Quiz: Chemistry set 16

Q751: The de Broglie wavelength of a particle is equal to the wavelength of a photon of energy E when the particle has momentum:

A) E/c
B) E
C) E/c2
D) hc/E

Q752: For a zero order reaction, the plot of concentration versus time is:

A) Linear with positive slope
B) Linear with negative slope
C) Exponential
D) Hyperbolic

Q753: The maximum number of electrons that can have n = 6 and l = 2 is:

A) 6
B) 10
C) 14
D) 18

Q754: The pH of a solution formed by mixing equal volumes of 0.01 M HCl and 0.01 M NaOH is:

A) 2
B) 7
C) 12
D) 5

Q755: Which colligative property is directly proportional to temperature at constant concentration?

A) Relative lowering of vapour pressure
B) Elevation of boiling point
C) Depression of freezing point
D) Osmotic pressure

Q756: The correct order of increasing ionization enthalpy is:

A) B < Be < C
B) Be < B < C
C) C < B < Be
D) B < C < Be

Q757: The hybridization of the central atom in XeF2 is:

A) sp
B) sp2
C) sp3
D) sp3d

Q758: Which of the following complexes is paramagnetic?

A) [Ni(CN)4]2-
B) [Zn(NH3)4]2+
C) [Fe(H2O)6]2+
D) [PtCl4]2-

Q759: The SI unit of Helmholtz free energy is:

A) J
B) J mol-1
C) J K-1
D) J mol-1 K-1

Q760: Which reagent converts aldehydes to primary alcohols?

A) KMnO4
B) PCC
C) NaBH4
D) HNO3

Q761: The total number of sigma bonds in cyclopropane is:

A) 6
B) 9
C) 12
D) 15

Q762: Which compound has maximum covalent character?

A) NaF
B) MgO
C) AlCl3
D) CaCl2

Q763: The oxidation state of sulphur in Na2S2O8 is:

A) +5
B) +6
C) +7
D) Average +6

Q764: The bond angle in BF3 molecule is:

A) 109.5 deg
B) 120 deg
C) 107 deg
D) 90 deg

Q765: Which gas shows minimum deviation from ideal behavior at high temperature and low pressure?

A) NH3
B) CO2
C) H2
D) SO2

Q766: The molarity of a solution containing 2.5 g NaCl in 500 mL solution is:

A) 0.05 M
B) 0.085 M
C) 0.1 M
D) 0.2 M

Q767: Which amine is least basic in gaseous phase?

A) NH3
B) CH3NH2
C) (CH3)2NH
D) (CH3)3N

Q768: The coordination number of Ni in [Ni(en)3]2+ is:

A) 3
B) 4
C) 6
D) 8

Q769: Which of the following is an extensive property?

A) Density
B) Temperature
C) Pressure
D) Entropy

Q770: The value of activation energy of a reaction can be obtained from:

A) Rate law
B) Arrhenius equation
C) Equilibrium constant
D) Stoichiometry

Q771: Which compound is commonly used as an antacid?

A) NaCl
B) MgCO3
C) NH4Cl
D) HNO3

Q772: The total number of valence electrons in IO3- ion is:

A) 24
B) 26
C) 28
D) 30

Q773: Which of the following is the strongest oxidizing agent?

A) Cl2
B) KMnO4
C) O3
D) F2

Q774: The time required for 99.9% completion of a first order reaction is approximately:

A) 5 t1/2
B) 6.6 t1/2
C) 10 t1/2
D) 3.3 t1/2

Q775: Which of the following is an example of autocatalysis?

A) Ni in hydrogenation
B) Mn2+ in KMnO4 oxidation
C) H+ in ester hydrolysis
D) V2O5 in contact process

Q776: The correct order of bond strength is:

A) C-C < C=C < C===C
B) C===C < C=C < C-C
C) C=C < C-C < C===C
D) C-C < C===C < C=C

Q777: Which molecule has zero dipole moment?

A) NH3
B) H2O
C) CO2
D) SO2

Q778: A buffer solution resists change in pH on addition of:

A) Strong acid only
B) Strong base only
C) Small amounts of acid or base
D) Large amounts of acid

Q779: Which of the following is a non-electrolyte?

A) NaCl
B) KNO3
C) HCl
D) Sucrose

Q780: The IUPAC name of CH3-CH(OH)-CH3 is:

A) Propan-1-ol
B) Propan-2-ol
C) Ethanol
D) Butan-2-ol

Q781: Which halogen shows maximum electron affinity?

A) F
B) Cl
C) Br
D) I

Q782: The geometry of XeF6 is:

A) Octahedral
B) Distorted octahedral
C) Square pyramidal
D) Trigonal bipyramidal

Q783: Which of the following is a state function?

A) Work
B) Heat
C) Entropy
D) Path

Q784: The number of pi bonds in but-2-ene is:

A) 0
B) 1
C) 2
D) 3

Q785: Which compound shows optical isomerism?

A) But-1-ene
B) But-2-ene
C) 2-Butanol
D) Ethane

Q786: The SI unit of specific conductivity is:

A) S m-1
B) S m2 mol-1
C) Ohm m
D) Ohm-1 m2

Q787: Which metal is extracted by electrolysis of molten salt?

A) Fe
B) Cu
C) Al
D) Zn

Q788: The rate law for a second order reaction is:

A) Rate = k
B) Rate = k[A]
C) Rate = k[A]2
D) Rate = k/[A]

Q789: Which acid is weakest in aqueous solution?

A) HF
B) HCl
C) HBr
D) HI

Q790: The oxidation state of nitrogen in NH_4^+ ion is:

A) -3
B) -1
C) +1
D) +3

Q791: Which compound gives positive Fehling's test?

A) Acetone
B) Glucose
C) Benzaldehyde
D) Acetic acid

Q792: The standard enthalpy of formation of $H_2(g)$ is:

A) -286 kJ mol-1
B) 0
C) +286 kJ mol-1
D) -393 kJ mol-1

Q793: Which ion has the least hydration enthalpy?

A) Li^+
B) Na^+
C) K^+
D) Cs^+

Q794: The reagent used to oxidize alcohols to aldehydes without further oxidation is:

A) $KMnO_4$
B) $K_2Cr_2O_7$
C) PCC
D) HNO_3

Q795: Which ion is diamagnetic?

A) Fe^{2+}
B) Mn^{2+}
C) Zn^{2+}
D) Cu^{2+}

Q796: The correct order of thermal stability of hydroxides is:

A) LiOH < NaOH < KOH
B) KOH < NaOH < LiOH
C) NaOH < KOH < LiOH
D) LiOH < KOH < NaOH

Q797: Which ligand is ambidentate?

A) NH_3
B) H_2O
C) NO_2^-
D) en

Q798: The value of gas constant R in erg mol-1 K-1 is approximately:

A) 8.314 x 107
B) 8.314
C) 1.987
D) 0.0821

Q799: Which acid is strongest in aqueous solution?

A) HNO3
B) H2SO4
C) HClO4
D) CH3COOH

Q800: For an endothermic reaction, the sign of DeltaH is:

A) Positive
B) Negative
C) Zero
D) Depends on catalyst