a) Anhydrous $AlCl_3$ with concentrated HCl
b) Anhydrous $ZnCl_2$ and concentrated H_2SO_4
c) Anhydrous $ZnCl_2$ and concentrated HCl
d) Anhydrous $CaCl_2$ and concentrated HCl

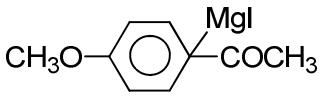
83. Tertiary alcohols (3°) having at least four carbon atoms upon drastic oxidation yield carboxylic acid with
a) One carbon atom less
b) Two carbon atoms less
c) Three carbon atoms less
d) All the above three options are correct

84. The reaction of 1 mole each of *p*-hydroxyacetophenone and methyl magnesium iodide will give

a) 

b) 

c) 

d) 

85. Which of the following cannot be used for following conversion?
$CH_3CN \longrightarrow CH_3CH_2NH_2$
a) Pt/H_2 b) $LiAlH_4$
c) Na/C_2H_5OH d) $SnCl_2/HCl$

86. $A \xrightarrow{H_2NOH} B \xrightarrow{\text{Reduction}} C \xrightarrow{NOCl} CH_3CH_2Cl$
In the above sequence *A* and *C* are
a) Methanal, methyl amine
b) Acetone, ethaneamine
c) Ethanal, diamethyl amine
d) Acetaldehyde, ethyl amine

87. The enzyme pepsin hydrolyses
a) Proteins to amino acids
b) Fats to fatty acids
c) Glucose to ethyl alcohol
d) Poloysaccharides to monosaccharides

88. Which of the following is used in vulcanization of rubber?
a) SF_6 b) CF_4 c) Cl_2F_2 d) C_2F_2

89. Dacron is polymer is
a) Glycol and formaldehyde

b) Glycol and phenol
c) Glycol and phthalic acid
d) Glycol and terephthalic acid

90. Hippuric acid has the formula
a) $CH_3CONHCH_2COOH$
b) $C_6H_5CONHCH_2COOH$
c) $C_6H_5NHCOOH$
d) $NH_2CONHCOOH$