Quiz: Chemistry set 15

Q701: The de Broglie wavelength of an electron accelerated through potential V varies as:

A) 1/V
B) 1/sqrtV
C) sqrtV
D) V

Q702: For a second order reaction A -> products, the integrated rate law is:

A) ln[A] = -kt + ln[A]0
B) 1/[A] = kt + 1/[A]0
C) [A] = -kt + [A]0
D) t1/2 = 0.693/k

Q703: The number of electrons present in the 4p subshell is at maximum:

A) 2
B) 4
C) 6
D) 10

Q704: The pH of a solution having [H+] = 1.0 x 10-9 M at 25 degC is approximately:

A) 9
B) 7
C) 5
D) 8

Q705: Which colligative property is most suitable for determining molar mass of polymers?

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

Q706: The correct order of increasing atomic size is:

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

Q707: The hybridization of central atom in ClF5 is:

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

Q708: Which of the following complexes is paramagnetic?

A) [Ni(CN)4]2-
B) [Zn(NH3)4]2+
C) [Fe(H2O)6]3+

D) [Pt(NH3)4]2+

Q709: The unit of standard enthalpy change is:

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

Q710: Which reagent converts nitriles to primary amines?

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

Q711: The total number of sigma bonds in benzene is:

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

Q712: Which compound shows maximum ionic character?

A) LiF
B) NaCl
C) KBr
D) CsI

Q713: The oxidation state of sulphur in Na2S2O3 is:

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

Q714: The bond angle in CO32- ion is:

A) 109.5 deg
B) 120 deg
C) 107 deg
D) 180 deg

Q715: Which gas deviates least from ideal behavior at high temperature?

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

Q716: The molarity of a solution prepared by dissolving 9.8 g H2SO4 in 1 L solution is:

A) 0.05 M
B) 0.1 M
C) 0.2 M
D) 1.0 M

Q717: Which amine is most basic in gaseous phase?

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

Q718: The coordination number of Fe in [Fe(CN)6]4- is:

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

Q719: Which of the following is an extensive property?

A) Density
B) Temperature
C) Pressure
D) Internal energy

Q720: The Arrhenius equation explains the dependence of rate constant on:

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

Q721: Which compound is commonly used as an antacid?

A) NaCl
B) Mg(OH)2
C) NH4Cl
D) H2SO4

Q722: The total number of valence electrons in ClO4- ion is:

A) 30
B) 31
C) 32
D) 34

Q723: Which of the following is the strongest oxidizing agent?

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

Q724: The time required for 87.5% completion of a first order reaction is:

A) 2t1/2
B) 3t1/2
C) 4t1/2
D) 5t1/2

Q725: Which is an example of homogeneous catalysis?

A) Ni in hydrogenation
B) Fe in Haber process
C) H+ in ester hydrolysis
D) V2O5 in contact process

Q726: 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

Q727: Which molecule has zero dipole moment?

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

Q728: A buffer solution shows maximum buffering when:

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

Q729: Which of the following is a non-electrolyte?

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

Q730: The IUPAC name of CH3-CO-CH3 is:

A) Propanal
B) Propanone
C) Ethanone
D) Butanone

Q731: Which halogen has the lowest bond dissociation energy?

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

Q732: The geometry of XeF4 is:

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

Q733: Which of the following is a state function?

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

Q734: The number of pi bonds in ethyne is:

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

Q735: Which compound shows geometrical isomerism?

A) Ethene
B) Propene
C) But-2-ene
D) Methane

Q736: The SI unit of molar conductivity is:

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

Q737: Which metal is extracted by electrolytic reduction?

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

Q738: The rate law for a first order reaction is:

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

Q739: Which acid is weakest in aqueous solution?

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

Q740: The oxidation state of carbon in CO2 is:

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

Q741: Which compound gives positive Tollens test?

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

Q742: The standard enthalpy of formation of Cl2(g) is:

A) -242 kJ mol-1
B) 0
C) +242 kJ mol-1
D) -393 kJ mol-1

Q743: Which ion has the highest hydration enthalpy?

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

Q744: The reagent used to convert alcohol into alkene is:

A) NaBH4
B) PCC
C) Conc. H2SO4
D) KMnO4

Q745: Which ion is diamagnetic?

A) Fe3+
B) Mn2+
C) Zn2+
D) Cu2+

Q746: The correct order of thermal stability of carbonates is:

A) Li2CO3 < Na2CO3 < K2CO3
B) K2CO3 < Na2CO3 < Li2CO3
C) Na2CO3 < K2CO3 < Li2CO3
D) Li2CO3 < K2CO3 < Na2CO3

Q747: Which ligand is bidentate?

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

Q748: The value of gas constant R in J mol-1 K-1 is:

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

Q749: Which acid is strongest in aqueous solution?

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

Q750: For an exothermic reaction, the sign of DeltaH is:

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