

- 41. Which statement is true about electron affinity?
  - A. The value of electron affinity is always positive
  - B. The value of electron affinity is always negative
  - C. The value of first electron affinity is always positive
  - D. The value of first electron affinity is always negative
- 42. The bond which is based on attractive forces between oppositely charged ion is:
  - A. Covalent bond
  - B. Dative bond
  - C. Ionic bond
  - D. Metallic bond
- 43. Which statement is incorrect regarding a chemical bond?
  - A. Bond is formed by the overlapping of half-filled orbitals
  - B. Bond is formed by the attraction of positive and negative ions
  - C. Bond is formed by the overlapping of "s" orbital is strong
  - D. Bond formed by the large sized atoms is strong
- 44. The carbonates of alkali metals are soluble in water except
  - A.  $K_2CO_3$
  - B.  $Li_2CO_3$
  - C.  $Na_2CO_3$
  - D.  $Rb_2CO_3$

06408

- 45. The nitrides of alkaline earth metals hydrolyse with water to form:
  - A.  $NH_3$
  - B.  $H_2$
  - C.  $N_2$
  - D.  $NO$
- 46. The flame colour of Ca in flame test is:
  - A. Orange red
  - B. Golden yellow
  - C. Red
  - D. Pink
- 47. Which of the following is the most stable metal carbonate?
  - A.  $BaCO_3$
  - B.  $MgCO_3$
  - C.  $CaCO_3$
  - D.  $SrCO_3$
- 48. The binding energy of transition metal increase upto group:
  - A. 8B
  - B. 7B
  - C. 9B
  - D. 10B
- 49. Isomerism due to shifting of proton from one atom to another in a same molecule is known as:
  - A. Metamerism
  - B. Tautomerism
  - C. Position
  - D. Functional
- 50. Iso-Butyl alcohol has following carbon attached to hydroxy group:
  - A. Tertiary
  - B. Secondary
  - C. Quaternary
  - D. Primary
- 51. Oxidation of alcohol gives:
  - A. Amine
  - B. Alkene
  - C. Aldehyde
  - D. Alkyne

06408

- 52. Butanone on oxidation with  $K_2Cr_2O_7 / H_2SO_4$  forms:
  - A. Acetic acid
  - B. Acetic acid & Ethane
  - C. Methane & Propanoic acid
  - D. Propanoic acid & Methanoic acid
- 53. Hydrolysis of Nitriles produces:
  - A. Carboxylic acid
  - B. Aldehydes
  - C. Ketones
  - D. Esters
- 54. Acetic anhydride is a product of acetic acid, as a result of the following reaction:
  - A. Reduction
  - B. Oxidation
  - C. Esterification
  - D. Esterification
- 55. Which of the following enzyme is raised in rickets?
  - A. Lactic dehydrogenase
  - B. LDH-I
  - C. Phosphatase
  - D. Alkaline phosphatase
- 56. For a gaseous reaction, the increase in pressure will shift the equilibrium in a direction:
  - A. Decreased concentration
  - B. Increased concentration
  - C. Decreased volume
  - D. Increased volume
- 57. Acidic buffer consist of:
  - A. Strong acid and salt of a weak base
  - B. Weak acid and salt of a strong base
  - C. Strong acid and salt of a strong base
  - D. Weak acid and salt with a strong base
- 58. The pH of human blood is maintained between:
  - A. 7.35 to 7.45
  - B. 7.35 to 7.65
  - C. 7.50 to 7.25
  - D. 7.85 to 7.95

06408

- 59. The buffer solution is not formed for:
  - A.  $NH_4OH + NH_4Cl$
  - B.  $CH_3COOH + CH_3COONa$
  - C.  $C_6H_5COOH + C_6H_5COONa$
  - D.  $HCl + NaCl$
- 60. In the reaction  $H_2 + CO_2 \rightleftharpoons H_2O + CO$  the decrease in the concentration of  $CO_2$  will shift equilibrium:
  - A. Towards left
  - B. Towards right
  - C. Nothing happens to the equilibrium
  - D. Equilibrium will shift towards the reactants
- 61. At equilibrium the concentration of reactants and product become:
  - A. Zero
  - B. Constant
  - C. Infinite
  - D. None
- 62. The affect of temperature on the rate of a reaction is given by:
  - A. Henderson's equation
  - B. General gas equation
  - C. Arrhenius equation
  - D. Vander Waal's equation
- 63. In a reversible reaction, catalyst lowers the activation energy of the:
  - A. Forward reaction
  - B. Reverse reaction
  - C. Forward as well as reverse reaction
  - D. Forward reaction but increases that of the reverse reaction
- 64. The rate of reaction:
  - A. Increases as the reaction proceeds
  - B. Decreases as the reaction proceeds
  - C. Remains the same as the reaction proceeds
  - D. May decrease or increase as the reaction proceeds
- 65. 0.5 molar solution of NaOH contains:
  - A. 40g NaOH in 100g solution
  - B. 80g NaOH in 100g solution
  - C. 10g NaOH in 100g solution
  - D. 10g NaOH in 100g water

06408

- 66. The breakdown of a substance with current is:
  - A. Thermolysis
  - B. Catalysis
  - C. Electrolysis
  - D. Photolysis
- 67. Which of the following is balanced redox equation?
  - A.  $Na + Fe^{2+} \rightarrow Na^{+} + Fe$
  - B.  $Zn + Ag^{+} \rightarrow Zn^{2+} + Ag$
  - C.  $3Na + Fe^{2+} \rightarrow 3Na^{+} + Fe$
  - D.  $2Zn + Ag^{+} \rightarrow 2Zn^{2+} + Ag$
- 68. Stronger is the oxidizing agent, greater is the:
  - A. Oxidation potential
  - B. Reduction potential
  - C. Redox potential
  - D. EMF of cell
- 69. The bonding in Sodium (Na) is:
  - A. Metallic
  - B. Ionic
  - C. Covalent
  - D. Co-ordinate Covalent
- 70. Which of the following Halogens molecules has maximum bond energy?
  - A. F-F
  - B. Cl-Cl
  - C. Br-Br
  - D. I-I
- 71. Half atmospheric pressure is:
  - A. 400 torr
  - B. 50622 Pa
  - C. 101.3 Pa
  - D. 5.5 pounds
- 72. The values of S.T.P for a mole of any gas is:
  - A. 273.16 K, 101.3 kPa
  - B. 0°C, 101.3 kPa
  - C. 273.15 K, 101.3 kPa
  - D. 273.15 K, 101.3 Pa

06408

- 73. The expression  $PV = nRT$  represents the:
  - A. Dalton's law
  - B. Avogadro's law
  - C. General gas equation
  - D. Vander Waal's equation
- 74. Pressure remaining constant, at which temperature volume of gas will become twice to the volume at 0°C?
  - A. 546 °C
  - B. 200 °C
  - C. 546 °K
  - D. 273 °K
- 75. A graph between volume and temperature gives a straight line which cuts the temperature axis at:
  - A. 0°C
  - B. 273°C
  - C. 546°C
  - D. -273°C
- 76. Which of the following is not a cause for effusion of gases?
  - A. Movement of particles through small opening
  - B. Movement of particles from high pressure to low pressure
  - C. Movement of particles due to escaping tendency one by one
  - D. Movement of particles due to collision among themselves
- 77. Upon which factor vapour pressure is independent:
  - A. Temperature
  - B. Intermolecular forces
  - C. Density of liquid
  - D. Surface area of liquid
- 78. Solid water is expanded \_\_\_\_\_ times when it is compared with same volume of liquid water:
  - A. 9
  - B. 5
  - C. 6
  - D. 2
- 79. Molar heat of vaporization is the amount of heat required to convert one mole of:
  - A. A liquid into its vapours at its boiling point
  - B. Liquid into its vapours
  - C. Solids into vapours
  - D. Solid into liquid at its boiling point

06408

- 80. At transition point of crystalline solid, substance exists:
  - A. In one solid geometrical form
  - B. In solid and liquid state
  - C. In dynamic equilibrium between two crystalline forms
  - D. In one solid geometrical form only
- 81. Some substances lack definite heats of fusion. These substances are:
  - A. Isomorphs
  - B. Polymorphs
  - C. Amorphous solids
  - D. Crystalline solids
- 82. Thermal conductivity of metals is due to:
  - A. Layered structure of metals
  - B. Freely moving electrons
  - C. Loosely held metal atoms
  - D. Vibrational movement of metals
- 83. Ice floats on the surface of water due to:
  - A. Larger bond length
  - B. Cubic structure
  - C. Weak intermolecular forces
  - D. Large spaces in the structure of ice
- 84. In a reversible reaction, which parameter would not affect at equilibrium?
  - A. Temperature
  - B. Pressure
  - C. Volume
  - D. Catalyst
- 85. By which of the following factors equilibrium state is attained earlier?
  - A. Temperature
  - B. Pressure
  - C. Concentration
  - D. Catalyst

06408

- 86. Many elements have fractional atomic masses. This is because:
  - A. Atomic masses are average masses of isotopes
  - B. Atomic masses are average masses of isotopes
  - C. Atomic masses are average masses of isotopes proportional to their abundance
  - D. Atomic masses are average masses of isotopes
- 87. Mass of 1 molecule of  $O_2$  is:
  - A.  $6.02 \times 10^{23} g / 32$
  - B.  $32 / 6.02 \times 10^{23} g$
  - C. 32g
  - D. 0.32g
- 88. The number of moles of  $CO_2$  which contain 8.0 g of oxygen are:
  - A. 1.0
  - B. 4.50
  - C. 0.50
  - D. 0.25
- 89. Identify the correct option for the empirical formula for both compounds:
  - A.  $H_2O$  &  $H_2C_2O_4$
  - B.  $H_2O$  &  $H_2C_4O_8$
  - C.  $H_2O$  &  $H_2SO_4$
  - D.  $C_2H_2O_2$  &  $CH_3COOH$
- 90. 1 mole of any substance contains \_\_\_\_\_ particles:
  - A.  $6.02 \times 10^{23}$
  - B.  $6.02 \times 10^{24}$
  - C.  $6.02 \times 10^{22}$
  - D.  $3.01 \times 10^{23}$
- 91. What are the Avogadro's number of particles in 0.25 moles of  $CO_2$ ?
  - A.  $6.022 \times 10^{23}$
  - B.  $1.505 \times 10^{23}$
  - C.  $2.00 \times 10^{23}$
  - D.  $1.505 \times 10^{24}$
- 92. The charge on one kg of electron is:
  - A.  $1.7588 \times 10^{11} C$
  - B.  $1.65 \times 10^{18} C$
  - C.  $9.1096 \times 10^{-31} C$
  - D.  $9.1 \times 10^{18} C$

06408

- 93. Which of the following fundamental particles have same mass/kg?
  - A. Electron, neutrino
  - B. Electron, proton
  - C. Proton, neutrino
  - D. Neutron, proton
- 94. The lightest positive rays obtained is from:
  - A. Hydrogen gas
  - B. Helium
  - C. Neon
  - D. Air
- 95. The amount of energy associated with quantum of radiation is directly proportional to:
  - A. Photon
  - B. Wavelength
  - C. Frequency
  - D. Velocity
- 96. X-rays are defined as:
  - A. Electromagnetic radiations of high mass number
  - B. Electromagnetic radiations of very high frequency
  - C. Electromagnetic radiations of high wavelength
  - D. Electromagnetic radiations of high energy
- 97. Which of the following orbital will be filled first than 4p?
  - A. 4s
  - B. 2p
  - C. 3d
  - D. 1s
- 98. Maximum \_\_\_\_\_ electrons can be placed in one orbital:
  - A. 1
  - B. 2
  - C. 3
  - D. 4
- 99. Mass of electron in a.m.u is:
  - A. 1.0073
  - B. 1.0087
  - C.  $5.485 \times 10^{-4}$
  - D.  $9.1 \times 10^{-31}$

06408

- 100. Starting point of Kelvin scale is:
  - A. 0K
  - B. -400 K
  - C. -273 K
  - D. -273.15 K