Quiz: Chemistry set 9

Q401: The de Broglie wavelength of a particle decreases when its:

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

Q402: For a first order reaction, the time required for 99.9% completion is approximately:

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

Q403: The maximum number of electrons having n = 6 and l = 1 is:

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

Q404: The pH of a solution obtained by mixing 100 mL of 0.01 M HCl with 100 mL of 0.01 M NaOH is:

A) 1
B) 7
C) 13
D) 2

Q405: Which colligative property is least affected by temperature variation?

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

Q406: The correct order of increasing ionization enthalpy is:

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

Q407: The hybridization of central atom in BrF5 is:

A) sp3d
B) sp3d2
C) sp3
D) sp2

Q408: Which of the following complexes is high spin?

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

Q409: The SI unit of Gibbs free energy is:

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

Q410: Which reagent reduces aldehydes but not carboxylic acids?

A) LiAlH4
B) NaBH4
C) H2/Pd
D) Zn/Hg

Q411: The total number of sigma bonds in benzene is:

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

Q412: Which compound shows maximum covalent character?

A) NaCl
B) MgCl2
C) AlCl3
D) CaCl2

Q413: The oxidation number of sulphur in Na2S4O6 is:

A) +2
B) +4
C) +5
D) Average +2.5

Q414: The bond angle in NO3- ion is:

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

Q415: Which gas deviates least from ideal behavior?

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

Q416: The molarity of a solution containing 18 g glucose in 500 mL solution is:

A) 0.1 M
B) 0.2 M
C) 0.5 M
D) 1.0 M

Q417: Which amine is strongest base in gaseous phase?

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

Q418: The coordination number of Cu in [Cu(NH3)4]2+ is:

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

Q419: Which of the following is an extensive property?

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

Q420: The rate constant of a reaction depends on:

A) Initial concentration
B) Temperature
C) Time
D) Extent of reaction

Q421: Which compound is commonly used as antacid?

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

Q422: The total number of valence electrons in SO3 molecule is:

A) 18
B) 24
C) 30
D) 32

Q423: Which of the following is the strongest oxidizing agent?

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

Q424: The time required for 50% completion of a first order reaction is:

A) t1/2
B) 2t1/2
C) 3t1/2
D) 0.5t1/2

Q425: Which of the following 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

Q426: 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

Q427: Which molecule has zero dipole moment?

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

Q428: A buffer solution is most effective when:

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

Q429: Which of the following is a non-electrolyte?

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

Q430: The IUPAC name of CH3-CHO is:

A) Methanal
B) Ethanal
C) Propanal
D) Ethanol

Q431: Which halogen has minimum bond dissociation energy?

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

Q432: The geometry of ICl3 is:

A) Trigonal planar
B) T-shaped
C) Linear
D) Tetrahedral

Q433: Which of the following is a state function?

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

Q434: The number of pi bonds in benzene is:

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

Q435: Which compound shows geometrical isomerism?

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

Q436: The SI unit of molar conductivity is:

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

Q437: Which metal is extracted by electrolytic reduction?

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

Q438: 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]

Q439: Which acid is weakest in aqueous solution?

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

Q440: The oxidation state of nitrogen in NH3 is:

A) -3
B) +3
C) +5
D) 0

Q441: Which compound gives positive Tollens test?

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

Q442: The standard enthalpy of formation of Br2(l) is:

A) 0
B) +30 kJ mol-1
C) -30 kJ mol-1
D) -393 kJ mol-1

Q443: Which ion has maximum hydration enthalpy?

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

Q444: The reagent used to convert alcohol into alkene is:

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

Q445: Which ion is diamagnetic?

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

Q446: 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

Q447: Which ligand is bidentate?

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

Q448: 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

Q449: Which acid is strongest in aqueous solution?

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

Q450: The enthalpy change of an exothermic reaction is:

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