Quiz: Chemistry set 19

Q901: The de Broglie wavelength of a particle is inversely proportional to its:

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

Q902: For a first order reaction, the half-life is independent of:

A) Initial concentration
B) Temperature
C) Rate constant
D) Nature of reaction

Q903: The maximum number of electrons that can have n = 3 and l = 1 is:

A) 2
B) 4
C) 6
D) 8

Q904: The pH of a solution containing 1 x 10-3 M HCl is:

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

Q905: Which colligative property is used to determine molar mass of macromolecules?

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

Q906: The correct order of increasing atomic radius is:

A) F < O < N < C
B) C < N < O < F
C) N < O < F < C
D) F < N < O < C

Q907: The hybridization of the central atom in PCl5 (gas phase) is:

A) sp3
B) sp3d
C) sp3d2
D) d2sp3

Q908: Which of the following complexes is diamagnetic?

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

D) [Mn(H2O)6]2+

Q909: The SI unit of enthalpy change is:

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

Q910: Which reagent converts carboxylic acids into acid chlorides?

A) PCl5
B) NaBH4
C) LiAlH4
D) KMnO4

Q911: The total number of sigma bonds in methane is:

A) 2
B) 3
C) 4
D) 5

Q912: Which compound has maximum covalent character?

A) NaF
B) NaCl
C) NaBr
D) NaI

Q913: The oxidation state of sulphur in SO2 is:

A) +2
B) +4
C) +6
D) 0

Q914: The bond angle in NH3 molecule is approximately:

A) 109.5 deg
B) 107 deg
C) 104.5 deg
D) 120 deg

Q915: Which gas deviates least from ideal behavior?

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

Q916: The molarity of a solution containing 4 g NaOH in 250 mL solution is:

A) 0.2 M
B) 0.4 M
C) 0.1 M
D) 0.8 M

Q917: Which amine is most basic in aqueous solution?

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

Q918: The coordination number of Co in [Co(NH3)6]3+ is:

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

Q919: Which of the following is an intensive property?

A) Mass
B) Volume
C) Enthalpy
D) Pressure

Q920: The Arrhenius equation relates rate constant with:

A) Concentration
B) Temperature
C) Time
D) Pressure

Q921: Which compound is used as an antacid?

A) NaCl
B) Mg(OH)2
C) NH4Cl
D) HCl

Q922: The total number of valence electrons in NO3- ion is:

A) 18
B) 22
C) 24
D) 26

Q923: Which of the following is the strongest oxidizing agent?

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

Q924: The time required for 75% completion of a first order reaction is:

A) t1/2
B) 2t1/2
C) 3t1/2
D) 4t1/2

Q925: Which is an example of heterogeneous catalysis?

A) H+ in ester hydrolysis
B) Ni in hydrogenation
C) I- in H2O2 decomposition
D) NO in SO2 oxidation

Q926: The correct order of bond length 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

Q927: Which molecule has zero dipole moment?

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

Q928: A buffer solution is most effective when:

A) pH = 7
B) pH = pKa
C) Only salt is present
D) Only acid is present

Q929: Which of the following is a non-electrolyte?

A) NaCl
B) HCl
C) KOH
D) Glucose

Q930: The IUPAC name of CH3-CH2-CHO is:

A) Propanal
B) Ethanal
C) Propanone
D) Butanal

Q931: Which halogen has maximum electron affinity?

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

Q932: The geometry of XeF4 is:

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

Q933: Which of the following is a state function?

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

Q934: The number of pi bonds in ethyne is:

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

Q935: Which compound shows optical isomerism?

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

Q936: The SI unit of molar conductivity is:

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

Q937: Which metal is extracted by electrolytic reduction?

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

Q938: The rate law for a zero order reaction is:

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

Q939: Which acid is weakest in aqueous solution?

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

Q940: The oxidation state of nitrogen in NH4+ ion is:

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

Q941: Which compound gives positive Tollens test?

A) Acetone
B) Formaldehyde
C) Benzophenone
D) Acetic acid

Q942: The standard enthalpy of formation of H2(g) is:

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

Q943: Which ion has maximum hydration enthalpy?

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

Q944: The reagent used to oxidize primary alcohols to aldehydes is:

A) KMnO4
B) K2Cr2O7
C) PCC
D) HNO3

Q945: Which ion is diamagnetic?

A) Fe2+
B) Mn2+
C) Zn2+
D) Cu2+

Q946: The correct order of thermal stability of nitrates is:

A) LiNO3 < NaNO3 < KNO3
B) KNO3 < NaNO3 < LiNO3
C) NaNO3 < KNO3 < LiNO3
D) LiNO3 < KNO3 < NaNO3

Q947: Which ligand is ambidentate?

A) NH3
B) H2O
C) NO2-
D) en

Q948: The value of gas constant R in cal mol-1 K-1 is:

A) 0.0821
B) 8.314
C) 1.987
D) 2.303

Q949: Which acid is strongest in aqueous solution?

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

Q950: For an exothermic reaction, the sign of DeltaH is:

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