Quiz: Chemistry set 7

Q301: The kinetic energy of an electron increases when the wavelength associated with it:

A) Increases
B) Decreases
C) Becomes zero
D) Remains constant

Q302: For a second order reaction with equal initial concentrations, the half-life is proportional to:

A) 1/k
B) 1/(k[A]0)
C) 1/(k[A]02)
D) k[A]0

Q303: The maximum number of electrons that can have n = 4 and l = 2 is:

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

Q304: The pH of a 0.01 M HCl solution after dilution to ten times its volume is:

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

Q305: Which colligative property is used for determination of molar mass of polymers?

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

Q306: The correct order of increasing atomic radius is:

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

Q307: The hybridization of iodine in IF5 is:

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

Q308: Which of the following complexes is diamagnetic?

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

Q309: The unit of entropy change is:

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

Q310: Which reagent reduces carboxylic acids to primary alcohols?

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

Q311: The total number of sigma bonds in ethyne is:

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

Q312: Which compound has maximum covalent character?

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

Q313: The oxidation number of sulphur in Na2S2O3 is:

A) +6
B) +5
C) +2
D) Average +2

Q314: The bond angle in NO2- ion is approximately:

A) 180 deg
B) 120 deg
C) 115 deg
D) 109.5 deg

Q315: Which gas shows maximum deviation from ideal behavior?

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

Q316: The molarity of a solution containing 9.8 g of H_2SO_4 in 500 mL is:

A) 0.1 M
B) 0.2 M
C) 0.4 M
D) 1.0 M

Q317: Which amine is strongest base in aqueous solution?

A) NH_3
B) CH_3NH_2
C) $(CH_3)_2NH$
D) $(CH_3)_3N$

Q318: The coordination number of central metal ion in $[Cr(en)_3]^{3+}$ is:

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

Q319: Which of the following is an intensive property?

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

Q320: The rate constant of a reaction depends on:

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

Q321: Which compound is used as antacid?

A) NaCl
B) $CaCO_3$
C) NH_4Cl
D) HCl

Q322: The total number of valence electrons in NO_3^- ion is:

A) 22
B) 24
C) 26
D) 32

Q323: Which of the following is the strongest oxidizing agent?

A) $KMnO_4$
B) $K_2Cr_2O_7$
C) O_3
D) F_2

Q324: For a first order reaction, the time required for 87.5% completion is:

A) 2 t1/2
B) 3 t1/2
C) 4 t1/2
D) 1 t1/2

Q325: 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

Q326: The correct increasing 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

Q327: Which molecule has zero dipole moment?

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

Q328: A buffer solution shows maximum buffering action when:

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

Q329: Which of the following is a non-electrolyte?

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

Q330: The IUPAC name of CH3-COOH is:

A) Methanoic acid
B) Ethanoic acid
C) Propanoic acid
D) Ethanal

Q331: Which halogen has the highest bond dissociation energy?

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

Q332: The geometry of XeF4 is:

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

Q333: Which of the following is a state function?

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

Q334: The number of pi bonds in ethene is:

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

Q335: Which compound shows geometrical isomerism?

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

Q336: The SI unit of molar conductivity is:

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

Q337: Which metal is extracted by electrolytic reduction?

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

Q338: 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]

Q339: Which acid is weakest in aqueous solution?

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

Q340: The oxidation state of carbon in CH_4 is:

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

Q341: Which compound gives positive Tollens test?

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

Q342: The standard enthalpy of formation of $O_2(g)$ is:

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

Q343: Which ion has the highest hydration enthalpy?

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

Q344: The reagent used to convert alcohol into alkene is:

A) PCC
B) $NaBH_4$
C) Conc. H_2SO_4
D) $KMnO_4$

Q345: Which ion is diamagnetic?

A) Fe^{3+}
B) Mn^{2+}
C) Zn^{2+}
D) Cu^{2+}

Q346: The correct order of thermal stability of carbonates is:

A) $Li_2CO_3 < Na_2CO_3 < K_2CO_3$
B) $K_2CO_3 < Na_2CO_3 < Li_2CO_3$
C) $Na_2CO_3 < K_2CO_3 < Li_2CO_3$
D) $Li_2CO_3 < K_2CO_3 < Na_2CO_3$

Q347: Which ligand is bidentate?

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

Q348: The value of R in J mol-1 K-1 is:

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

Q349: Which acid is strongest in aqueous solution?

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

Q350: The enthalpy change during vaporization is:

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

Q351: For an exothermic reaction, the value of DeltaH is:

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