Quiz: Chemistry set 3

Q101: The de Broglie wavelength of a particle increases when its:

A) Mass increases
B) Velocity increases
C) Momentum decreases
D) Kinetic energy increases

Q102: For a reaction with activation energy 50 kJ mol-1, the rate increases most significantly with:

A) Decrease in temperature
B) Addition of catalyst
C) Increase in pressure
D) Increase in concentration

Q103: The number of nodal planes in a 3p orbital is:

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

Q104: The pH of a solution having [H+] = 3.16 x 10-5 M is:

A) 4.5
B) 5.0
C) 3.5
D) 4.0

Q105: Which colligative property is most suitable for determination of molar mass?

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

Q106: The correct order of atomic radii is:

A) Na > Mg > Al
B) Al > Mg > Na
C) Mg > Na > Al
D) Na > Al > Mg

Q107: The hybridization of central atom in XeF2 is:

A) sp
B) sp2
C) sp3
D) dsp3

Q108: Which of the following complexes is diamagnetic?

A) [Fe(H2O)6]2+
B) [CoF6]3-
C) [Ni(CN)4]2-
D) [MnCl6]4-

Q109: The unit of Gibbs free energy is:

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

Q110: Which reagent is used to reduce nitrobenzene to aniline?

A) KMnO4
B) Sn/HCl
C) NaOH
D) HNO3

Q111: The total number of sigma bonds in cyclohexane is:

A) 12
B) 18
C) 24
D) 30

Q112: Which of the following shows maximum ionic character?

A) LiCl
B) NaCl
C) KCl
D) CsCl

Q113: The oxidation state of Mn in KMnO4 is:

A) +4
B) +5
C) +6
D) +7

Q114: The bond angle in CO2 molecule is:

A) 109.5 deg
B) 120 deg
C) 180 deg
D) 104.5 deg

Q115: Which gas has maximum compressibility factor deviation?

A) He
B) H2
C) CO2
D) N2

Q116: The number of moles present in 11.2 L of a gas at STP is:

A) 0.25
B) 0.5
C) 1
D) 2

Q117: Which of the following is strongest acid?

A) CH3COOH
B) CCl3COOH
C) HCOOH
D) C6H5COOH

Q118: The coordination number of central metal in [Fe(C2O4)3]3- is:

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

Q119: Which of the following is an extensive property?

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

Q120: The rate constant of a first order reaction has units of:

A) mol L-1 s-1
B) s-1
C) L mol-1 s-1
D) dimensionless

Q121: Which compound acts as both oxidizing and reducing agent?

A) KMnO4
B) H2O2
C) O3
D) F2

Q122: The correct increasing order of bond dissociation energy is:

A) I2 < Br2 < Cl2 < F2
B) F2 < Cl2 < Br2 < I2
C) Cl2 < Br2 < I2 < F2
D) Br2 < I2 < Cl2 < F2

Q123: Which oxide is acidic in nature?

A) Na2O
B) MgO
C) Al2O3
D) SO3

Q124: The geometry of [Pt(NH3)2Cl2] is:

A) Tetrahedral
B) Square planar
C) Octahedral
D) Trigonal planar

Q125: Which hydrocarbon undergoes addition reaction most readily?

A) Ethane
B) Ethene
C) Ethyne
D) Benzene

Q126: The value of equilibrium constant K for a reaction with DeltaG deg = 0 is:

A) 0
B) 1
C) infinity
D) Depends on temperature

Q127: Which element shows maximum first ionization enthalpy?

A) B
B) C
C) N
D) O

Q128: The shape of NH4+ ion is:

A) Trigonal pyramidal
B) Tetrahedral
C) Square planar
D) Linear

Q129: Which of the following is strongest ligand?

A) F-
B) H2O
C) NH3
D) CN-

Q130: The unit of molality is:

A) mol L-1
B) mol kg-1
C) kg mol-1
D) dimensionless

Q131: Which compound gives positive Fehling test?

A) Benzaldehyde
B) Acetone
C) Formaldehyde
D) Benzophenone

Q132: The maximum oxidation state shown by chromium is:

A) +4
B) +5
C) +6
D) +7

Q133: Which of the following has highest melting point?

A) NaCl
B) MgO
C) AlCl3
D) KCl

Q134: The number of unpaired electrons in Fe2+ ion is:

A) 2
B) 4
C) 5
D) 6

Q135: Which of the following is a greenhouse gas?

A) N2
B) O2
C) CH4
D) He

Q136: The reagent used to identify double bond is:

A) FeCl3
B) Br2/CCl4
C) NaOH
D) Tollen’s reagent

Q137: Which salt shows acidic nature in aqueous solution?

A) Na2CO3
B) NH4Cl
C) NaCl
D) KNO3

Q138: The standard state pressure is:

A) 1 atm
B) 1 bar
C) 760 mm Hg
D) 10 atm

Q139: Which of the following is not a buffer solution?

A) CH3COOH + CH3COONa
B) NH4OH + NH4Cl
C) HCl + NaCl
D) H2CO3 + NaHCO3

Q140: The correct order of basicity in gas phase is:

A) NH3 > PH3 > AsH3
B) PH3 > AsH3 > NH3
C) AsH3 > PH3 > NH3
D) NH3 > AsH3 > PH3

Q141: The number of pi bonds in benzene is:

A) 2
B) 3
C) 4
D) 6

Q142: Which metal is extracted by carbon reduction?

A) Al
B) Na
C) Fe
D) Mg

Q143: The unit of rate of reaction is:

A) mol L-1
B) mol L-1 s-1
C) s-1
D) L mol-1 s-1

Q144: Which compound exhibits tautomerism?

A) Ethanol
B) Acetaldehyde
C) Ethane
D) Chloroform

Q145: The correct order of electron gain enthalpy is:

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

Q146: Which of the following is diamagnetic?

A) O2
B) NO
C) CO
D) NO2

Q147: The coordination number of Ag in [Ag(NH3)2]+ is:

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

Q148: Which law explains lowering of vapour pressure?

A) Dalton’s law
B) Raoult’s law
C) Henry’s law
D) Boyle’s law

Q149: The correct order of reactivity of alkyl halides in SN2 reaction is:

A) 3 deg > 2 deg > 1 deg
B) 1 deg > 2 deg > 3 deg
C) 2 deg > 1 deg > 3 deg
D) 3 deg > 1 deg > 2 deg

Q150: The enthalpy change of an endothermic reaction is:

A) Positive
B) Negative
C) Zero
D) Constant