Quiz: Chemistry set 13

Q601: The de Broglie wavelength of an electron accelerated through a potential difference increases when:

A) Potential difference increases
B) Potential difference decreases
C) Mass increases
D) Charge increases

Q602: For a first order reaction, the unit of rate constant k is:

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

Q603: The number of orbitals in the shell with principal quantum number n = 5 is:

A) 5
B) 10
C) 25
D) 50

Q604: The pH of pure water at 25 degC is:

A) 5
B) 6
C) 7
D) 8

Q605: Which colligative property is used in reverse osmosis desalination plants?

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

Q606: The correct order of increasing ionization enthalpy is:

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

Q607: The hybridization of central atom in SF4 is:

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

Q608: Which complex is diamagnetic?

A) [Fe(H2O)6]3+
B) [MnF6]3-
C) [Ni(CN)4]2-
D) [CoF6]3-

Q609: The SI unit of entropy is:

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

Q610: Which reagent converts aldehydes into carboxylic acids?

A) NaBH4
B) PCC
C) KMnO4
D) Zn/Hg

Q611: The total number of sigma bonds in ethane is:

A) 6
B) 7
C) 8
D) 9

Q612: Which compound shows maximum covalent character?

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

Q613: The oxidation state of nitrogen in N2O is:

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

Q614: The bond angle in NH3 is approximately:

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

Q615: Which gas shows maximum deviation from ideal behavior?

A) H2
B) He
C) NH3
D) Ne

Q616: The molarity of a solution containing 10 g NaOH in 1 L solution is:

A) 0.1 M
B) 0.25 M
C) 0.5 M
D) 1.0 M

Q617: Which amine is most basic in gaseous phase?

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

Q618: The coordination number of Cr in [Cr(NH3)6]3+ is:

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

Q619: Which of the following is an extensive property?

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

Q620: The rate constant of a reaction increases with:

A) Decrease in temperature
B) Increase in activation energy
C) Increase in temperature
D) Decrease in concentration

Q621: Which compound acts as an antacid?

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

Q622: The total number of valence electrons in NO2- ion is:

A) 16
B) 17
C) 18
D) 19

Q623: Which of the following is the strongest oxidizing agent?

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

Q624: 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

Q625: 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

Q626: 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

Q627: Which molecule has zero dipole moment?

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

Q628: A buffer solution has maximum buffering capacity when:

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

Q629: Which of the following is a non-electrolyte?

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

Q630: The IUPAC name of CH3-CH2-CHO is:

A) Propanone
B) Ethanal
C) Propanal
D) Propanoic acid

Q631: Which halogen has the lowest bond dissociation energy?

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

Q632: The geometry of ICl3 is:

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

Q633: Which of the following is a state function?

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

Q634: The number of pi bonds in benzene is:

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

Q635: Which compound shows geometrical isomerism?

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

Q636: The SI unit of molar conductivity is:

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

Q637: Which metal is extracted by electrolytic reduction?

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

Q638: 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]

Q639: Which acid is weakest in aqueous solution?

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

Q640: The oxidation state of carbon in CH_4 is:

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

Q641: Which compound gives positive Tollens test?

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

Q642: The standard enthalpy of formation of $N_2(g)$ is:

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

Q643: Which ion has the highest hydration enthalpy?

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

Q644: The reagent used to convert alcohol into alkene is:

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

Q645: Which ion is diamagnetic?

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

Q646: 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) $Li_2CO_3 < K_2CO_3 < Na_2CO_3$

Q647: Which ligand is bidentate?

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

Q648: 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

Q649: Which acid is strongest in aqueous solution?

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

Q650: The enthalpy change during vaporization is always:

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

Q651: For an endothermic reaction, the value of DeltaH is:

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