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# Multiple Choice QUESTIONS IN CHEMISTRY

1000+ MCQs FOR ALL  
COMPETITIVE EXAMS

The soul of chemistry is dealing with \_\_\_\_\_?

- A. Internal structural changes in matter
- B. Composition of matter
- C. Properties of matter
- D. Composition and properties of matter**

The radioactive isotope of hydrogen is called \_\_\_\_\_?

- A. tritium**
- B. deuterium
- C. protium
- D. ortho-hydrogen

Electron was discovered by?

- A. Michael Faraday
- B. James Maxwell
- C. Yuri Gagarin
- D. J.J Thomson**

Sodium carbonate is produced by \_\_\_\_\_?

- A. haber process
- B. Amonia solvay process**
- C. decons process
- D. lead chamber process

Which of the following is a substance?

- A. Sea water
- B. Brass
- C. Tape water
- D. Graphite**
- E. Sand

Read More Details about this Mcq

Some substances are good conductor of electricity in both the solid and liquid states. These substances are generally \_\_\_\_\_?

- A. ionic substances
- B. metallic substances**
- C. molecular solids
- D. covalent network solids

All of the following substances are crystalline except \_\_\_\_\_?

- A. Ice
- B. Diamond
- C. Sucrose
- D. Plastic**

Covalent network crystals have \_\_\_\_\_?

- A. higher melting point then molecular crystals**
- B. lower melting point then molecular crystals
- C. discrete molecules linked by Van der waals forces
- D. hydrogen bonding

What is a mixture of Potassium Nitrate Powdered Charcoal and Sulphur called?

- A. Paint
- B. Glass
- C. Gun Powder**
- D. Cement

Diameter of an atom is in the order of \_\_\_\_\_?

- A. 0.2m
- B. 0.2mm
- C. 0.2nm**
- D. 0.2pm

Mass spectrometer is used to determine Mass number of isotopes and \_\_\_\_\_?

- A. Atomic number
- B. Relative abundance**
- C. Electronic configuration
- D. All of the above

The number of peaks obtained in mass spectrometry shows \_\_\_\_\_?

- A. Relative abundance
- B. Average mass of element
- C. Number of isotopes**
- D. Relative isotopic mass

Empirical formula of chloroform is \_\_\_\_\_?

- A. CH<sub>2</sub> C<sub>12</sub>
- B. CH<sub>3</sub>C<sub>1</sub>
- C. CC<sub>14</sub>
- D. CHCL<sub>3</sub>**

Read More Details about this Mcq

**Molecular mass of water (18g) means \_\_\_\_\_?**

- A. 1-mole molecules of water
- B. 1-gram molecule of water
- C. 3-gram atoms
- D. all**

**Which of the following statements about isotopes is correct ?**

- A. Isotopes with odd atomic number are abundant
- B. Isotopes with odd atomic number and even mass number are abundant
- C. Isotopes with even atomic number and even mass number are abundant**
- D. Isotopes with even atomic number and odd mass no are abundant

**One mole of CO<sub>2</sub> contains?**

- A.  $6.022 \times 10^{23}$  atoms of oxygen
- B. 22-gram electrons
- C.  $6.022 \times 10^{23}$  atoms of carbon
- D. both B. & C.**

**The number of isotopes of elements with even mass number and even atomic number are \_\_\_\_\_?**

- A. 280
- B. 300
- C. 154**
- D. 54

**Which of the following terms is not used for ionic compound ?**

- A. formula unit
- B. empirical formula
- C. molecular formula**
- D. formula mass

**moles of each aluminium and oxygen react with each other to produce aluminium oxide. The amount of product formed is \_\_\_\_\_?**

- A. 0.18 mole**
- B. 0.27 mole
- C. 0.24 mole
- D. 0.09 mole

**Which one of the following has the maximum number of isotopes ?**

- A. oxygen
- B. carbon
- C. tin**
- D. chlorine

**The volume occupied by 2.8 g of N<sub>2</sub> at STP \_\_\_\_\_?**

- A. 2.24 dm<sup>3</sup>**
- B. 22.4 dm<sup>3</sup>
- C. 1.12 dm<sup>3</sup>
- D. 112 dm<sup>3</sup>

**The number of moles of CO<sub>2</sub> which contains 16 g of oxygen is \_\_\_\_\_?**

- A. 0.25
- B. 0.5**
- C. 0.75
- D. 1

**How many isotopes have odd atomic number ?**

- A. 154
- B. 280
- C. 86**
- D. 300

**Percentage of calcium in calcium carbonate is \_\_\_\_\_?**

- A. 80%
- B. 30%
- C. 40%**
- D. 20%

**Mostly elements have fractional atomic masses because of \_\_\_\_\_?**

- A. mass of an atom itself is in fraction
- B. atomic masses are average masses of isobars
- C. atomic masses are average masses of isotopes proportional to their relative abundance
- D. atomic masses are average masses of isotopes

**Which of the following is not a macromolecule ?**

- A. sand
- B. haemoglobin
- C. diamond
- D. maltose**

**Isotopes of the same elements has \_\_\_\_\_?**

- A. different number of protons
- B. same number of neutrons
- C. different number of neutrons**
- D. same mass number (nucleon number)

When cationic molecular ions are allowed to pass through strong magnetic field in mass spectrometer which of the following ions is fallen\_\_\_\_\_?

- A. lighter**
- B. intermediate
- C. heavier
- D. are collected at same time

For which of the following compounds the term empirical formula cannot be applied ?

- A. NaCl
- B. H<sub>2</sub>O
- C. CCl<sub>4</sub>
- D. It can be applied to all mentioned above**

The properties of an element mostly corresponds to that isotope which has greater\_\_\_\_\_?

- A. Mass number
- B. Atomic mass
- C. Relative abundance**
- D. all of the above

1 a.m.u = \_\_\_\_\_?

- A.  $1.6 \times 10^{-27}$  kg**
- B.  $1.6 \times 10^{-24}$  kg
- C.  $1.6 \times 10^{-26}$  kg
- D.  $1.6 \times 10^{-28}$  kg

Which of the following are isoelectronic species ?

- A. H<sup>+</sup> H H<sup>-</sup>
- B. Li<sup>+</sup> Na<sup>+</sup> K<sup>+</sup>
- C. Cl<sup>-</sup> Br<sup>-</sup> I<sup>-</sup>
- D. F<sup>-</sup> Ne Na<sup>+</sup>**

Molecular ions are formed by passing\_\_\_\_\_?

- A. High energy electron beam
- B.  $\gamma$  - particle
- C. X-rays
- D. All of the above**

Which one is true about isotope ?

- A. Same number of neutrons
- B. Same mass number
- C. Same physical properties
- D. Same chemical properties**

Which of the following ion formation is always exothermic ?

- A. Uni-negative**
- B. Uni-positive
- C. Di-negative
- D. Di-positive

The sample of isotopes of an element which needs not to be vaporized in the vaporization chamber\_\_\_\_\_?

- A. Gas**
- B. Liquid
- C. Volatile solid
- D. All

Avogadro's number may represent\_\_\_\_\_?

- A. volume of particles
- B. number of particles
- C. mass of particles
- D. All of the above**

Size of molecule depends upon\_\_\_\_\_?

- A. Atomicity
- B. Shape of molecule
- C. Both A and B**
- D. Difficult to predict

Which of the following terms is used for the mass of chlorine 35.5 ?

- A. relative atomic mass**
- B. mass number
- C. atomic weight
- D. relative isotopic mass

Which one of the following is not the mono isotopic element ?

- A. arsenic
- B. uranium**
- C. iodine
- D. nickel

The mass of decimole of electrons (NA) is \_\_\_\_\_?

- A. 1.008 mg
- B. 0.184 mg
- C. 0.054 mg**
- D. 5.4 mg

Which of the following statements is wrong about isotopes ?

- A. they possess different mass number
- B. they possess different physical properties
- C. they possess same chemical properties
- D. they possess different position in the periodic table**

Qualitative analysis is carried out for \_\_\_\_\_?

- A. identification of elements**
- B. estimation of amounts of elements
- C. molar ration of elements
- D. molar volume of elements

Combustion analysis is performed to determine \_\_\_\_\_?

- A. Empirical formula**
- B. Molecular mass
- C. Molecular formula
- D. Formula mass

Isotopes differ in \_\_\_\_\_?

- A. properties which depend upon mass**
- B. arrangement of electrons in orbitals
- C. chemical properties
- D. all of the above

Which of the following methods is used to estimate hydrogen in an organic compound?

- A. Combustion method**
- B. Dumas method
- C. Kjeldahls method
- D. All of the above methods are for different purposes

The nucleus of an atom of every element will always contain \_\_\_\_\_?

- A. neutrons
- B. protons and electrons

**C. protons**

D. protons and neutrons

When 0.5 mole of phosphoric acid is dissolved in aqueous solution how many moles of -ve and +ve ions are collected altogether ?

- A. 0.5
- B. 1
- C. 1.5
- D. 2**

Dempsters mass spectrometer has number of zones / parts \_\_\_\_\_?

- A. 5**
- B. 4
- C. 3
- D. 2

All the following variables are used to describe gases except \_\_\_\_\_?

- A. pressure
- B. volume
- C. moles
- D. density**

Methyl alcohol is not used as \_\_\_\_\_?

- A. a solvent
- B. an anti freezing agent
- C. a substitute for petrol**
- D. for denaturing of ethyl alcohol

Oxygen (molecular weight = 32) diffuses at a rate of 10cm<sup>3</sup>/min under the same conditions of temperature and pressure how fast will hydrogen (molecular weight = 2) diffuse ?

- A. 20cm<sup>3</sup>/min
- B. 40cm<sup>3</sup>/min**
- C. 160cm<sup>3</sup>/min
- D. 2.5cm<sup>3</sup>/min

As a substance moves from a solid to a liquid all of the following changes occur except ?

- A. molecules become more disordered.
- B. K.E of the molecules decreases**
- C. intermolecular forces become weaker.
- D. molecules move more frequently.

The rectified spirit is \_\_\_\_\_?

- A. 12% alcohol
- B. 90% alcohol
- C. 95% alcohol**
- D. 100% alcohol

Which of the following solids show anisotropy \_\_\_\_\_?

- A. Plastic
- B. Glass
- C. Rubber
- D. None of the above**

Butyl chloride gives possible isomers ?

- A. 2
- B. 3
- C. 4**
- D. 5

Metallic crystals are soluble in \_\_\_\_\_?

- A. Polar solvent
- B. Non polar solvent
- C. Fused metal**
- D. None

Paramagnetic behaviour of substance is measured by a balance called \_\_\_\_\_?

- A. Analytical balance
- B. Guoys balance**
- C. Electrical balance
- D. Single beam balance

Which of the following properties prove that cathode rays are material in nature \_\_\_\_\_?

- A. they cast shadow
- B. they possess momentum**
- C. they are negatively charged
- D. all of the above

When an electron is moving with velocity of  $2.188 \times 10^6 \text{ ms}^{-1}$  in the first orbit of Bohrs model of hydrogen. The de Broglie wavelength of electron is \_\_\_\_\_?

- A. 0.33 nm**
- B. 0.34 nm
- C. 0.35 nm
- D. 0.36 nm

When methyl iodide and ethyl iodide are treated with sodium metal possible major products are obtained ?

- A. 1
- B. 2
- C. 3**
- D. 4

Which statement is consistent with Hund's rule ?

- A. Electrons fill orbitals with parallel spins until all the orbitals of the same energy are half filled then they go into sub-shells with anti-parallel (opposite) spin.**
- B. The electrons in the same atom cannot have the same four quantum numbers
- C. There is maximum of two electrons in an orbital.
- D. None

Atomic number of Mn is 25 what is the electronic configuration in the ground state \_\_\_\_\_?

- A.  $1s^2 2s^2 2p^6 3s^2 3p^6 3d^7$
- B.  $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 4p^5$
- C.  $1s^2 2s^2 2p^6 3s^2 3p^5 3d^{10}$
- D.  $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^5$

Which of the following is mineral fiber ?

- A. Teflon
- B. asbestos**
- C. saran
- D. acrylic

The hardest of the following solids is \_\_\_\_\_?

- A. sodium
- B. diamond**
- C. graphite
- D. magnesium

Which of the solid does not contain covalent bond \_\_\_\_\_?

- A. copper**
- B. ice
- C. diamond
- D. graphite

The balanced chemical equation for the reaction which occurs when Be is added to water is \_\_\_\_\_?

- A.  $\text{Be} + 2\text{H}_2\text{O} \rightarrow \text{Be}(\text{OH})_2 + \text{H}_2$
- B.  $\text{Be} + \text{H}_2\text{O} \rightarrow \text{Be}(\text{OH})_2 + \text{H}_2$
- C.  $\text{Be} + \text{H}_2\text{O} \rightarrow [\text{Be}(\text{OH})_4]^{2-} + 2\text{H}_2$
- D. no reaction

Which of the following theories is superior to others \_\_\_\_\_?

- A. VSEPR
- B. VBT
- C. MOT
- D. none of the above

Which of the following is not characteristics of reversible reaction \_\_\_\_\_?

- A. whole amount of reactant does not change into product
- B. chemical equilibrium is established
- C. a catalyst changes the direction of reaction
- D. rate of forward reaction decreases as reaction proceeds

A solution has pH = 0 its  $\text{H}^+$  ion concentration is \_\_\_\_\_?

- A.  $1 \times 10^{-1}$
- B.  $1 \times 10^{-14}$
- C.  $1 \times 10^{-7}$
- D. 1

1 mole of electron has mass in microgram \_\_\_\_\_?

- A.  $1.008 \times 10^{-3}$
- B.  $5.5 \times 10^{-4}$
- C.  $1.84 \times 10^{-4}$
- D.  $1.673 \times 10^{-3}$

The use of antifreeze in the automobile radiator is an important application of \_\_\_\_\_?

- A. constitutive property
- B. additive property
- C. colligative property
- D. intrinsic property

At which electrode the reduction of the solution is occurring in Al-Ag cell \_\_\_\_\_?

- A. A
- B. Ag
- C. Both
- D. Neither

In which of the following type of reactions energy of reactant is greater than energy of product \_\_\_\_\_?

- A. endothermic
- B. exothermic
- C. unpredictable
- D. same

Which of following metals can be displaced by all other metals from its solution ?

- A. Ag
- B. A
- C. Au
- D. Cu

Which of the elements do not fall in stair case of the modern periodic table \_\_\_\_\_?

- A. Si
- B. As
- C. Te
- D. None of the above

Across short period the melting and boiling point increase upto \_\_\_\_\_?

- A. IIIA group
- B. IVA group
- C. VA group
- D. VIA group

Which of the following is the formula of chrome red ?

- A.  $\text{Pb}_3\text{O}_4$
- B.  $2\text{PbCO}_3 - \text{Pb}(\text{OH})_2$
- C.  $\text{PbCrO}_4 - \text{Pb}(\text{OH})_2$
- D.  $\text{Pb}_2\text{O}$

Regular coiling or zigzagging of polypeptide through hydrogen bonding is its \_\_\_\_\_?

- A. Quantum structure
- B. Secondary structure
- C. Tertiary structure
- D. Primary structure

**In the van der Waals equation  $(P + n^2a / v^2) (v - nb) = nRT$  which of the following statement is not true ?**

- A.  $n^2a/v$  correct for the intermolecular forces.
- B.  $nb$  correct for the volume occupied by gas molecules.
- C. at high densities the equation reduces to the ideal gas law**
- D. all of the above statements are correct.

**The inhaled breath of diabetics patient contain acetone. A medical student wishes to test for diabetes by asking patient to bubble their breath through a reagent ?**

- A. alkaline aqueous iodine**
- B. aqueous bromine
- C. Fehling solution
- D. aqueous NaOH

**When aqueous bromine is added to aqueous phenol a creamy white ppt is obtained. What does this reaction show ?**

- A. phenol is unsaturated
- B. 2-bromophenol is insoluble in water
- C. a hydroxy group makes the benzene ring more susceptible to electrophilic attack**
- D. acid-base reaction

**If a graph is plotted between temperature on x-axis and volume on y-axis for 1 mole of gas then we get straight line which cuts the temperature axis at \_\_\_\_\_?**

- A. 0°C
- B. 273.16K
- C. 273.16 K
- D. 273.16°C**

**Benzene is a good solvent for \_\_\_\_\_?**

- A. fats
- B. resins
- C. iodine
- D. all the above**

**Which of the following element doesnot show allotropy \_\_\_\_\_?**

- A. Carbon
- B. Arsenic

- C. Nitrogen**
- D. Sulphur

**Purines and pyrimidines are \_\_\_\_\_?**

- A. Enzymes
- B. Nitrogenous bases**
- C. Carbohydrates
- D. Lipids

**All the transition elements show \_\_\_\_\_?**

- A. Similar physical properties
- B. Similar chemical properties
- C. Both A and b
- D. None**

**In solids the temperature is the measure of \_\_\_\_\_?**

- A. Average kinetic energy of molecules
- B. Vibrational kinetic energy**
- C. Translational kinetic energy
- D. None of the above

**Fruit juices and fizzy drinks such as lemonade are often sold in aluminium cans. What is the most important reason aluminium is a suitable metal ?**

- A. aluminium can be recycled
- B. aluminium has very low density
- C. aluminium is the most abundant metal in the earth crust
- D. aluminium is resistant to corrosion by organic acids.**

**On heating aldehydes with Fehlings solution we get a precipitate whose colour is \_\_\_\_\_?**

- A. pink
- B. black
- C. yellow
- D. brick red**

**What is maximum number of electrons in an orbital with  $m$  (magnetic quantum number) = 3 ?**

- A. 6
- B. 4

- C. 3  
D. 2

Which catalyst is used in contact process ?

- A. Fe<sub>2</sub>O<sub>3</sub>  
B. V<sub>2</sub>O<sub>5</sub>  
C. SO<sub>3</sub>  
D. Ag<sub>2</sub>O

Which of the following elements has greater 1st ionization energy\_\_\_\_\_?

- A. B  
B. C  
C. N  
D. O

Which of the following molecule is polar\_\_\_\_\_?

- A. CCl<sub>4</sub>  
B. CO<sub>2</sub>  
C. BF<sub>3</sub>  
D. none of the above

Which of the following points are important in connection with equilibrium constant ?

- A. K<sub>c</sub> is constant at given temperature  
B. K<sub>c</sub> is unaffected by change in concentration of reactants or products  
C. K<sub>c</sub> indicates the extent of reaction but not about the rate of reaction.  
D. All of the above

Solubility of CaF<sub>2</sub> is  $2.0 \times 10^{-4}$  gdm<sup>-3</sup> then K<sub>sp</sub> of CaF<sub>2</sub> is\_\_\_\_\_?

- A.  $4.0 \times 10^{-8}$   
B.  $3.2 \times 10^{-11}$   
C.  $2.0 \times 10^{-8}$   
D.  $4.0 \times 10^{-12}$

The unit of molality is\_\_\_\_\_?

- A. moles dm<sup>-3</sup>  
B. moles kg<sup>-1</sup>  
C. gram dm<sup>-3</sup>  
D. none

A solution can be both\_\_\_\_\_?

- A. dilute and concentrated  
B. dilute and saturated

- C. saturated and unsaturated  
D. saturated and super saturated

Consider the following redox reaction. Zn+dil HNO<sub>3</sub>? Zn (NO<sub>3</sub>)<sub>2</sub> + N<sub>2</sub>O + H<sub>2</sub>O The coefficient number of HNO<sub>3</sub> in the equation is\_\_\_\_\_?

- A. 6  
B. 8  
C. 10  
D. 4

Which of the following elements react with steam to produce H<sub>2</sub> gas?

- A. Pd  
B. Ni  
C. Sn  
D. All of the above

The unit of the rate constant (k) is same as that of rate of reaction\_\_\_\_\_?

- A. First order reaction  
B. Second order reaction  
C. Zero order reaction  
D. Third order reaction

Acid present in acid rain may be\_\_\_\_\_?

- A. H<sub>2</sub>SO<sub>4</sub>  
B. HNO<sub>3</sub>  
C. both A and B  
D. none of the above

Which of the following elements conduct electricity and also melts below 100°C ?

- A. Aluminium  
B. Sodium  
C. Carbon  
D. Sulphur

The compound which is added to leaded gasoline to save engine from lead oxide and lead sulphate deposits is\_\_\_\_\_?

- A. Ethylene iodide  
B. Ethylene bromide  
C. Ethylene chloride  
D. Ethylene fluoride

Isotopes differs in\_\_\_\_\_?

- A. arrangement of electrons in orbitals  
 B. position in the periodic table  
 C. properties depend upon mass  
**D. chemical properties**

**The volume occupied by 1.4g CO at S.T.P is \_\_\_\_\_?**

- A. 22.4 dm<sup>3</sup>  
 B. 2.24 dm<sup>3</sup>  
 C. 1.12 cm<sup>3</sup>  
**D. 1.12 dm<sup>3</sup>**

**Which of the following set has all species isoelectronic \_\_\_\_\_?**

- A. F – Cl – Br  
 B. Li<sup>+1</sup> – Na<sup>+1</sup> – K<sup>+1</sup>  
**C. F – Ne – Na<sup>+</sup>**  
 D. H<sup>+</sup> – H<sup>-</sup> – H

**Water absorber used in combustion analysis is \_\_\_\_\_?**

- A. 50% KOH  
 B. Lime water  
 C. CaCl<sub>2</sub>  
**D. Mg (ClO<sub>4</sub>)<sub>2</sub>**

**The type of filtering media used for filtration depending upon \_\_\_\_\_?**

- A. Nature of reactants  
 B. Nature of crucible  
 C. Nature of product  
**D. Nature of precipitate**

**A method of separation of components from its solution using Distribution law is \_\_\_\_\_?**

- A. Sublimation  
 B. Crystallisation  
**C. Solvent extraction**  
 D. Distillation

**Equal masses of methane and oxygen are mixed in empty container at 250°C. The fraction of total pressure exerted by oxygen is \_\_\_\_\_?**

- A. one / seventeen  
 B. sixteen / seventeen  
**C. one / three**  
 D. two / three

**The molecules of CO<sub>2</sub> in dry ice form \_\_\_\_\_?**

- A. Ionic crystal  
 B. Covalent crystal  
**C. Molecular crystal**  
 D. Any type of crystal

**Only London dispersion forces are present among the \_\_\_\_\_?**

- A. Molecules of water in liquid state  
 B. Atoms of helium in gaseous state at high temperature  
 C. Molecules of hydrogen chloride gas  
**D. Molecules of solid iodine**

**Quantum number values for 3p orbitals are \_\_\_\_\_?**

- A. n=3 l=2  
 B. n=3 l=0  
**C. n=3 l=1**  
 D. n=3 l=3

**Which specie has unpaired electrons in antibonding molecular orbitals \_\_\_\_\_?**

- A. O<sub>2</sub><sup>+2</sup>  
**B. N<sub>2</sub><sup>-2</sup>**  
 C. B<sub>2</sub>  
 D. O<sub>2</sub><sup>-2</sup>

**For a given process the heat changes at constant pressure (qp) and at constant volume (qv) are related to each other as \_\_\_\_\_?**

- A. qp = qv  
 B. qp < qv  
**C. qp > qv**  
 D. qp = qv / 2

**Solubility product of AgCl is 2.0 x 10<sup>-10</sup> mol<sup>2</sup> dm<sup>-6</sup>. Maximum Concentration of Ag<sup>+1</sup> ions in the solution is \_\_\_\_\_?**

- A. 2.0 x 10<sup>-10</sup> mol dm<sup>-3</sup>  
**B. 1.414 x 10<sup>-5</sup> mol dm<sup>-3</sup>**  
 C. 1.0 x 10<sup>-10</sup> mol dm<sup>-3</sup>  
 D. 1.0 x 10<sup>-5</sup> mol dm<sup>-3</sup>

**Which of the following solution has the highest boiling point ?**

- A. 5.85% NaCl Solution**  
 B. 18.0 % glucose solution  
 C. 6.0 % urea solution  
 D. All have same boiling point

Which of the following can be used in laptops ?

- A. Silver oxide battery  
 B. Fuel cell  
**C. Nickel cadmium cell**  
 D. Lead accumulator

Which is the unit of (K) rate constant for zero order reaction ?

- A. s-1  
**B. mol dm<sup>-3</sup> s<sup>-1</sup>**  
 C. mol<sup>-1</sup> dm<sup>3</sup> s<sup>-1</sup>  
 D. mol<sup>-2</sup> dm<sup>6</sup> s<sup>-1</sup>

Which is carnalite \_\_\_\_\_?

- A. KCl  
 B. NaCl  
**C. KCl MgCl<sub>2</sub> 6H<sub>2</sub>O**  
 D. Na<sub>2</sub>CO<sub>3</sub> . 10H<sub>2</sub>O

Which one does not give borax bead test \_\_\_\_\_?

- A. Copper sulphate  
 B. Barium sulphate  
 C. Cobalt sulphate  
 D. Nickel sulphate

The most reactive allotropic form of phosphorus is \_\_\_\_\_?

- A. White**  
 B. Redox potential  
 C. Black  
 D. Violet

Which molecule has the highest bond energy among the halogens \_\_\_\_\_?

- A. Fluorine  
**B. Chlorine**  
 C. Iodine  
 D. Bromine

The most paramagnetic element is \_\_\_\_\_?

- A. Iron**  
 B. Cobalt  
 C. Chromium  
 D. Manganese

Which one of the following looks odd \_\_\_\_\_?

- A. H<sub>2</sub>SO<sub>4</sub>  
 B. KMnO<sub>4</sub>  
**C. H<sub>2</sub>S**  
 D. K<sub>2</sub>CrO<sub>4</sub>

In 1 – pentene -4- yne the carbon exhibit hybridization \_\_\_\_\_?

- A. sp<sup>3</sup> – sp<sup>2</sup>  
 B. sp<sup>2</sup> – sp  
 C. sp<sup>2</sup> – sp  
**D. sp<sup>3</sup> – sp<sup>2</sup> – sp**

When benzene is heated in air with V<sub>2</sub>O<sub>5</sub> at 450°C yields \_\_\_\_\_?

- A. Phenol  
**B. Maleic anhydride**  
 C. Glyoxal  
 D. Benzoic acid

Which one of the following will be sulphonated readily ?

- A. Chlorobenzene  
**B. Toluene**  
 C. Nitrobenzene  
 D. Benzene

When CO<sub>2</sub> is made to react with ethyl magnesium iodide in dry ether followed by acid hydrolysis yields \_\_\_\_\_?

- A. Carboxylic acid  
 B. Ethanoic acid  
**C. Propanoic acid**  
 D. Butanoic acid

Ethyl chloride on reduction in the presence of Zn/HCl produces \_\_\_\_\_?

- A. n. butane  
 B. Ethanol  
**C. Ethane**  
 D. Diethyl ether

For industrial preparation of  $\text{CH}_3\text{CHO}$  catalytic promoter is \_\_\_\_\_?

- A.  $\text{PdCl}_2$
- B.  $\text{Cu}_2\text{Cl}_2$**
- C.  $\text{CuCl}_2$
- D.  $\text{PbCl}_2$

Which of the following is not a fatty acid ?

- A. Propanoic acid
- B. Acetic acid
- C. Phthalic acid**
- D. Butanoic acid

Which one of the following fertilizers provides the nitrogen and phosphorus to the plant ?

- A. Urea**
- B. Calcium superphosphate
- C. Diammonium phosphate
- D. Potassium nitrate

Chlorination of water may be harmful if the water contains \_\_\_\_\_?

- A. Ammonia
- B. Dissolved oxygen
- C. Carbon dioxide**
- D. All

The mass of one mole of electron is \_\_\_\_\_?

- A. 1.008
- B. 0.55**
- C. 0.184
- D. 1.637

The number of atoms in a molecule determines \_\_\_\_\_?

- A. macromolecule
- B. macromolecule
- C. molecularity
- D. atomicity**

Which element has same isotopes like palladium \_\_\_\_\_?

- A. Nickel
- B. Calcium**
- C. Cadmium
- D. Tin

A limiting reactant is one which \_\_\_\_\_?

- A. is taken in lesser quantity in grams as compared to other reactants
- B. is taken in lesser quantity in volume as compared to other reactants
- C. gives the maximum amount of the product which is required
- D. gives the minimum amount of the product under consideration**

A safe and more reliable method for drying the crystal is \_\_\_\_\_?

- A. Hot air currents
- B. folds of filter paper
- C. oven
- D. Vacuum desiccator**

A real gas obeying vander waals equation will resemble the ideal gas if \_\_\_\_\_?

- A. Both a and b are small**
- B. Both a and b are large
- C. a is small and b is large
- D. a is large and b is small

Plasma is used in \_\_\_\_\_?

- A. Fluorescent bulb
- B. Neon signs
- C. Lasers
- D. All of these**

Which of the following is pseudo solid \_\_\_\_\_?

- A.  $\text{CaF}_2$
- B.  $\text{NaCl}$
- C. Glass**
- D. Diamond

Bohrs model is contradicted by \_\_\_\_\_?

- A. Plancks theory
- B. Dual nature of matter
- C. Heisenbergs uncertainty principle**
- D. All of these

Atomic radius can be determined by \_\_\_\_\_?

- A. X – ray diffraction**  
 B. Spectrophotometer  
 C. Optical microscope  
 D. Electron microscope

**For which system does the equilibrium constant  $K_c$  has unit of (concentration)<sup>-1</sup> \_\_\_\_\_?**

- A.  $N_2 + 3H_2 \rightleftharpoons 2NH_3$   
 B.  $H_2 + I_2 \rightleftharpoons 2HI$   
**C.  $2NO_2 \rightleftharpoons N_2H_4$**   
 D.  $PCl_5 \rightleftharpoons PCl_3 + Cl_2$

**18g glucose is dissolved in 90g water the relative lowering in vapour pressure is equal to \_\_\_\_\_?**

- A. 8  
 B. 5.1  
 C. 6  
**D. one/fifty one**

**Stronger is the oxidizing agent greater is the \_\_\_\_\_?**

- A. Oxidation potential  
 B. Redox potential  
 C. e.m.f of cell  
**D. standard reduction potential**

**Which is true about Zn-Cu galvanic cell ?**

- A. Reduction occurs at anode  
 B.  $K^+$  ion transfer from salt bridge to left beaker of  $ZnSO_4$   
 C. Oxidation occurs at cathode  
**D. Anode is negatively charged**

**Nitrates of which pair gives different products on thermal decomposition \_\_\_\_\_?**

- A. Na K  
 B. Mg Ca  
**C. Li Na**  
 D. Li Ca

**Keeping in view the size of atom which is in correct order \_\_\_\_\_?**

- A.  $Mg > Sr$   
**B.  $Ba > Mg$**   
 C.  $Lu > Ce$   
 D.  $Cl > I$

**Which one is not the use of silicones \_\_\_\_\_?**

- A. Lubricant  
 B. Water repellent film  
 C. Rubber sheet  
**D. Medicine**

**Chemical composition of cinnabar is \_\_\_\_\_?**

- A.  $FeS_2$   
**B.  $HgS$**   
 C.  $PbS$   
 D.  $ZnS$

**When chlorine is passed through hot solution of caustic soda the reaction is said as \_\_\_\_\_?**

- A. Displacement  
 B. Reduction  
**C. Disproportionation reaction**  
 D. Double displacement reaction

**In the complex  $[Cr(OH)_3(H_2O)_3]$  the coordination number is \_\_\_\_\_?**

- A. 2  
 B. 3  
 C. 4  
**D. 6**

**A great variety of the organic compounds is due to its property of carbon \_\_\_\_\_?**

- A. Show tetravalency  
**B. Exhibit catenation**  
 C. Show isomerism  
 D. Can form multiple bonds

**Vinyl acetylene combines with hydrochloric acid produces \_\_\_\_\_?**

- A. Divinyl acetylene  
 B. Ethylidene dichloride  
**C. Chloroprene**  
 D. 1 – 3 – 3 – trichloro butane

**When toluene reacts with chlorine in sunlight the first major product is \_\_\_\_\_?**

- A. Benzyl chloride**  
 B. Benzal dichloride

- C. O-chlorotoluene  
D. O-chlorotoluene and P-chlorotoluene

Which one of the following is not a good leaving group ?

- A. HSO<sub>4</sub><sup>-</sup>  
B. Cl<sup>-</sup>  
C. OH<sup>-</sup>  
D. Br<sup>-</sup>

The process of fermentation involves all the enzymes except \_\_\_\_\_?

- A. Diastase  
B. Invertase  
C. Zymase  
D. **Sucrase**

Which one does not exhibit aldol condensation \_\_\_\_\_?

- A. Ethanal  
B. Acetone  
C. **Benzaldehyde**  
D. Butanone

The common name of propane -1,3-dioic acid is \_\_\_\_\_?

- A. Oxalic acid  
B. Succinic acid  
C. **Malonic acid**  
D. Fumaric acid

Industrial materials thermal power stations are coated with \_\_\_\_\_?

- A. Polyester resins  
B. **Epoxy paints**  
C. polyamide resins  
D. Polyvinyl chloride

Main source of organic compounds is \_\_\_\_\_?

- A. **Animal**  
B. Fossil  
C. Coal  
D. Plants

Hydro carbons which burn with smoky flame are called \_\_\_\_\_?

- A. Aliphatic  
B. Alicyclic  
C. **Aromatic**  
D. Aldehyde

Octane number 2,2,4-trimethyl pentane is \_\_\_\_\_?

- A. **100**  
B. 90  
C. 80  
D. 70

Geometric isomerism is usually found in \_\_\_\_\_?

- A. Alkanes  
B. **Alkenes**  
C. Alkynes  
D. Esters

Organic compounds that are essentially nonpolar and exhibit weak intermolecular forces have \_\_\_\_\_?

- A. **Low melting points**  
B. Low vapour pressure  
C. High boiling points  
D. High electrical conductivity

According to vital force theory \_\_\_\_\_?

- A. Oorganic compounds can be synthesized from inorganic compounds  
B. **organic compounds cannot be synthesized from inorganic compounds**  
C. organic compounds can be synthesized by animals  
D. organic compounds can be synthesized by plants

A double bond consists of \_\_\_\_\_?

- A. Two sigma bonds  
B. Two Pi bonds  
C. **One sigma and one Pi bonds**  
D. One sigma and two Pi bonds

Chemical properties of first member of homologous series with respect to other members are \_\_\_\_\_?

- A. same  
 B. different  
 C. depends upon number of C atoms  
 D. depends upon number of H atoms

**Compounds having same molecular formula but differ in structural formula are called \_\_\_\_\_?**

- A. polymer  
 B. monomer  
 C. isomer  
 D. allotropes

**Organic compounds are soluble in \_\_\_\_\_?**

- A. polar solvent  
 B. non-polar solvent  
 C. alkalies  
 D. water

**Methane is used in power generation in chemical industries being a \_\_\_\_\_?**

- A. natural gas  
 B. good caloric value  
 C. cheaper  
 D. All

**The process in which larger molecule with higher molecular weight breaks down into smaller molecules with lower molecular weight \_\_\_\_\_?**

- A. polymerization  
 B. pyrolysis  
 C. isomerism  
 D. no such process occurs

**The metallic sound produced by engine due to the pre-ignition of fuel is called \_\_\_\_\_?**

- A. knocking  
 B. reforming  
 C. cracking  
 D. a and c

**Which of the following can be used as anti-knocking agent ?**

- A.  $PbCl_2$   
 B.  $(C_2H_5)_4Pb$

- C.  $(C_2H_5)_2Pb$   
 D. all of the above

**Isomerism which is present only in alkene is \_\_\_\_\_?**

- A. structural isomerism  
 B. metamerism  
 C. cis-trans isomerism  
 D. both b and c

**Compound containing benzene ring in their structure are \_\_\_\_\_?**

- A. aliphatic  
 B. aromatic  
 C. carboxylic acid  
 D. carbohydrates

**Which of the following is an amide \_\_\_\_\_?**

- A.  $R-NH_2$   
 B.  $RCONH_2$   
 C.  $R-NH-R$   
 D.  $C_6H_5NH_2$

**Only sigma bonds are present in \_\_\_\_\_?**

- A. propene  
 B. butanoic acid  
 C. butanal  
 D. ethoxy ethane

**The structure of ethyne is \_\_\_\_\_?**

- A. angular  
 B. trigonal  
 C. linear  
 D. trigonal planar

**The general formula of cycloalkene is \_\_\_\_\_?**

- A.  $C_nH_{2n}$   
 B.  $C_nH_{2n+2}$   
 C.  $C_nH_{2n-1}$   
 D.  $C_nH_{2n-2}$

**$C_5H_{12}$  has the number of isomers \_\_\_\_\_?**

- A. one  
 B. two

- C. three  
D. four

Octane number can be improved by \_\_\_\_\_?

- A. Isomerization  
B. Adding  $(C_2H_5)_4 Pb$   
C. Adding  $(CH_3)_4 Pb$   
**D. All**

Octane number 2,2,4-trimethyl pentane is \_\_\_\_\_?

- A. 100**  
B. 90  
C. 80  
D. 70

Propene can exhibit \_\_\_\_\_?

- A. cis-trans isomerism  
B. geometric isomerism  
C. both a & b  
**D. none of the above**

Pentane and 2-methyl butane have the same \_\_\_\_\_?

- A. Boiling point  
B. Melting point  
**C. Percentage composition**  
D. Structural formula

The first organic compound was synthesized in laboratory by \_\_\_\_\_?

- A. Wohler**  
B. Kolbe  
C. Berzilius  
D. Berthelot

First organic compound synthesized in laboratory was \_\_\_\_\_?

- A. tartaric acid  
B. ethyl alcohol  
C. methanol  
**D. urea**

The property of carbon chain formation is called \_\_\_\_\_?

- A. catenation**  
B. hybridization

- C. polymerization  
D. solvation

The organic compounds having very high molecular weight are called \_\_\_\_\_?

- A. carboxylic acids  
B. ketones  
C. aldehydes  
**D. polymers**

Rate of reactions of most organic compounds are \_\_\_\_\_?

- A. very slow  
B. very fast  
**C. slow**  
D. no regular character present

Coal is produced after a long time decay of \_\_\_\_\_?

- A. animals  
B. fossils  
**C. wood**  
D. all of the above

Crude oil is blackish coloured liquid produced after the decay of organic matter present between \_\_\_\_\_?

- A. earth layer  
B. mountains  
**C. sedimentary rocks**  
D. rocks

At low temperature and pressure cracking can be done in presence of catalyst \_\_\_\_\_?

- A.  $Al_2O_3$   
B.  $Fe_2O_3$   
**C.  $Al_2O_3$  and  $SiO_2$**   
D.  $Fe_2O_3$  and  $SiO_2$

Which one of the following compounds shows intense knocking ?

- A. n-pentane  
B. iso-heptane  
C. iso-octane  
**D. n-heptane**

Ether functional group can be represented as \_\_\_\_\_?

- A. OH
- B. R-CO-R
- C. R-O-R**
- D. R-COOH

A single atom or group of atoms which gives characteristic properties to a compound is called \_\_\_\_\_?

- A. radical
- B. hydrocarbon
- C. functional group**
- D. ion

2-propanol and 1-propanol show the isomerism \_\_\_\_\_?

- A. metamerism
- B. functional group isomerism
- C. geometric isomerism
- D. position isomerism**

In  $sp^3$  hybridization the expected geometry of molecules will be \_\_\_\_\_?

- A. square planar
- B. trigonal pyramidal
- C. tetrahedral**
- D. linear

In cyano group the carbon atom shows which kind of hybridization \_\_\_\_\_?

- A.  $sp^2$
- B.  $sp$**
- C.  $sp^3$
- D. none of the above

the fractional distillation of petroleum produces gasoline up to \_\_\_\_\_?

- A. 10%
- B. 15%
- C. 20%**
- D. 30%

Which is not heterocyclic compound \_\_\_\_\_?

- A. Furan
- B. Thiophene

- C. Aniline**
- D. Pyridine

Which one is not state function \_\_\_\_\_?

- A. Internal energy
- B. Enthalpy
- C. Gibbs free energy
- D. Work**

If internal energy of the system is increased \_\_\_\_\_?

- A. Change in state of the system is increased
- B. Temperature of the system may rise
- C. Chemical reaction may take place
- D. All**

A reaction has values of  $\Delta H$  and  $\Delta S$  which are both positive. The reaction \_\_\_\_\_?

- A. Is spontaneous
- B. Spontaneity is temperature dependent
- C. Has an increasing free energy
- D. Is non-spontaneous**

The environment in which a system is studied is \_\_\_\_\_?

- A. State function
- B. phase
- C. surrounding**
- D. state

Anything which depends upon initial and final state of a system is \_\_\_\_\_?

- A. environment
- B. surrounding
- C. state function**
- D. enthalpy

Reaction in which heat evolves is called \_\_\_\_\_?

- A. endothermic
- B. spontaneous
- C. non-spontaneous
- D. exothermic**

Pumping of water uphill is \_\_\_\_\_?

A. spontaneous process

**B. non-spontaneous process**

C. irreversible process

D. reversible process

**Which one of the following is a state function**  
\_\_\_\_\_?

A. pressure

B. temperature

C. enthalpy

**D. all of the above**

**Enthalpy of a reaction can be measured by**  
\_\_\_\_\_?

**A. glass calorimeter**

B. manometer

C. Barometer

D. thermometer

**Most of thermodynamic parameters**  
**are**\_\_\_\_\_?

A. system

B. surrounding

C. phase

**D. state functions**

**Two fundamental ways to transfer energy**  
**are**\_\_\_\_\_?

A. pressure and temperature

B. pressure and volume

**C. heat and work**

D. heat and volume

**Enthalpy change can be**\_\_\_\_\_?

A. calculated by Hess law

B. can be measured by calorimeter

**C. both A and B**

D. none

**Enthalpy of combustion for food fuel and other**  
**compounds can be measured accurately**  
**by**\_\_\_\_\_?

A. glass calorimeter

**B. bomb calorimeter**

C. thermometer

D. manometer

**When enthalpy of reactants is higher than**  
**product then reaction will**  
**be**\_\_\_\_\_?

A. endothermic

B. spontaneous

C. non-spontaneous

**D. exothermic**

**State function the macroscopic property of**  
**system depends upon**\_\_\_\_\_?

A. path of reaction

B. initial state

C. final state

**D. initial and final state**

**CuSO<sub>4</sub> + Zn → ZnSO<sub>4</sub> + Cu**  
**is**\_\_\_\_\_?

**A. Spontaneous reaction**

B. Non-spontaneous reaction

C. Endothermic

D. Exothermic

**Total energy of a system is**\_\_\_\_\_?

**A. P.E + K.E**

B. P.E + heat energy

C. K.E + heat energy

D. P.E + mechanical energy

**Unit of heat in SI system is**\_\_\_\_\_?

**A. J**

B. KCal

C. Cal

D. GJ

\_\_\_\_\_ **is study about energy of a**  
**chemical system ?**

**A. thermochemistry**

B. thermodynamics

C. chemical kinetics

D. stoichiometry

**Which of the following has strongest**  
**intermolecular forces of attraction ?**

A. Hydrogen (H<sub>2</sub>)

B. Chlorine (Cl<sub>2</sub>)

**C. Iodine (I<sub>2</sub>)**

D. Methane (CH<sub>4</sub>)

When substance moves from a solid to a liquid state all of the following changes occur except \_\_\_\_\_?

- A. Molecules become more disordered
- B. K.E of the molecules decreases**
- C. Intermolecular forces become weaker
- D. Molecule become further separated

In order to mention the boiling point of water at 110°C the external pressure should be ?

- A. Between 760 torr and 1200 torr**
- B. Between 200 torr and 760 torr
- C. 765 torr
- D. any value of pressure

Vapour pressure of water at 100°C is \_\_\_\_\_?

- A. 55 mm Hg
- B. 760 mm Hg**
- C. 355 mm Hg
- D. 1489 mm Hg

Liquid crystal is discovered by \_\_\_\_\_?

- A. William Crooks
- B. Fredrick Reinitzer**
- C. J.J Thomson
- D. Bravis

Hydrogen bonding is involved in \_\_\_\_\_?

- A. Solubility
- B. Cleansing action of detergents
- C. Biological molecules
- D. All**

Forces of attraction which may be present between all kinds of atoms and molecules are \_\_\_\_\_?

- A. intramolecular
- B. intermolecular
- C. van der Waal**
- D. Dipole-induced dipole

The quantity of heat required to convert one mole of liquid into its vapours at its boiling point is called molar heat of \_\_\_\_\_?

- A. vaporization**
- B. evaporation
- C. crystallization
- D. sublimation

Water has maximum density at \_\_\_\_\_?

- A. 0°C
- B. 2°C
- C. 4°C**
- D. 100°C

Formation of vapours from the surface of a liquid is called \_\_\_\_\_?

- A. vapourization
- B. evaporation**
- C. condensation
- D. cracking

The attractive forces between the partial positive end of one molecule and partial negative end of other molecule are called \_\_\_\_\_?

- A. Dipole-dipole forces**
- B. Ion dipole-dipole forces
- C. London dispersion forces
- D. Debye forces

Vapour pressure is not affected by \_\_\_\_\_?

- A. Surface area**
- B. temperature
- C. intermolecular forces
- D. atmospheric pressure

Table salt crystallizes with a \_\_\_\_\_?

- A. Face centered cubic lattice
- B. body centered cubic lattice**
- C. simple cubic lattice
- D. orthorhombic lattice

During which process empty spaces between particles become minimum ?

- A. ionization
- B. condensation**
- C. fusion
- D. evaporation

Which one of the following has highest volatility\_\_\_\_\_?

- A. Diethyl ether
- B. Ethyl alcohol
- C. Water
- D. Ethylene glycol

If we provide very high amount of heat to a liquid its boiling point will\_\_\_\_\_?

- A. increase
- B. remains constant**
- C. decrease
- D. there will be no boiling

A solid may be made up of\_\_\_\_\_?

- A. Atoms
- B. Ions
- C. Molecules
- D. A, B, and C**

Amorphous substances posses\_\_\_\_\_?

- A. No definite geometry
- B. No definite heat of fusion
- C. No sharp melting points**
- D. All of the above

Boiling points of hydrocarbons increase with the increase in number of carbon atoms. It is mainly due to\_\_\_\_\_?

- A. More strength of H-bonding
- B. More strength of London forces**
- C. Less polarizability
- D. All of the above

The phenomenon in which a compound exists in two or more crystalline forms is called \_\_\_\_\_?

- A. Isomorphism
- B. Polymorphism**
- C. Anisotropy
- D. Allotropy

Bucky balls is an allotropic form of\_\_\_\_\_?

- A. Sulphur
- B. Carbon**
- C. Silica
- D. Tin

Isomorphous substances have \_\_\_\_\_?

- A. Same physical and chemical properties
- B. Same physical and different chemical properties
- C. Different physical and same chemical properties
- D. Different physical and chemical properties**

The pressure during the molar heat of fusion is kept\_\_\_\_\_?

- A. 0 atmosphere
- B. one atmosphere**
- C. 2 atmosphere
- D. 10 atmosphere

All the enthalpy changes are\_\_\_\_\_?

- A. Negative
- B. Positive
- C. May or may not be A or B**
- D. none

Which has strongest bonding in the solid state ?

- A. Hydrogen Chloride (HCl)
- B. Chlorine (Cl<sub>2</sub>)
- C. Xenon(Xe)
- D. Sodium Chloride (NaCl)**

When the atoms of third layer are arranged in such a way that they directly lie above the atoms of first layer then this arrangement is called\_\_\_\_\_?

- A. ABAB (hexagonal)**
- B. ABCABC (Cubic)
- C. Orthorhombic
- D. Rhombohedral

Which one is false for evaporation ?

- A. Surface phenomenon
- B. Continuous
- C. Exothermic**
- D. Cause cooling

Which one of the following does not show hydrogen bonding?

- A. Water
- B. Ethyl alcohol
- C. Phenol
- D. Diethyl ether**

Which one is a conductor but is not malleable ?

- A. Iron
- B. Graphite**
- C. Silver
- D. Platinum

The density of water may be \_\_\_\_\_?

- A. Equal to that of ice
- B. Greater than that of ice**
- C. Less than that of ice
- D. All are possible

Steam causes more severe burn than the boiling water because it possesses \_\_\_\_\_?

- A. Latent heat of fusion
- B. Latent heat of vaporization**
- C. Latent heat of sublimation
- D. All of the above

The conversion of vapours back into their liquid state is called \_\_\_\_\_?

- A. crystallization
- B. evaporation
- C. vaporization
- D. condensation**

When water freezes at 0°C its density decreases due to \_\_\_\_\_?

- A. Change of bond angles
- B. Cubic structure of ice
- C. Empty space present in the structure of ice**
- D. Change of bond length

The boiling point increases down the zero group element due to \_\_\_\_\_?

- A. Ion dipole forces
- B. London forces**
- C. Hydrogen bonding
- D. Dipole dipole forces

Rising of a wetting liquid in a capillary tube is due to \_\_\_\_\_?

- A. Surface tension
- B. Cohesive forces
- C. Adhesive forces**
- D. viscosity

The number of formula units in 29.25g of common salt \_\_\_\_\_?

- A.  $6.022 \times 10^{23}$
- B.  $3.01 \times 10^{23}$**
- C.  $2 \times N_A$
- D.  $4 \times 6.022 \times 10^{23}$

Liquid gets the shape of the container when it is poured into it. Which one of the following reasons justifies it ?

- A. Liquid do not have definite shape
- B. Liquid do not have definite volume
- C. Liquid is highly compressible
- D. Liquid molecules can slide over each other**

Molar heat of vaporization of water is \_\_\_\_\_?

- A. 40.7 KJ/mole**
- B. 40.7 J/mole
- C. 40.7 cal/mole
- D. 40.7 Kcal/mole

Crystallites are present in \_\_\_\_\_?

- A. crystalline solids
- B. amorphous solids**
- C. liquid crystals
- D. all of the above

A malleable solid is one which can be \_\_\_\_\_?

- A. Converted into wires
- B. Converted into thin sheets**
- C. Melted easily
- D. All of the above

Crystalline solids can be identified easily from their \_\_\_\_\_?

- A. Sharp melting point**
- B. Definite geometry
- C. Transition temperature
- D. Colour

The viscosity of solids is \_\_\_\_\_?

- A. Infinite
- B. Negligible
- C. Medium
- D. No concept of viscosity in solid

Which solids are called true solids \_\_\_\_\_?

- A. Metallic
- B. Amorphous
- C. Crystalline
- D. Vitreous

The number amino acid units for each turn of helix on average are \_\_\_\_\_?

- A. 21
- B. 23
- C. 25
- D. 27

If a physical and chemical change takes place at a constant pressure then the heat change during the process is called \_\_\_\_\_?

- A. Heat of transition
- B. Heat of fusion
- C. Enthalpy change
- D. All of above

The amount of heat absorbed when one mole of a liquid is changed into gas at its boiling point is \_\_\_\_\_?

- A. Molar heat of sublimation
- B. Molar heat of fusion
- C. Molar heat of vapourization
- D. Latent heat of that liquid

All of the following were theorized by Bohr in his description of the atom except \_\_\_\_\_?

- A. Angular momentum of electrons in multiples of  $h/2\pi$
- B. Electrons revolve in discrete circular orbits
- C. Energy of each electron is directly proportional to  $n^2$
- D. Electrons radiate energy continuously in a given orbit.

The magnetic quantum number (QN) has its values determined directly by the value of \_\_\_\_\_?

- A. Principal (QN)
- B. Azimuthal (QN)
- C. Spin (QN)
- D. Both A & B

The maximum number of electron in a sub shell with  $l = 3$  is \_\_\_\_\_?

- A. 6
- B. 10
- C. 14
- D. 18

When an atom absorbs energy the lines in the spectrum will appear which are \_\_\_\_\_?

- A. Brighter
- B. Darker
- C. Colourless
- D. Hard to locate

Which one is not true about cathode rays ?

- A.  $9.11 \times 10^{-31}$  Kg
- B. Cast shadow
- C. Heat up the platinum foil
- D. Cannot ionize

Rutherford's planet like structure was defective and unsatisfactory because \_\_\_\_\_?

- A. Moving e- accelerate towards the nucleus
- B. Continuous spectrum
- C. behavior of electron remain unexplained
- D. all

Splitting of spectral lines when atom is subjected to magnetic field is called \_\_\_\_\_?

- A. Zeemans effect
- B. Starks effect
- C. Photo electric effect
- D. Compton effect

Which one of the following explain the shape of orbitals \_\_\_\_\_?

- A. Principal of quantum number  
**B. Azimuthal quantum number**  
 C. Magnetic quantum number  
 D. Spin quantum number

Pressure in gas discharge tube was kept \_\_\_\_\_?

- A. 10 torr  
 B. 1 torr  
 C. 0.1 torr  
**D. 0.01 torr**

Angle of deflection was studied by \_\_\_\_\_?

- A. Hitorff  
 B. Stoney  
 C. William Crookes  
**D. J.Perrin**

Positive rays give flash on \_\_\_\_\_?

- A. AgNO<sub>3</sub> plate  
 B. AgCl plate  
 C. ZnO  
**D. ZnS**

The value of e/m ratio of electron is \_\_\_\_\_?

- A.  $6.02 \times 10^{23}$  C/kg  
 B.  $1.7588 \times 10^{20}$  C/kg  
 C.  $9.1095 \times 10^{-31}$  C/kg  
**D.  $1.7588 \times 10^{11}$  C/kg**

Planks theory says energy is emitted \_\_\_\_\_?

- A. In continuous manner  
**B. Discontinuous manner**  
 C. Simultaneously  
 D. In the form of heat

2nd orbit is \_\_\_\_\_ away from nucleus of H-atom as compared to 1st orbit is ?

- A. 2-times  
 B. 3-times  
**C. 4-times**  
 D. 6 times

The correct electronic configuration of Cu is \_\_\_\_\_?

- A. [Ar]4s<sup>1</sup>  
 B. [Ar]4s<sup>2</sup>  
**C. [Ar]3d<sup>10</sup>4s<sup>1</sup>**  
 D. [Ar]3d<sup>9</sup>4s<sup>2</sup>

Atomic orbits having same energy are called \_\_\_\_\_?

- A. Degenerate orbitals**  
 B. Bonding molecular orbitals  
 C. Anti bonding molecular orbitals  
 D. Half filled orbitals

When electrons collide with heavy metals than \_\_\_\_\_ are produced?

- A. Beta-rays  
 B. Alpha-rays  
**C. X-rays**  
 D. Gamma-rays

Atom with higher atomic number produces X-rays of \_\_\_\_\_?

- A. Shorter wavelength**  
 B. Larger wavelength  
 C. X-ray not produced  
 D. All are possible

Space around nucleus where finding probability of electrons is maximum is called \_\_\_\_\_?

- A. Orbital**  
 B. Orbit is elliptical  
 C. subshell  
 D. Electron cloud

Electronic configuration of K is \_\_\_\_\_?

- A. [Ar]4s<sup>2</sup>  
**B. [Ar]4s<sup>1</sup>**  
 C. [Kr]5s<sup>1</sup>  
 D. [He]2s<sup>1</sup>

Milikan used \_\_\_\_\_ in his atomizer?

- A. Milk  
 B. Honey  
**C. Oil**  
 D. Water

Spectrum is produced due to \_\_\_\_\_?

- A. Different wavelength**  
 B. Different colours  
 C. Different intensities  
 D. all have little contribution

**When electron jump into orbit 1 then series obtained is \_\_\_\_\_?**

- A. Lyman**  
 B. Paschen  
 C. Pfund  
 D. Brackett

**Splitting of spectral lines when atoms are subjected to strong electric field is called \_\_\_\_\_?**

- A. Zeeman effect  
**B. Stark effect**  
 C. Photoelectric effect  
 D. Compton effect

**Three quantum number have been derived from equation of \_\_\_\_\_?**

- A. de-Broglie  
 B. Plancks  
**C. Schrodinger**  
 D. Heisenberg

**The letters s p d and f are used to represent which quantum numbers \_\_\_\_\_?**

- A. Principal  
**B. Azimuthal**  
 C. Magnetic  
 D. Spin

**The atomic number of an element having maximum number of unpaired electrons in p-subshell is \_\_\_\_\_?**

- A. 7**  
 B. 10  
 C. 12  
 D. 16

**Colour of fluorescence produced by cathode rays depends upon \_\_\_\_\_?**

- A. Temperature  
 B. Pressure  
 C. Volume  
**D. Composition of glass**

**Positive rays are produced \_\_\_\_\_?**

- A. By burning of gas  
 B. By cooling of the gas  
**C. By the bombardment of cathode rays on gas molecules**  
 D. From anode like cathode rays produced from cathode

**The relationship between energy of a photon of light and its frequency is given by \_\_\_\_\_?**

- A. de-Broglie dual nature of matter  
 B. Bohrs model  
**C. Plancks Quantum theory**  
 D. Rutherfords atomic model

**The velocity of the photon \_\_\_\_\_?**

- A. Is independent of wavelength**  
 B. Depends upon source  
 C. Depends upon its frequency  
 D. Equals to the square of amplitude

**Atom cannot be divided into simple units theorized by \_\_\_\_\_?**

- A. Rutherford  
**B. Dalton**  
 C. Bohr  
 D. Schrodinger

**The number of fundamental particles in an atom of the lightest isotope carbon are \_\_\_\_\_?**

- A. 6  
 B. 12  
**C. 18**  
 D. 20

**Increase in atomic number is observed during \_\_\_\_\_?**

- A. Alpha emission  
**B. Beta emission**  
 C. Both A & B  
 D. Radioactivity

**Free neutron changes into proton with the emission of \_\_\_\_\_?**

- A. Neutrino  
 B. Electron  
**C. Both A & B**  
 D. Meson

**Charge of electron was measured by \_\_\_\_\_?**

- A. J.J Thomson  
**B. Millikan**  
 C. Rutherford  
 D. Perrin

**Rutherford bombarded \_\_\_\_\_ particles in discovery of nucleus?**

- A. Gamma-rays  
**B. Alpha-rays**  
 C. Beta-rays  
 D. X-rays

**The maximum number of orbitals present in a subshell that is represented by Azimuthal quantum number = 3 will be \_\_\_\_\_?**

- A. 1  
 B. 3  
 C. 5  
**D. 7**

**Pfund series are produced in the spectrum of hydrogen atom \_\_\_\_\_?**

- A. when electrons jump down to 2nd- orbit  
 B. when electrons jump down to 3rd- orbit  
 C. when electrons jump down to 4th- orbit  
**D. when electrons jump down to 5th- orbit**

**Sommerfelds modification in Bohrs model is \_\_\_\_\_?**

- A. Orbit is cylindrical  
**B. Orbit is elliptical**  
 C. Orbit is longitudinal  
 D. Orbit is asymmetrical

**Wavelength of electron was verified by \_\_\_\_\_?**

- A. Moseley  
**B. Davisson and Germer**  
 C. Einstein  
 D. Roentgen

**Quantum number which tells the energy of electron is \_\_\_\_\_?**

- A. n**  
 B. l  
 C. m  
 D. s

**\_\_\_\_\_ can expel protons from paraffins ?**

- A. Electron  
 B. Positron  
**C. Neutron**  
 D. None of above has such capability

**Centrifugal forces are balanced in atom by \_\_\_\_\_?**

- A. Attractive forces**  
 B. Repulsive force  
 C. Electrons  
 D. Neutrons

**When 6d orbital is complete the entering electron goes into \_\_\_\_\_?**

- A. 7f  
 B. 7s  
**C. 7p**  
 D. 7d

**Neutrons moving with an energy of 1.2 MeV are called \_\_\_\_\_?**

- A. Fast neutrons**  
 B. Slow neutrons  
 C. Moderate neutrons  
 D. All are possible

**Which of the following way is used for classification of chromatography ?**

- A. Shape  
 B. Phase  
 C. Mechanism  
**D. All**

**Which of the following technique is used for the separation of insoluble particles from liquids ?**

- A. Filtration**  
 B. Crystallization

- C. Solvent extraction  
D. Chromatography

**Fluted filter paper is used to \_\_\_\_\_?**

- A. Filter hot solution  
B. Avoid premature crystallization  
**C. Increase the rate of filtration**  
D. Decrease the area

**A substance having very high vapour pressure at its melting point on heating will show \_\_\_\_\_?**

- A. Melting  
**B. Sublimation**  
C. Decomposition  
D. Condensation

**A technique of partition chromatography in which the solvent is in a pool at the bottom of container \_\_\_\_\_?**

- A. Adsorption chromatography  
**B. Ascending chromatography**  
C. Radial chromatography  
D. Descending chromatography

**Branch of chemistry that deals with the complete qualitative and quantitative analysis of a substance is \_\_\_\_\_?**

- A. Stoichiometry  
B. Physical chemistry  
**C. Analytical chemistry**  
D. Quantum chemistry

**Estimation of amounts of different components in a sample is \_\_\_\_\_?**

- A. Quantitative analysis**  
B. Qualitative analysis  
C. Stoichiometry  
D. Physical chemistry

**The solid which is left over the filter paper as a result of filtration \_\_\_\_\_?**

- A. Insoluble particles  
**B. residue**  
C. crystals  
D. mud

**Gooch Crucibles are made up of \_\_\_\_\_?**

- A. plastic  
B. fibre  
**C. porcelain**  
D. steel

**Sintered crucible is made up of \_\_\_\_\_?**

- A. Plastic  
**B. glass**  
C. porcelain  
D. fiber

**Separation of a solid from its hot saturated solution by cooling is called \_\_\_\_\_?**

- A. vapourization  
B. solvent extraction  
C. filtration  
**D. crystallization**

**Which of the following technique is simple and efficient to purify a substance \_\_\_\_\_?**

- A. Filtration  
B. Sublimation  
C. Crystallization  
**D. Solvent extraction**

**95% ethanol is called \_\_\_\_\_?**

- A. methylated spirit  
B. wood spirit  
**C. rectified spirit**  
D. absolute alcohol

**Ratio of the amount of solute in organic and aqueous solvent is \_\_\_\_\_?**

- A. Retardation factor  
**B. Distribution co-efficient**  
C. Distribution in aqueous solution  
D. All statements are wrong

**Animal charcoal adsorbs the coloured \_\_\_\_\_?**

- A. impurities**  
B. crystals

- C. solvents  
D. both A & B

**Crystallization does not involve \_\_\_\_\_?**

- A. heating  
**B. sublimation**  
C. cooling  
D. vaporization

**In CCl<sub>4</sub> I<sub>2</sub> shows \_\_\_\_\_?**

- A. Red colour  
**B. Purple colour**  
C. Blue colour  
D. Yellow colour

**Direct conversion of solids into vapours is called \_\_\_\_\_?**

- A. Solvent extraction  
**B. sublimation**  
C. crystallization  
D. vaporization

**Without suction pump filtration is \_\_\_\_\_?**

- A. Fast process  
**B. Slow process**  
C. Rapid process  
D. All are possible

**The use of CaCl<sub>2</sub> and PCl<sub>5</sub> in the process of crystallization is as a \_\_\_\_\_?**

- A. oxidizing agent  
B. reducing agent  
**C. drying agent**  
D. colouring agent

**In solvent extraction ether is used to separate products of organic synthesis from \_\_\_\_\_?**

- A. water**  
B. iodine  
C. hydrochloric acid  
D. gases

**In crystallization if the solvent is inflammable then direct heating is \_\_\_\_\_?**

- A. needed  
**B. avoided**  
C. depends on temperature  
D. crystallization does not involve heating

**Rate of filtration can be increased by applying gentle suction \_\_\_\_\_?**

- A. Gooch crucible  
**B. Filter paper**  
C. Sintered crucible  
D. All of the above

**Size of filter paper is selected according to the amount of \_\_\_\_\_?**

- A. solution  
**B. amount of insoluble solute**  
C. amount of soluble solute  
D. Amount of solvent

**The tip of funnel should touch the wall of the breaker in order to avoid \_\_\_\_\_?**

- A. Inconsistent flow of filtration  
**B. splashing**  
C. premature crystallization  
D. all of above

**The technique used to separate components of mixture in solid phase ?**

- A. Crystallization  
B. Filtration  
**C. Sublimation**  
D. Solvent extraction

**Identification of the components of a sample is \_\_\_\_\_?**

- A. Quantitative analysis  
**B. Qualitative analysis**  
C. Stoichiometry  
D. Physical chemistry

**Different components of a mixture have different R<sub>f</sub> values due to \_\_\_\_\_?**

- A. Polar solvent used  
B. Combination of solvents used  
**C. Their different distribution coefficients in the solvent**  
D. Distributive law

A process controlled by Distributive law is \_\_\_\_\_?

- A. Crystallization
- B. Sublimation
- C. Solvent extraction**
- D. Filtration

Safe and the most reliable method of drying crystals is through \_\_\_\_\_?

- A. Filter paper
- B. Vacuum desiccators**
- C. Oven
- D. None of these

Silica gel and alumina are used as \_\_\_\_\_?

- A. Mobile phase
- B. Stationary phase**
- C. Mixed phase
- D. Single phase

The solvent or mixture of solvents used for separation of compounds is called \_\_\_\_\_?

- A. Stationary phase
- B. Mobile phase**
- C. Dynamic phase
- D. Static phase

Sintered glass is a porous material used for \_\_\_\_\_?

- A. absorption
- B. adsorption
- C. filtration**
- D. sublimation

Which is not related pair of term used in analytical techniques \_\_\_\_\_?

- A. Filtrate residue
- B. Sublimate sublimation**
- C. Drying desiccator
- D. Separating funnel mother liquor

The major steps involved in complete quantitative analysis are \_\_\_\_\_?

- A. 2
- B. 3

- C. 4
- D. 5

Selection of filter paper depends on size of particles to be \_\_\_\_\_?

- A. filtered**
- B. dried
- C. decolorized
- D. decanted

Which is not a sublime material \_\_\_\_\_?

- A. Iodine
- B. Benzoic acid
- C. Ammonium chloride
- D. Potash alum**

Shaking two immiscible liquids increases \_\_\_\_\_?

- A. Length of contact
- B. Volume of contact
- C. Area of contact**
- D. all of above

The solution remaining after the formation of crystals is called \_\_\_\_\_?

- A. Mother liquor
- B. Dilute solution**
- C. Residue
- D. both A & B

The ionization energy \_\_\_\_\_?

- A. Generally increases from left to right in a period**
- B. Does not change in a period
- C. Increase from top to bottom in a group
- D. Does not change in a group

Which type of bond is formed by overlap of p orbitals \_\_\_\_\_?

- A. Pi
- B. Sigma
- C. Both**
- D. Neither

The octet rule does not always hold for which of the following elements \_\_\_\_\_?

- A. C
- B. O
- C. F
- D. P**

Which of the following is the best explanation that CO<sub>2</sub> is non polar molecule \_\_\_\_\_?

- A. Linear geometry
- B. Dipole moment is zero**
- C. Sp hybridization
- D. None

Which one is not the absolute term of the element \_\_\_\_\_?

- A. Ionization energy
- B. Electron affinity
- C. Electro negativity**
- D. Atomic size

In O<sub>2</sub> each oxygen atom is hybridized \_\_\_\_\_?

- A. sp<sup>3</sup>
- B. sp<sup>2</sup>**
- C. sp
- D. All

Measurement of the degree of polarity is \_\_\_\_\_?

- A. Electron affinity
- B. Ionic character
- C. Ionization energy
- D. Dipole moment**

A specie with maximum number of unpaired electrons ?

- A. F
- B. H<sub>2</sub>O
- C. HF
- D. NH-2**

Force responsible to hold atoms together in a compound is called \_\_\_\_\_?

- A. Bond**
- B. Attractive force
- C. Interaction
- D. All of above represent same entity

In a period the atomic radius ?

- A. Increases
- B. Decreases**
- C. Remain same
- D. First decreases then increases

Energy required to remove electron from an atom \_\_\_\_\_?

- A. Ionization potential**
- B. Electronegativity
- C. Electron affinity
- D. Activation energy

Greater shielding effect corresponds to ionization energy value \_\_\_\_\_?

- A. Greater
- B. Lesser**
- C. Remain same
- D. No effect

Energy released or absorbed when electrons are added in atom is \_\_\_\_\_?

- A. Ionization potential
- B. Electronegativity
- C. Electron affinity**
- D. Activation energy

Elements of group IA IIA are \_\_\_\_\_?

- A. Electronegative
- B. Electropositive**
- C. Neutral
- D. IA is electropositive while IIA is electronegative

Mostly ionic compound are produced in between elements of \_\_\_\_\_?

- A. IA and VIA
- B. IA IIA and VIIA**
- C. IB and VIIB
- D. IA and IB

The Lewis acids are \_\_\_\_\_?

- A. Electron deficient**
- B. Electron rich
- C. Octet is complete
- D. No such acids exist

The geometry of ammonia is \_\_\_\_\_?

- A. Tetrahedral
- B. Square planner
- C. Trigonal bipyramidal
- D. Trigonal Pyramidal**

**By combining n atomic orbitals no. of hybrid orbitals will be \_\_\_\_\_?**

- A.  $2n$
- B.  $n$**
- C.  $3n$
- D. impossible to predict

**Geometry of simple molecule having  $sp^3$  hybrid orbital is \_\_\_\_\_?**

- A. Triangular
- B. Tetrahedral**
- C. Square planner
- D. Linear

**$\pi$  bonds are produced by overlapping of \_\_\_\_\_?**

- A. Un-hybrid orbitals**
- B. Hybrid orbitals
- C. Hybrid and un hybrid orbitals
- D. atomic orbital and hybrid orbital

**Molecular orbital which have higher energy than atomic orbitals is called \_\_\_\_\_?**

- A. Bonding molecular orbital
- B. Antibonding molecular orbital**
- C. Hybrid orbital
- D. Super atomic orbital

**Bond order for  $N_2$  molecule is \_\_\_\_\_?**

- A. 2
- B. 1
- C. 3**
- D. 4

**Unit of dipole moment is \_\_\_\_\_?**

- A. Debye**
- B. Poise
- C. Pascal
- D. Newton

**The relative attraction of the nucleus for the electrons in a chemical bond is called \_\_\_\_\_?**

- A. Ionization energy
- B. Electron affinity
- C. Electro negativity**
- D. None of the above

**Which of the following will have highest value of electron affinity \_\_\_\_\_?**

- A. F
- B. Cl**
- C. Br
- D. I

**Which of the solid does not contain covalent bond \_\_\_\_\_?**

- A. Copper**
- B. Ice
- C. Diamond
- D. Graphite

**Shielding effect across the period \_\_\_\_\_?**

- A. Increases
- B. Decreases
- C. Constant**
- D. None

**Which one has maximum number of unpaired electrons ?**

- A. 6X
- B. 7Y**
- C. 9Z
- D. 13W

**Molecular orbitals are filled according to \_\_\_\_\_?**

- A. Auf bau principle
- B. Hunds rule
- C. Paulis Exclusion principle
- D. All these**

**Which one shows high %age of the ionic character ?**

- A.  $H_2O$
- B. HF**

- C. HCl  
D. HBr

Which of the following have their outer most shell complete in atomic form ?

- A. Noble gases  
B. Alkali metals  
C. Coinage metals  
D. Gun metals

Energy of atom in compound is \_\_\_\_\_?

- EA. Higher than individual  
B. Lesser than individual  
C. No change  
D. Impossible to predict

An atom loses or gains electrons to \_\_\_\_\_?

- A. Gain stability  
B. Form a bond  
C. Complete its outermost shell  
D. all are accurate justifications

In a group ionic radius ?

- A. Increases  
B. Decreases  
C. No change  
D. Variable trend

Ionization energy in a period generally \_\_\_\_\_?

- A. Increases  
B. Decreases  
C. No change  
D. Variable trend

Elements having high I.P values are \_\_\_\_\_?

- A. Metals  
B. Non metals  
C. Liquids  
D. Solids

In a period electronegativity from left to right \_\_\_\_\_?

- A. Increases  
B. Decreases

- C. Remain constant  
D. Variable trend

Ionic bond is produced after complete transfer of \_\_\_\_\_?

- A. Nucleus  
B. Neutrons  
C. Electrons  
D. Protons

Bond will be ionic when E.N difference of bonded atom is \_\_\_\_\_?

- A. Equal to 1.7  
B. Greater than 1.7  
C. Less than 1.7  
D. No specificity exists

Which one of the following has polar covalent bond ?

- A. HF  
B. CH<sub>4</sub>  
C. H<sub>2</sub>  
D. N<sub>2</sub>

Sharing of 1 electron pair by one species forms \_\_\_\_\_?

- A. Single covalent bond  
B. Hydrogen bond  
C. Double covalent bond  
D. Coordinate covalent bond

Orbitals of same energy produced after mixing of orbitals of different energy are called \_\_\_\_\_?

- A. Degenerate orbitals  
B. Generate orbitals  
C. Hybrid orbitals  
D. Zeeman orbitals

Geometry of molecule will be pyramidal if the outer post shell of the central atom has \_\_\_\_\_?

- A. 3 bond pair one lone pair  
B. 2 bond pair 2 lone pair  
C. 1 bond pair 3 lone pair  
D. 3 lone pair 1 bond pair

According to VESPR Model the geometry of molecule having 5 bond pair in outer most shell will be \_\_\_\_\_?

- A. Triangular
- B. Square planner
- C. Trigonal bipyramidal**
- D. Octahedral

Unpaired electron in a molecule gives \_\_\_\_\_ character ?

- A. Ferromagnetic
- B. Paramagnetic**
- C. Diamagnetism
- D. Both A & B

Product of charge and distance is called \_\_\_\_\_?

- A. Pressure
- B. Bond length**
- C. Work
- D. Dipole moment

on  $sp^3$  hybridization \_\_\_\_\_?

- A. All p-orbitals are involved
- B. One s and 3 p-orbitals are involved**
- C. one p-orbital is involved
- D. four p-orbitals are involved

What is the relative rate of effusion of CO and CO<sub>2</sub> ?

- A. CO is 1.25 times faster than CO<sub>2</sub>**
- B. CO is 3.75 times faster than CO<sub>2</sub>
- C. CO is 1.25 times faster than CO
- D. Both diffuse at the same rate

Which of the following is not considered as an intermolecular force between molecules ?

- A. Coordinate covalent bonds**
- B. Hydrogen bonds
- C. Debye forces
- D. London dispersion forces

Ideal gasses have all the following characteristics except ?

- A. Absence of intermolecular forces
- B. Collisions among the molecules of an ideal gas are perfectly elastic

- C. The molecules occupy no space**
- D. All of the above are correct

Under what conditions the gases deviate from the ideal behavior ?

- A. High temperature
- B. Low temperature
- C. High pressure
- D. B and C**

Which one has the lowest density at room temperature ?

- A. Ne
- B. N<sub>2</sub>
- C. NH<sub>3</sub>**
- D. CO

The introduction of Kelvin scale in thermodynamic is according to \_\_\_\_\_?

- A. Boyles law
- B. Charles law**
- C. Daltons law
- D. Grahams law

At constant temperature the pressure of an ideal gas is doubled its density becomes \_\_\_\_\_?

- A. Half
- B. Double**
- C. Same
- D. None

The diffusion of gases at absolute zero will be \_\_\_\_\_?

- A. Unchanged
- B. Slightly decreased
- C. Slightly increased
- D. Zero**

Critical temperature for different gases is different and depends upon \_\_\_\_\_?

- A. Size of molecule
- B. Shape of molecule
- C. Intermolecular attractions
- D. All of the above**

What is the simplest form of matter ?

- A. Gas
- B. Liquid
- C. Solid
- D. Semi solid

Which state of matter has the lowest density ?

- A. Gas
- B. Liquid
- C. Solid
- D. Plasma

The solid particles only posses \_\_\_\_\_?

- A. Translational motion
- B. Vibrational motion**
- C. Rotational motion
- D. All of above motions

If  $1/V$  is plotted on X-axis and pressure on Y-axis at constant temperature what should appear \_\_\_\_\_?

- A. Straight line parallel to x-axis
- B. Straight line parallel to y-axis
- C. Straight line**
- D. Curve

One mole of an ideal gas at 546.5 K under 2 atm pressure has a volume of \_\_\_\_\_?

- A. 22.414 m<sup>3</sup>
- B. 44.828 dm<sup>3</sup>
- C. 22.414 dm<sup>3</sup>**
- D. 11.212 cm<sup>3</sup>

Which one is not the partial pressure of oxygen in the lungs ?

- A. 0.1526 atm
- B. 116 mm of Hg
- C. 116 torr
- D. 1 atm**

The kinetic molecular theory of gases was put forward in 1738 by \_\_\_\_\_?

- A. Boltzman
- B. Maxell
- C. Clausius
- D. Bernoulli**

Hydrogen effuses four times more rapidly than volume of an unknown gas molar mass of unknown gas should be \_\_\_\_\_?

- A. 16 gmol<sup>-1</sup>
- B. 32 gmol<sup>-1</sup>**
- C. 48 gmol<sup>-1</sup>
- D. 64 gmol<sup>-1</sup>

The processes of effusion and diffusion are best understand by \_\_\_\_\_?

- A. Daltons law
- B. Avogadros law
- C. Grahams law**
- D. Charles law

The non-ideal behaviour results chiefly from \_\_\_\_\_?

- A. Intermolecular attraction and infinite volume
- B. Elastic collisions and finite volume
- C. Intermolecular attractions and finite volume**
- D. Intermolecular attraction only

Linds method is employed for \_\_\_\_\_?

- A. Separation of gases
- B. Expansion of gases
- C. Compression of gases
- D. Liquefaction of gases**

Which of these gases diffuse more quickly than oxygen ?

- A. H<sub>2</sub>S
- B. NO**
- C. Cl<sub>2</sub>
- D. N<sub>2</sub>O

The weakest (in strength) of the following intermolecular forces is \_\_\_\_\_?

- A. Hydrogen bonding
- B. Vander Waals force**
- C. Forces among the polar molecules
- D. Ionic bond

Which of the following statements is true about plasma \_\_\_\_\_?

- A. It may be the first state of matter
- B. It is not a phase transition

C. It is a conductor of electricity

**D. All of the above**

**0.5 mole of nitrogen gas and 0.5 mole of carbon monoxide gas at STP have same \_\_\_\_\_?**

A. Value of  $a$

B. Mass

C. Atoms

**D. Both B and C**

**Which of the following option is incorrect about gases ?**

**A. All molecules move with same speed**

B. All molecules behave independently

C.  $PV / RT = n$

D. All gases cannot be liquefied through Linds Method

**In how many forms do matter exists ?**

A. Three

**B. Four**

C. Five

D. Two

**What is the abundant form of matter on earth ?**

A. Gas

B. Liquid

**C. Solid**

D. Plasma

**For a gas where volume and pressures are  $1\text{dm}^3$  and  $2\text{ atm}$  respectively what should be its new volume when pressure is increased to  $6\text{ atm}$  at constant temperature ?**

A.  $1/2\text{dm}^3$

**B.  $1/3\text{dm}^3$**

C.  $1/4\text{dm}^3$

D.  $2/3\text{dm}^3$

**Which one is the right value for R ?**

**A.  $0.0821\text{ atm dm}^3\text{k}^{-1}\text{mol}^{-1}$**

B.  $0.0821\text{ atm m}^3\text{k}^{-1}\text{mol}^{-1}$

C.  $2\text{ cal k}^{-1}\text{ mol}^{-1}$

D.  $8.314\text{ Nm}^2\text{k}^{-1}\text{mol}^{-1}$

**The partial pressure exerted by the water vapours is called \_\_\_\_\_?**

A. Surface tension

**B. Aqueous tension**

C. Vapour pressure

D. Hydraulic pressure

**The spreading of fragrance or scent in air is due to \_\_\_\_\_?**

**A. Diffusion**

B. Effusion

C. Attraction with air

D. Low density

**The highest temperature at which a substance can exist as a liquid is called its \_\_\_\_\_?**

**A. Critical temperature**

B. Standard temperature

C. Absolute temperature

D. Upper consolute temperature

**What do we call to sudden expansion of plasma ?**

A. Avogadro's law

B. Graham's law of diffusion

**C. Joule Thompson effect**

D. Dalton's law of partial pressure

**What will be the pressure of 1 mole of an ideal gas maintained at  $300\text{ K}$  and  $250\text{cm}^3$  volume ?**

**A.  $98.5\text{ atm}$**

B.  $96.7\text{ atm}$

C.  $95.8\text{ atm}$

D.  $97.1\text{ atm}$

**Who made volume and pressure correction to explain deviation of gases from ideal behaviour ?**

A. Clausius

B. Boltzmann

C. Charles

**D. Vander waal**

**The gases become non-ideal at \_\_\_\_\_?**

A. High temperature and high pressure

B. Low temperature and low pressure

C. High temperature and low pressure

**D. Low temperature and high pressure**

The pH of  $10^{-3}$  mol  $\text{dm}^{-3}$  of an aqueous solution of  $\text{H}_2\text{SO}_4$  is \_\_\_\_\_?

- A. 3
- B. 2.7**
- C. 2
- D. 1.5

If a buffer solution of higher pH than seven is to be made we use \_\_\_\_\_?

- A. Strong acid and strong base
- B. Weak acid and strong base
- C. Weak acid and strong base
- D. Weak acid and its salt with strong base**

$\text{AgCl}$  dissolved with conc ( $2 \times 10^{-2}$ )  $K_{sp}$  will be \_\_\_\_\_?

- A.  $3.6 \times 10^{-6}$
- B.  $3.6 \times 10^{-5}$
- C.  $7.2 \times 10^{-6}$
- D.  $4 \times 10^{-4}$**

Which of the following will not change the concentration of ammonia at the equilibrium?

- A. Increase of pressure
- B. Increase of volume
- C. Addition of catalyst**
- D. Decrease of temperature

For a reaction involving only gases at  $25^\circ\text{C}$  the equilibrium constant can be expressed in terms of molarity  $K_c$  or partial pressure  $K_p$ . Which is true about the numerical value of  $K_p$ ?

- A.  $K_c$  is generally greater than  $K_p$
- B.  $K_c$  is generally less than  $K_p$
- C.  $K_c$  is generally equal to  $K_p$
- D.  $K_c$  is equal to  $K_p$  if the total moles of reactants and products are equal**

Which one of the following aqueous solutions will be basic?

- A.  $\text{NaCl}$
- B.  $\text{Na}_2\text{SO}_4$
- C.  $\text{Na}_2\text{CO}_3$**
- D.  $\text{FeCl}_3$

Reaction which proceeds in both directions is called \_\_\_\_\_?

- A. reversible**
- B. irreversible
- C. spontaneous
- D. non-spontaneous

Conversion of reactant into product in unit time is called \_\_\_\_\_?

- A. rate of forward reaction**
- B. rate of backward reaction
- C. rate constant
- D. rate co-efficient

Unit of  $K_c$  is \_\_\_\_\_?

- A.  $\text{moles}^2\text{dm}^{-6}$
- B.  $\text{moles}^{-2}\text{dm}^{-6}$
- C.  $\text{moles}^+2\text{dm}^{-6}$
- D.  $K_c$  may or may not have units**

Rate expression for ammonia synthesis is \_\_\_\_\_?

- A.  $K_c = x^2/(a-x)(b-x)$
- B.  $K_c = x^2/v(a-x)$
- C.  $K_c = 4 \times 2/(a-2x)^2(b-x)$
- D.  $K_c = 4x^2v^2/(a-x)(b-3x)^3$**

Catalyst used to speed up the reaction of ammonia synthesis is \_\_\_\_\_?

- A.  $\text{V}_2\text{O}_5$
- B.  $\text{V}_2\text{O}_5$  and Pt
- C. Fe
- D. Pieces of Fe crystals are embedded in fused mixture of  $\text{MgO}$ ,  $\text{Al}_2\text{O}_3$  and  $\text{SiO}_2$**

By the addition of base in water pH will be \_\_\_\_\_?

- A. more than 7**
- B. less than 7
- C. equal to 7
- D. no effect

Negative log of molar concentration of  $\text{H}^+$  ions is called \_\_\_\_\_?

- A. pH**
- B. pOH
- C. pKa
- D. pKw

Any substance which accepts  $H^+$  is base favours the concept \_\_\_\_\_?

- A. Lowrys
- B. Lewis
- C. Arrhenius
- D. None of these

When sparingly soluble salt is in equilibrium with molar concentration of its oppositely charged ion when the product is called \_\_\_\_\_?

- A. common ion effect
- B. solubility product**
- C. dissociation constant
- D. dissociation constant for an acid

Addition of  $CH_3COOH$  and  $CH_3COONa$  gives in water \_\_\_\_\_?

- A. Standard solution
- B. buffer solution
- C. acidic buffer solution
- D. both B & C**

Solubility of any salt can be determined from \_\_\_\_\_?

- A.  $K_a$
- B.  $K_b$
- C.  $K_c$
- D.  $K_{sp}$**

By decreasing the pressure the reaction will go to that direction where \_\_\_\_\_?

- A. volume is decreased
- B. volume increased**
- C. heat absorbed
- D. no. of moles of specie decreased

Equilibrium state is achieved quickly by the addition of \_\_\_\_\_?

- A. reactants
- B. acid
- C. base
- D. catalyst**

Which one of the following is a buffer solution ?

- A. brine
- B. blood**

- C. glue
- D. solution of  $CuSO_4$

Solution having the property of a very little change in pH on adding a small amount of strong acid or base is called \_\_\_\_\_?

- A. buffer solution**
- B. normal solution
- C. standard solution
- D. neutral solution

Conjugated base of a weak acid is \_\_\_\_\_?

- A. weak
- B. strong**
- C. moderately weak
- D. unstable

$K_c$  value has \_\_\_\_\_?

- A. No units
- B. Units
- C. Both A & B**
- D. None

Sodium benzoate and benzoic acid are mixed in equimolar ration to form buffer if  $pK_a$  is 2 what will be the pH ?

- A. 0
- B. 1
- C. 2**
- D. any one

In which of the following equilibria will  $K_c$  and  $K_p$  have the same value ?

- A.  $PCl_5 = PCl_3 + Cl_2$
- B.  $N_2 + 3H_2 = 2NH_3$
- C.  $2CO + O_2 = 2CO_2$
- D.  $N_2 + O_2 = 2NO$**

Which of following is not a base \_\_\_\_\_?

- A.  $KOH$
- B.  $NH_3$
- C.  $PH_3$
- D.  $BF_3$**

Which set of solutes will form a buffer when dissolved in water to make 1 liter of solution ?

- A. 0.0002M HCl  
 B. 0.2 mole of NaCl with 0.2 mole of HNO<sub>3</sub>  
 C. 0.4 mole of CH<sub>3</sub>COOH with 0.4 mole of NaOH  
**D. 0.4 mole of NH<sub>3</sub> with 0.2 mole of HCl**

**Chemical equilibrium state is \_\_\_\_\_?**

- A. dynamic state**  
 B. static state  
 C. free state  
 D. unidirectional state

**At start of reaction the concentration of reactants is \_\_\_\_\_?**

- A. high**  
 B. low  
 C. according to K<sub>c</sub>  
 D. constant

**In case of gases K<sub>c</sub> is replaced by \_\_\_\_\_?**

- A. K<sub>a</sub>  
 B. K<sub>b</sub>  
**C. K<sub>p</sub>**  
 D. K

**When the value of K<sub>c</sub> is very small then \_\_\_\_\_?**

- A. reaction is at start  
**B. product conc. Is maximum**  
 C. reactant conc. Is minimum  
 D. reaction is completed

**Idea of pH and pOH was put forward by \_\_\_\_\_?**

- A. Gibbs  
 B. Einstein  
**C. Sorenson**  
 D. Chadwick

**K<sub>a</sub><10<sup>-3</sup> means \_\_\_\_\_?**

- A. Very strong base  
**B. Very weak acid**  
 C. Very strong acid  
 D. Very strong salt

**Which of the following is a macro nutrient ?**

- A. boron  
 B. iron  
 C. copper  
**D. carbon**

**Three elements needed for the healthy growth of plants are \_\_\_\_\_?**

- A. N P K**  
 B. N K C  
 C. N S P  
 D. N Ca P

**Residence time of methane in the atmosphere is \_\_\_\_\_?**

- A. 3 – 7 days  
 B. 2 -3 days  
**C. 3 – 7 years**  
 D. 2 – 3 years

**Hypochlorous acid is used for disinfecting the water it reacts with the dissolved ammonia producing \_\_\_\_\_?**

- A. NH<sub>2</sub>Cl  
 B. NHCl<sub>2</sub>  
 C. NCl<sub>2</sub>  
**D. all of the above**

**Acid present in acid rain may be \_\_\_\_\_?**

- A. H<sub>2</sub>SO<sub>4</sub>  
 B. HNO<sub>3</sub>  
**C. both A and B**  
 D. none

**Which of the following is not a condition for the formation of smog ?**

- A. sufficient NO  
 B. sunlight  
 C. less movement of air  
**D. winds**

**In which of the following layer of atmosphere there is more thickness of ozone layer ?**

- A. troposphere  
**B. stratosphere**  
 C. mesosphere  
 D. photosphere

**Which of the following air pollutants is more dangerous for ozone layer ?**

- A. CFC
- B. CO<sub>2</sub>
- C. CO
- D. Oxides of nitrogen

**Which statement is wrong ?**

- A. the amount of ozone layer is greater in the region close to the equator
- B. ozone acts as filter for UV radiations
- C. in the equatorial region it acts as pollutant
- D. CFCs play effective role in removing O<sub>3</sub> in the stratosphere

**In the purification of portable water the coagulant used is \_\_\_\_\_?**

- A. alum
- B. nickel sulphate
- C. copper sulphate
- D. barium sulphate

**Newspaper can be recycled again and again how many times ?**

- A. 2
- B. 3
- C. 4
- D. 5

**The main pollutant of leather tanneries in the waste water is \_\_\_\_\_?**

- A. chromium III
- B. chromium IV
- C. chromium V
- D. chromium VI

**Which substance can be used for disinfecting water ?**

- A. KMnO<sub>4</sub>
- B. Alums
- C. Ozone
- D. All

**Which one of the following makes the bulk of hydrospheres content ?**

- A. oceans
- B. glaciers & icecaps

- C. fresh water lakes and ponds
- D. All have equal distribution

**The percentage of suspended solid waste in raw water is removed by coagulation is \_\_\_\_\_?**

- A. 60
- B. 70
- C. 80
- D. 90

**The main product of bacterial action is \_\_\_\_\_?**

- A. Nox
- B. NO<sub>2</sub>
- C. N<sub>2</sub>O<sub>3</sub>
- D. NO

**Pollutants have adverse effect over \_\_\_\_\_?**

- A. Biosphere
- B. Ecosystem
- C. Both a & b
- D. Hydrosphere

**Which of the following is not a heavy industry ?**

- A. iron
- B. fertilizer
- C. paper
- D. none

**Requirement of macronutrient per acre of the land is \_\_\_\_\_?**

- A. 5 to 200 kg
- B. 20-200 kg
- C. 200-400 kg
- D. 30-400 kg

**Which of the following is not a secondary pollutant \_\_\_\_\_?**

- A. ozone
- B. carbonic acid
- C. sulphuric acid
- D. carbon dioxide

**Major cause of SO<sub>2</sub> on global scale is \_\_\_\_\_?**

- A. volcanoes  
 B. electric sparks  
 C. combustion  
 D. all

The yellow colour in photochemical smog is due to presence of \_\_\_\_\_?

- A. dinitrogen oxide  
**B. nitrogen dioxide**  
 C. chlorine gas  
 D. chlorine dioxide

Which of the following is not primary pollutant \_\_\_\_\_?

- A. SO<sub>3</sub>  
 B. CO  
 C. NO  
**D. H<sub>2</sub>SO<sub>4</sub>**

Which of the following gases is the main cause of acid rain ?

- A. CO  
**B. NO<sub>2</sub>**  
 C. both a & b  
 D. none of the above

Which of the following factors help to measure quality of water ?

- A. DO  
 B. BOD  
 C. COD  
**D. all of the above**

A single chlorine free radical can destroy how many ozone molecules ?

- A. 10  
 B. 100  
 C. 10000  
**D. 100000**

Chlorination of water may be harmful if the water contains \_\_\_\_\_?

- A. Ammonia**  
 B. Dissolved oxygen  
 C. Carbon dioxide  
 D. All

Which of the following is used as water disinfectant to avoid the formation of toxic compounds \_\_\_\_\_?

- A. Cl<sub>2</sub>  
 B. O<sub>3</sub>  
 C. ClO<sub>2</sub>  
**D. both B & C**

Ozone hole is substantial depletion of ozone in every year during \_\_\_\_\_?

- A. Aug – Nov  
**B. Sep – Nov**  
 C. Nov – Dec  
 D. Dec – Jan

Which of the following solutions of H<sub>2</sub>SO<sub>4</sub> is more concentrated ?

- A. 1 Molar solution**  
 B. 1 molal solution  
 C. 1 normal solution  
 D. all have same concentration

Which of the following is an example of liquid in gas solution?

- A. Opals  
 B. Dust particles in smoke  
 C. Paints  
**D. Fog**

Which of the following are the conditions of colligative properties \_\_\_\_\_?

- A. Non-electrolyte solute  
 B. Non-volatile solute  
 C. Dilute solution  
**D. All of the above**

When common salt is dissolved in water ?

- A. Boiling point of water decrease  
**B. Boiling point of water increase**  
 C. Boiling point of water remains same  
 D. None of the above

Homogeneous mixture of two or more than two compounds is called \_\_\_\_\_?

- A. solution**  
 B. compound  
 C. radical  
 D. ion

**Solution with maximum concentration of solute at given temperature is called \_\_\_\_\_?**

- A. Super saturated solution
- B. unsaturated solution
- C. saturated solution**
- D. dilute solution

**Number of moles in 1 kg of solvent is called \_\_\_\_\_?**

- A. normality
- B. molarity
- C. molality**
- D. mole fraction

**In partially miscible liquids the two layers are \_\_\_\_\_?**

- A. saturated solutions of each liquid**
- B. unsaturated solutions of each liquid
- C. normal solution of each liquid
- D. no layer formation takes place

**The relative lowering of vapour pressure is \_\_\_\_\_?**

- A. equal to the mole fraction of solvent
- B. equal to the mole fraction of solute
- C. directly proportional to the mole fraction of solute
- D. both B & C**

**Mixtures which distill over without change in composition called \_\_\_\_\_?**

- A. zeotropic mixture
- B. azeotropic mixture**
- C. amphoteric mixture
- D. ideal solution

**Solubility of  $KClO_3$  gives \_\_\_\_\_?**

- A. continuous and falling solubility curve
- B. discontinuous and falling solubility curve
- C. continuous and rising solubility curve**
- D. discontinuous and rising solubility curve

**Boiling point elevations can be measured by \_\_\_\_\_?**

- A. Beckmanns method
- B. Landsbergers method**

- C. Linds method
- D. none of the above

**The compounds in which water molecules are added are called \_\_\_\_\_?**

- A. Hydrated ions
- B. double salts
- C. hydrates**
- D. complexes

**Solution of  $Na_2SO_4$  will be \_\_\_\_\_?**

- A. basic
- B. acidic
- C. neutral**
- D. cannot be predicted without data

**1 molar solution of glucose in water contains weight of glucose \_\_\_\_\_?**

- A. 180g/dm<sup>3</sup>**
- B. 170g/dm<sup>3</sup>
- C. 190g/dm<sup>3</sup>
- D. 195g/dm<sup>3</sup>

**Water of crystallization can be removed by \_\_\_\_\_?**

- A. drying
- B. heating**
- C. evaporation
- D. All of the above

**Which one of the following salt does not hydrolyzed \_\_\_\_\_?**

- A.  $Na_2SO_4$**
- B.  $AlCl_3$
- C.  $CuSO_4$
- D.  $NH_4Cl$

**Which of the following unit of concentration is independent of temperature ?**

- A. Molarity
- B. Molality**
- C. Mole fraction
- D. all

**The molal boiling point constant is the ration of the elevation of boiling point to \_\_\_\_\_?**

- A. Molarity
- B. Molality**
- C. More fraction of solvent
- D. Mole fraction of solute

**Which has the minimum freezing point ?**

- A. One Molal NaCl
- B. One molal KCl solution
- C. One molal CaCl<sub>2</sub>**
- D. One molal urea solution

**Which of the following substance do not show continuous solubility curve ?**

- A. KClO<sub>4</sub>
- B. Na<sub>2</sub>SO<sub>4</sub> · 10H<sub>2</sub>O**
- C. K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>
- D. PbCl<sub>2</sub>

**Every sample of matter with uniform properties and fixed composition is called \_\_\_\_\_?**

- A. solute
- B. solvent
- C. solution
- D. phase**

**The component of solution which is in smaller amount is called \_\_\_\_\_?**

- A. solvent
- B. solute**
- C. phase
- D. ion

**10ml of alcohol dissolve in 90ml of water unit of concentration used is \_\_\_\_\_?**

- A. % w/w
- B. % w/v
- C. % v/v**
- D. % v/w

**58.5g of NaCl per 1 dm<sup>3</sup> of solution of NaCl in water the concentration of solution will be \_\_\_\_\_?**

- A. 0.1 M
- B. 1 m
- C. 1 M**
- D. 0.1 N

**If the volume of solution is equal to sum of volumes of its all components then the solution \_\_\_\_\_?**

- A. will be an ideal solution**
- B. will be non-ideal solution
- C. will show deviations from Raoult's law
- D. both b & c

**The solution which distills over with change in composition \_\_\_\_\_?**

- A. ideal solution
- B. zeotropic solution**
- C. azeotropic solution
- D. non-ideal solution

**Concentration of solute molecule when they are in equilibrium with solid substance at particular temperature is called \_\_\_\_\_?**

- A. saturated solution
- B. solubility**
- C. unsaturated solution
- D. super saturated solution

**The determination of correct molecular weight from Raoult's law is applicable to \_\_\_\_\_?**

- A. a volatile solute in dilute solution
- B. a non-electrolyte & non volatile solute in concentrated solution
- C. a non-electrolyte & non volatile solute in concentrated solute
- D. non volatile solute in a dilute solution**

**Beckmann's apparatus is used to measure \_\_\_\_\_?**

- A. boiling point elevation
- B. depression in freezing point**
- C. lowering of vapour pressure
- D. lowering of osmotic pressure

**Hydration is a process in which \_\_\_\_\_?**

- A. Molecules are surrounded by solvent molecules
- B. Ions are surrounded by solvent molecules
- C. Both ions and molecules are surrounded by solvent molecules
- D. Both ions and molecules are surrounded by water molecules**

ppm means \_\_\_\_\_?

- A. parts of solute in 1000 parts of solvent
- B. parts of solvent in 1000 parts of solute
- C. parts of solute in one million parts of solution**
- D. parts of solvent in one million parts of solute

The relative lowering of vapour pressure is directly proportional to molality if the solution is \_\_\_\_\_?

- A. concentrated
- B. dilute**
- C. saturated solution
- D. all of the above

If electricity is passed through CuSO<sub>4</sub> solution by using Pt electrode then which of the following possible change occurs ?

- A. H<sub>2</sub> is deposited at cathode
- B. Colour of the solution becomes fade**
- C. Cu is deposited at anode
- D. All are possible

Which has maximum oxidation number ?

- A. N
- B. Cr
- C. S
- D. Mn**

In an electrolytic cell current flows ?

- A. From cathode to anode in outer circuit
- B. From anode to cathode outside the cell**
- C. From cathode to anode inside the cell
- D. both B & C

In a galvanic cell \_\_\_\_\_?

- A. Chemical energy is converted into electricity**
- B. Chemical energy is converted into heat
- C. Electrical energy is converted into chemical energy
- D. Electrical energy is converted into heat

Molten NaCl conducts electricity due to the presence of \_\_\_\_\_?

- A. Free electrons
- B. Free molecules
- C. Free ions**
- D. Atoms of Na and Cl

Electricity in voltaic cell is produced due to \_\_\_\_\_?

- A. neutralization
- B. oxidation
- C. reduction
- D. both B & C**

In electrolytic cell electricity carries \_\_\_\_\_?

- A. spontaneous reaction
- B. non-spontaneous reaction**
- C. neutralization
- D. all of above

In Galvanic cell electrons flow from anode to cathode through \_\_\_\_\_?

- A. external electric circuit**
- B. salt bridge
- C. movement of ions
- D. all of the above

The strength of solution of an element whose electrode potential is to be measured is \_\_\_\_\_?

- A. 2M
- B. 1N
- C. 1m
- D. 1M**

Voltaic cell is a \_\_\_\_\_?

- A. irreversible cell
- B. reversible cell
- C. alkaline cell
- D. all of the above**

Percentage of sulfuric acid in lead accumulator is \_\_\_\_\_?

- A. 40%
- B. 25%
- C. 30%**
- D. 50%

The half cells are interconnected through \_\_\_\_\_?

- A. wire
- B. salt bridge**
- C. electric circuit
- D. no connection exists

Which of the following element act as inert electrode \_\_\_\_\_?

- CCu
- B. Ag
- C. Pt**
- D. None

Stronger the oxidizing agent greater is the \_\_\_\_\_?

- A. Oxidation potential
- B. Reduction potential**
- C. Redox potential
- D. emf of cell

Which of the following cell is not rechargeable ?

- A. Lead storage battery
- B. Silver oxide cell**
- C. Fuel cell
- D. Ni-Cd cell

Which of the following is true in the case of Zn-Cu cell ?

- A. The flow of electrons takes place from copper to zinc
- B.  $E_{\text{red}}$  of copper electrode is less than that of zinc electrode
- C. Zinc acts as an anode and copper as cathode**
- D. All are correct

The degree of dissociation of weak electrolyte increases as \_\_\_\_\_?

- A. Pressure increases
- B. Dilution decreases
- C. Dilution increases**
- D. None

In electrolytic solution conductance of electricity is due to \_\_\_\_\_?

- A. free electrons
- B. ions**
- C. metals
- D. electrodes

Reaction at anode is called \_\_\_\_\_?

- A. oxidation**
- B. reduction

- C. redox
- D. decomposition

Decrease in oxidation number is called \_\_\_\_\_?

- A. oxidation
- B. reduction**
- C. oxidation-reduction
- D. all of above represent same entity

Right half cell contains \_\_\_\_\_ electrode?

- A. Al
- B. Zn
- C. Cu**
- D. Fe

Salt bridge transfers \_\_\_\_\_?

- A. electrons
- B. anion
- C. current
- D. ions**

$E_{\text{red}}$  of an element can be calculated by comparing it with \_\_\_\_\_?

- A. New electrode of same element
- B. SHE**
- C. 1M solution of ions of respective element
- D. 2M solution of HCl

Potential of SHE is considered as \_\_\_\_\_?

- A. zero**
- B. unity
- C. constant
- D. multiple of 1

Electrode potential of Zn is \_\_\_\_\_?

- A. oxidation
- B. reduction
- C. oxidation-reduction
- D. depends on the nature of the coupled electrode**

The element that act as anode always have \_\_\_\_\_ position in electrochemical cell?

- A. higher  
 B. lower  
 C. in middle  
 D. no effect of position

Greater value of standard reduction potential greater will be tendency \_\_\_\_\_?

- A. to get oxidized  
 B. to get reduced  
 C. to accept electrons  
 D. both B and C

Secondary cell is \_\_\_\_\_?

- A. rechargeable  
 B. non rechargeable  
 C. electrolytic cell  
 D. Daniel cell

Density of H<sub>2</sub>SO<sub>4</sub> in lead accumulator is \_\_\_\_\_?

- A. 1.25g/cm<sup>3</sup>  
 B. 1.3g/cm<sup>3</sup>  
 C. 1.20g/cm<sup>3</sup>  
 D. 1.15g/cm<sup>3</sup>

In alkaline battery the anode is made up of \_\_\_\_\_?

- A. MnO<sub>2</sub>  
 B. Zn  
 C. AgO<sub>2</sub>  
 D. cadmium

Apparent charge on atom in molecule is \_\_\_\_\_?

- A. valency  
 B. coordination number  
 C. oxidation number  
 D. charge number

In K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> the oxidation number of chromium is \_\_\_\_\_?

- A. 7  
 B. 6  
 C. -7  
 D. -6

The reduction potential Zn is \_\_\_\_\_?

- A. 0.76  
 B. -0.76  
 C. -0.55  
 D. 0.55

Coordination number of the transition element in [Pt Cl NO<sub>2</sub> (NH<sub>3</sub>)<sub>4</sub>]<sup>2-</sup> is \_\_\_\_\_?

- A. 2  
 B. 6  
 C. 4  
 D. 8

The oxidation number of central metal atom in [Ni(CO)<sub>4</sub>] is \_\_\_\_\_?

- A. 0  
 B. 2  
 C. 4  
 D. 6

Group VIB of transition elements contains \_\_\_\_\_?

- A. Zn Cd Hg  
 B. Fe Ru Os  
 C. Cr Mo W  
 D. Mn Te Re

The elements in which d or f orbitals are in the process of completion are \_\_\_\_\_?

- A. outer transition elements  
 B. inner transition elements  
 C. typical transition elements  
 D. transition elements

The melting points and boiling points upto middle of 3d- series \_\_\_\_\_?

- A. increases  
 B. decreases  
 C. remain same  
 D. no regular trend

Pure metal \_\_\_\_\_?

- A. corrode slowly  
 B. corrode rapidly  
 C. does not corrode easily  
 D. none of these

The correct electronic configuration of Cr is \_\_\_\_\_?

- A. [Ar]4s23d4
- B. [Ar] 4s23d4
- C. [Ar]4s03d5
- D. [Ar]4s13d5**

The oxidation state of transition elements is usually \_\_\_\_\_?

- A. variable**
- B. constant
- C. single
- D. infinite

Non-stoichiometric compounds of transition elements are called \_\_\_\_\_?

- A. hydrates
- B. hydrides
- C. binary compounds
- D. interstitial compounds**

The specie which donates electrons to central metal atom in coordination sphere is called \_\_\_\_\_?

- A. anion
- B. cation
- C. Ligand is positively charged**
- D. acid

Which of the following can form a chealate \_\_\_\_\_?

- A. ammine
- B. oxalato**
- C. carbonyl
- D. cyano

The compound or complex ion which has a ring in its structure \_\_\_\_\_?

- A. polydentate ligand
- B. chelate**
- C. monodentate ligand
- D. hydrate

Geometry of the complex compounds usually depends upon \_\_\_\_\_?

- A. type of ligands
- B. types of hybridization in the elements of ligands

**C. hybridization of central metal**

D. All of above

In pig iron the concentration of C-atom is \_\_\_\_\_?

- A. 0.12 — 0.25%
- B. 2.5 — 4.5%**
- C. 2.0 — 4.0%
- D. 0.25 — 2.5%

With impurities like P and S the open hearth furnace is lined with ?

- A. SiO<sub>2</sub>
- B. Fe<sub>2</sub>O<sub>3</sub>
- C. FeO
- D. CaO MgO**

Which is sold as fertilizer \_\_\_\_\_?

- A. CaSiO<sub>3</sub>
- B. Na<sub>2</sub>SiO<sub>3</sub>
- C. Ca<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub>**
- D. MnSiO<sub>3</sub>

When an active metal like Al comes in contact with less active element like Cu then it produces \_\_\_\_\_?

- A. dry cell
- B. galvanic cell**
- C. electrolytic cell
- D. A and B

Which of the following is typical transition metal ?

- A. Sc
- B. Y
- C. Cd
- D. Co**

K<sub>2</sub> (Cu(CN)<sub>4</sub>) which one is correct \_\_\_\_\_?

- A. Potassium tetra cyano cupperate
- B. Co-ordination number is 2
- C. Ligand is positively charged
- D. Central atom is present in avionic sphere**

The location of transition elements is in between \_\_\_\_\_?

- A. lanthanides & actinides  
**B. s and p block elements**  
 C. chalcogens and halogens  
 D. d and f block elements

**Compounds attracted by applied strong magnetic field are called \_\_\_\_\_?**

- A. diamagnetic  
**B. paramagnetic**  
 C. good conductor  
 D. ferromagnetic

**When light is exposed to transition element then electrons jump from lower orbitals to higher orbitals in \_\_\_\_\_?**

- A. orbitals of f-subshell  
 B. orbitals of d-subshell  
 C. orbitals of p-subshell  
**D. both A & B**

**When a compound of transition element is dissolved in a solution of salt then it produces \_\_\_\_\_?**

- A. simple ions  
**B. complex ions**  
 C. double salts  
 D. strong anions

**The species which donate two electron pairs in a coordination compound is called \_\_\_\_\_?**

- A. ligand  
 B. mono-dentate ligand  
 C. poly-dentate ligand  
**D. bi-dentate ligand**

**The central atom along with ligands is called \_\_\_\_\_?**

- A. complex ion  
**B. coordination sphere**  
 C. ligand  
 D. complex compound

**In complex compounds the oxidation number is written in \_\_\_\_\_?**

- A. English  
 B. Greek  
**C. Roman numeral**  
 D. Hebrew

**When the central atom of coordination compound is  $sp^3d^2$  hybridization the expected geometry will be \_\_\_\_\_?**

- A. tetrahedral  
 B. square planar  
 C. trigonal bipyramidal  
**D. octahedral**

**In the production of wrought iron Mg Si and P are removed in the form of \_\_\_\_\_?**

- A. oxides  
 B. silicates  
**C. slag**  
 D. carbonates

**Any process of chemical decay of metals due to the action of surrounding medium is called \_\_\_\_\_?**

- A. activation  
 B. enameling  
**C. corrosion**  
 D. coating

**Polymers described as large molecules built up from small repeating units called \_\_\_\_\_?**

- A. Biopolymers  
 B. Dimers  
**C. Monomers**  
 D. metamers

**The important monomers of acrylic resins is \_\_\_\_\_?**

- A. Vinyl chloride  
 B. Styrene  
**C. Methylmethacrylate**  
 D. Hexamethylenediamine

**Industrial materials and thermal power stations are coated with \_\_\_\_\_?**

- A. Polyester resins  
**B. Epoxy paints**  
 C. Polyamide resins  
 D. Polyvinyl chloride

**Common example of carbohydrates are \_\_\_\_\_?**

- A. Cellulose glycogen galactose
- B. Glyceraldehydes glucose peptone
- C. Glycerol phospho lipids collagen
- D. Legumin amylopectin albumin

**Hydrolysis of an oligosaccharide in the presence of acid yields \_\_\_\_\_?**

- A. one monosaccharide unit
- B. No monosaccharide unit
- C. 2-9 monosaccharide unit**
- D. many monosaccharide

**The process of polymerization was classified by \_\_\_\_\_?**

- A. Strecker
- B. Sabatier
- C. Runge
- D. W. H. Carothers**

**Protein attached to some non protein group is called \_\_\_\_\_?**

- A. Derived protein
- B. Sample protein
- C. Proteoses
- D. Conjugated protein**

**Lipids are soluble in \_\_\_\_\_?**

- A. Organic solvents**
- B. Organic and inorganic solvents
- C. Inorganic solvents
- D. Solubility has nothing to do with lipids

**Animal and vegetable fats are \_\_\_\_\_?**

- A. Glycerols
- B. Fatty acids
- C. Triesters formed from glycerol and fatty acids**
- D. Tetraesters formed from glycerol and fatty acids

**Triglycerides are easily hydrolyzed by enzymes called \_\_\_\_\_?**

- A. Lyases
- B. Ligases
- C. Lipases**
- D. Hydrolases

**Saponification is the hydrolysis of fat or oil with an \_\_\_\_\_?**

- A. Acid
- B. Alkali**
- C. Enzyme and alkali
- D. Enzyme and acid

**Enzymes from the same organism which catalyze same reaction but are chemically and physically distinct from each other are called \_\_\_\_\_?**

- A. Oxidoreductases
- B. Hydrolases
- C. Isoenzymes**
- D. Isomerases

**Enzyme proved useful in cancer treatment is \_\_\_\_\_?**

- A. Lactic dehydrogenase
- B. Alkaline phosphatase
- C. L-asparaginase**
- D. Cellulase

**Nucleic acids were first demonstrated in \_\_\_\_\_?**

- A. Pus cells**
- B. Sperm heads
- C. 1872
- D. all of the above

**The mechanism by which the genetic information can be duplicated is called \_\_\_\_\_?**

- A. Duplication
- B. Transcription
- C. Replication**
- D. Mutation

**The nitrogenous base different in RNA as compared to DNA is \_\_\_\_\_?**

- A. Cytosine
- B. Thymine**
- C. Adenine
- D. Guanine

**A polymer in which three different monomers combine called \_\_\_\_\_?**

- A. Copolymer
- B. Terpolymer**
- C. Homopolymer
- D. Biopolymer

**Polyester resins are the product of the reaction of \_\_\_\_\_?**

- A. Dihydric alcohol and dicarboxylic aromatic acids**
- B. Polyamines with aliphatic dicarboxylic acids
- C. Styrene in the presence of catalyst
- D. Epichlorohydrin with diphenylol propane

**Carbohydrates are polyhydroxy compounds of \_\_\_\_\_?**

- A. Glucose
- B. Glyceraldehydes
- C. Oligosaccharides
- D. Aldehydes and ketones**

**Nylon is obtained by heating \_\_\_\_\_?**

- A. Acrylic acid
- B. Epichlorohydrin
- C. Vinyl chloride
- D. Adipic acid with hexamethylene diamine**

**Amylose is \_\_\_\_\_?**

- A. Soluble in water**
- B. Insoluble in water
- C. Soluble in alcohol
- D. Partially soluble in alcohol

**All proteins yield \_\_\_\_\_ upon complete hydrolysis?**

- A. Nitrogen
- B. Amino acids**
- C. Carbon and hydrogen
- D. Sulphur

**Regular coiling or zigzagging of polypeptide through hydrogen bonding is its \_\_\_\_\_?**

- A. Quantum structure
- B. Secondary structure**
- C. Tertiary structure
- D. Primary structure

**Animal fats are located particularly in \_\_\_\_\_?**

- A. Skeleton tissues
- B. Cardiac tissues
- C. Connective tissues
- D. Adipose tissues**

**Lipopolysaccharides are examples of \_\_\_\_\_?**

- A. Derived lipids
- B. Simple lipids
- C. Compound lipids**
- D. Not a type of lipids

**Orgosterol is \_\_\_\_\_?**

- A. Orgocalciferol
- B. Vitamin D2
- C. Sterol**
- D. all of the above

**Enzymes that catalyze the transfer of groups within molecule are called \_\_\_\_\_?**

- A. Isomerases**
- B. Lyases
- C. Transferases
- D. Ligases

**Rate of enzymatic reaction is directly proportional to the concentration of \_\_\_\_\_?**

- A. Enzyme
- B. Substrate**
- C. Enzyme and substrate
- D. Enzyme and product

**Purines and pyrimidines are \_\_\_\_\_?**

- A. Enzymes
- B. Nitrogenous bases**
- C. Carbohydrates
- D. Lipids

**Nucleic acids direct the synthesis of \_\_\_\_\_?**

- A. Glucose
- B. Triglycerides
- C. Proteins**
- D. All

The fertility of the soil is improved by \_\_\_\_\_?

- A. Rotation of the crops
- B. Adding lime to the acid salts
- C. Adding manure and growing legumes
- D. All**

The fertilizers which provide single nutrient from NPK are called \_\_\_\_\_ fertilizer?

- A. straight**
- B. compound
- C. both a and b
- D. none of the above

Addition of urea to the soil is \_\_\_\_\_ reaction?

- A. endothermic
- B. exothermic**
- C. both a and b
- D. no heat energy is involved

The cooling of molten urea by air in the tower is called \_\_\_\_\_?

- A. prilling**
- B. evaporation
- C. condensation
- D. crystallization

DAP (Diammonium hydrogen phosphate) contains \_\_\_\_\_ plant nutrients?

- A. 60%
- B. 65%
- C. 70%
- D. 75%**

Calcareous material includes \_\_\_\_\_?

- A. lime stone
- B. marble
- C. chalk
- D. all of the above**

Which of the following processes is used for the synthesis of cement ?

- A. dry process
- B. wet process
- C. both**
- D. none

How many zones through which the charge passes in a rotary kiln ?

- A. 4**
- B. 3
- C. 2
- D. 5

Which one of the following set of raw material is most suitable for manufacture of urea ?

- A. CH<sub>4</sub> N<sub>2</sub> and CO<sub>2</sub>**
- B. H<sub>2</sub> N<sub>2</sub> and CO
- C. H<sub>2</sub> CO<sub>2</sub> and H<sub>2</sub>O
- D. H<sub>2</sub>O N<sub>2</sub> and H<sub>2</sub>

The percentage of nitrogen in urea is \_\_\_\_\_?

- A. 36%
- B. 46%**
- C. 56%
- D. 66%

Which one of the following fertilizers provides the nitrogen and phosphorus to the plant ?

- A. urea
- B. calcium superphosphate
- C. diammonium phosphate**
- D. potassium nitrate

Cement is a mixture of \_\_\_\_\_?

- A. clay and clinker
- B. clay lime stone and gypsum**
- C. lime stone and gypsum
- D. lime stone and clay

Cement is a mixture of so many compounds roasted in rotary kiln. Which substances has greater percentage ?

- A. Lime (CaO)**
- B. Silica (SiO<sub>2</sub>)
- C. Alumina (Al<sub>2</sub>O<sub>3</sub>)
- D. Magnesia (MgO)

Which sequence of steps is correct for the manufacture of cement ?

- A. crushing heating mixing grinding
- B. crushing mixing heating grinding and mixing
- C. crushing grinding mixing heating**
- D. mixing heating grinding crushing

The composition of mixture of clay and lime stone in the raw for cement material is \_\_\_\_\_?

- A. 75% lime stone and 25% clay
- B. 25% lime stone and 75% clay
- C. 15% lime stone and 55% clay
- D. 55% lime stone and 15% clay

The important function of burning zone in the rotary kiln is \_\_\_\_\_?

- A. to dry the moisture of slurry
- B. to decompose lime stone to unslaked lime
- C. combination of different oxides like CaO SiO<sub>2</sub> Fe<sub>2</sub>O<sub>3</sub> and Al<sub>2</sub>O<sub>3</sub>
- D. to reduce the impurities

Which of the following is incorrect statement about nitrogen importance ?

- A. It enhances plant growth
- B. It is involved in the synthesis of protein and nucleic acids
- C. it accelerates fruits and flowers growth
- D. It is involved in the chlorophyll synthesis

Which of the following is macronutrient ?

- A. Cu
- B. Cl
- C. H
- D. Zn

Which of the following is the most suitable catalyst for ammonia synthesis ?

- A. Pt
- B. ZnO + Cr<sub>2</sub>O<sub>3</sub>
- C. Fe in fused mixture of Al<sub>2</sub>O<sub>3</sub> + SiO<sub>2</sub> + MgO
- D. All of the above

Which of the following fertilizers is not useful for paddy rice ?

- A. urea
- B. DAP
- C. Ammonium sulphate
- D. Ammonium nitrate

Which of the following potassium fertilizers are more useful for horticultural crops tobacco & potatoes ?

- A. KCl
- B. KNO<sub>3</sub>
- C. K<sub>2</sub>SO<sub>4</sub>
- D. KMnO<sub>4</sub>

Argillaceous material does not include \_\_\_\_\_?

- A. vlay
- B. marine shells
- C. slate
- D. blast furnace slag

The nutrients which are required in very small amount for the normal growth of plants are called \_\_\_\_\_?

- A. nitrogenous fertilizers
- B. micronutrients
- C. phosphorus fertilizer
- D. all of the above

Which one of the following is an inorganic fertilizer ?

- A. manure
- B. urea
- C. ammonium nitrate
- D. All

The potassium present in plant help the plant to \_\_\_\_\_?

- A. form starch sugar and fibrous material
- B. ripen the seeds and fruits
- C. increase the resistance against disease
- D. all the above statements are correct

What is clinker ?

- A. roasted calcareous material
- B. roasted argillaceous material
- C. roasted calcareous and argillaceous material
- D. roasted gypsum

Phosphorus helps in the growth of \_\_\_\_\_?

- A. root
- B. leave
- C. stem
- D. seed

Which one of the following raw material is not present in the cement ?

- A. lime stone
- B. gypsum
- C.  $\text{KNO}_3$
- D. iron oxide**

The sequence of zones in the rotary kiln are as \_\_\_\_\_?

- A. dry zone burning zone decomposition zone cooling zone
- B. cooling zone burning zone decomposition zone dry zone
- C. burning zone cooling zone decomposition zone
- D. dry zone decomposition zone burning zone cooling zone**

The rate of reaction \_\_\_\_\_?

- A. Increases as the reaction proceeds
- B. Decreases as the reaction proceeds**
- C. Remains the same as the reaction proceeds
- D. May decrease or increase as the reaction proceeds

The specific rate constant of a first order reaction depends on the \_\_\_\_\_?

- A. Time
- B. Concentration of the reactant
- C. Temperature**
- D. Concentration of the product

The value of activation energy is primarily determined by \_\_\_\_\_?

- A. Temperature
- B. Effective collision**
- C. Concentration of reactants
- D. Chemical nature of reactants and products

Spontaneous reactions are \_\_\_\_\_?

- A. Moderate
- B. Slow
- C. Fast**
- D. not natural

Unit of rate of reaction is \_\_\_\_\_?

- A. Moles  $\text{dm}^{-3} \text{sec}^{-1}$**
- B. Moles  $\text{dm}^{-3}$
- C. Moles  $\text{sec}^{-1}$
- D.  $\text{Mol}^{-1} \text{dm}^3 \text{sec}^{-1}$

Rate of disappearance of reactant is equal to \_\_\_\_\_?

- A. Rate of reaction**
- B. Rate of formation of product
- C. Energy released during reaction
- D. A and B

For 3rd order reaction the half life is inversely proportional to initial concentration of reactants \_\_\_\_\_?

- A. Single
- B. Square**
- C. Cube
- D. Raise to power four

Radiations are absorbed in \_\_\_\_\_?

- A. Spectrophotometer method**
- B. Dilatometric method
- C. Optical relation method
- D. Refractometric method

Energy of reactant higher than energy of product favours A. Endothermic \_\_\_\_\_?

- B. Exothermic**
- C. Moderate reaction
- D. No reaction

Which of the following will have very high rate of reaction ?

- A. Double decomposition reaction
- B. Neutralization reaction
- C. Ionic reactions
- D. all of above**

Anything which increases rate of reaction without being involved in the reaction \_\_\_\_\_?

- A. Promoter
- B. Catalyst**
- C. Inhibitor
- D. All of the above

When catalysts and reactants are in more than one phase it is \_\_\_\_\_?

- A. Homogeneous catalysis
- B. Heterogeneous catalysis**

- C. Catalysis  
D. Ea

**Biocatalytical proteins are \_\_\_\_\_?**

- A. Enzymes  
B. Substrate  
C. Lipids  
D. any of above

**An enzyme has its specificity due to \_\_\_\_\_?**

- A. Substrate  
B. Structure  
C. Temperature  
D. Pressure

**A substance which increases the reactivity of enzyme is called \_\_\_\_\_?**

- A. Promoters  
B. Inhibitors  
C. Stimulators  
D. Non-activators

**When the reaction completes in more than one steps rate of reaction will be determined by \_\_\_\_\_?**

- A. Fast step  
B. Slowest step  
C. All steps  
D. Molecularity of the reaction

**Energy of activation for backward reaction is less than forward reaction for \_\_\_\_\_ reactio?**

- A. Endothermic  
B. Exothermic  
C. Moderate  
D. Fast

**Which statement is incorrect about catalyst \_\_\_\_\_?**

- A. it is used in smaller amount  
B. decrease activation energy  
C. specific in action  
D. it affects specific rate constant

**Which of the following type of reaction is 3rd order reaction \_\_\_\_\_?**

- A.  $2\text{N}_2\text{O}_5 = 2\text{N}_2\text{O}_4 + \text{O}_3$   
B.  $\text{NO} + \text{O}_3 \rightarrow \text{NO}_2 + \text{O}_2$   
C.  $2\text{FeCl}_3 + 6\text{KI} \rightarrow 2\text{FeI}_2 + 6\text{KCl} + \text{I}_2$   
D. None of these

**The addition of a catalyst to the reaction system \_\_\_\_\_?**

- A. Increases the rate of forward reaction only  
B. Increases the rate of reverse reaction  
C. Increases the rate of forward but decreases the rate of backward reaction  
D. Increases the rate of forward as well as backward reaction equally

**On increasing the temperature the rate of reaction increases mainly because \_\_\_\_\_?**

- A. The activation energy of the reaction increases  
B. Concentration of the reacting molecules increases  
C. Collision frequency increases  
D. None of these

**Sum of exponents of molar concentration is called \_\_\_\_\_?**

- A. Order of reaction  
B. Molecularity  
C. Rate of reaction  
D. Average of reaction

**In rate expression the concentration of reactants is negative. It shows \_\_\_\_\_?**

- A. Concentration of reactant does not change  
B. Concentration of product increases  
C. Concentration of reactant decreases  
D. Concentration of reactant increases

**When a graph is plotted between  $1/T$  on X-axis and  $\log k$  on y-axis a straight line is obtained with a negative slope which has two end in \_\_\_\_\_?**

- A. I and II quadrant  
B. II and III quadrant  
C. III and IV quadrant  
D. II and IV quadrant

**Rate of reaction when concentration of reactants are taken as unity is called \_\_\_\_\_?**

- A. Arrhenius constant
- B. Molecularity
- C. Specific rate constant**
- D. Ideal rate constant

Which order of reaction obeys the relation  $t_{1/2} = 1/K_a$  \_\_\_\_\_?

- A. First order
- B. Second order**
- C. Third order
- D. Zero order

Activated complex is formed due to \_\_\_\_\_?

- A. Pressure
- B. Effective collision**
- C. Ineffective collisions
- D. Temperature

Energy required to form transition state is called \_\_\_\_\_?

- A.  $E_a$**
- B. P.E
- C. V
- D. K.E

Greater the conc. Of reactant \_\_\_\_\_?

- A. Greater will be  $dx/dt$**
- B. Lesser will be  $dx/dt$
- C.  $dx/dt$  will be moderate
- D. any of above

The substances that reduces the effectiveness of a catalyst are called \_\_\_\_\_?

- A. Promoters
- B. Poisoning catalysts**
- C. Inhibitors
- D. pro-catalysts

Each catalyst has \_\_\_\_\_?

- A. Specificity
- B. Special structure
- C. Its own  $E_a$
- D. all of above**

A catalyst can not effect \_\_\_\_\_?

- A. Products
- B. Chemical equilibrium
- C. Reactants
- D. both A & B**

Co-enzymes are \_\_\_\_\_?

- A. Non proteineous**
- B. Proteineous
- C. sugars
- D. lipids

End name of enzyme is \_\_\_\_\_?

- A. yl
- B. ase**
- C. one
- D. al

For determining the order of reaction we use \_\_\_\_\_?

- A. Refractometric method
- B. Dilatometric method
- C. Optical activity method
- D. Half life method**

Elements in the same vertical group of the periodic table have same \_\_\_\_\_?

- A. Number of valence electrons**
- B. Atomic number
- C. Atomic mass
- D. Atomic volume

Which set of elements is listed in order of increasing ionization energy ?

- A.  $Sb < As < S < P < Cl$**
- B.  $Cl < Sb < P < As < S$
- C.  $As < Cl < P < S < Sb$
- D.  $Sb < As < Cl < S < P$

Which of the p-block elements are not representative elements ?

- A. Alkali metals (I-A)
- B. Group-14 elements (IV-A)
- C. Group-18 elements (VIII-A)**
- D. Halogens (VII-A)

Which of the following will not form crystalline structure with opporitely charged ions \_\_\_\_\_?

- A. H<sup>+</sup>
- B. H<sup>-</sup>
- C. Mg<sup>2+</sup>
- D. Ca<sup>2+</sup>

**Periodic table provides a basic framework to study elements with respect to their \_\_\_\_\_?**

- A. Physical properties
- B. Chemical properties
- C. Properties of their compounds
- D. All**

**Concept of Triads was introduced by \_\_\_\_\_?**

- A. Dobereiner**
- B. Newland
- C. Mendeleev
- D. Al-Razi

**Elements with similar chemical properties appear in the \_\_\_\_\_?**

- A. Same family**
- B. Same period
- C. p block elements
- D. Right upper corner

**In modern periodic table all the elements are arranged in ascending order of \_\_\_\_\_?**

- A. Valency
- B. Atomic mass
- C. Atomic number**
- D. Valence electrons

**Inner transition elements are called \_\_\_\_\_?**

- A. Lanthanides
- B. Actinides
- C. Rare earth metals
- D. All**

**Non-metals usually form \_\_\_\_\_ oxides?**

- A. Acidic**
- B. Amphoteric
- C. Neutral
- D. All of the above

**Best position of hydrogen in the periodic table is above I.A Group which is mainly due to \_\_\_\_\_?**

- A. Both are electropositive
- B. Similar outer most shell electronic configuration
- C. Both form ionic compounds
- D. All**

**Which one of the following sets consists of all coinage metals ?**

- A. Cu Hg Au
- B. Cu Ag Au**
- C. Ag Au Hg
- D. Cu Fe Au

**Which of the p-block elements are not representative elements ?**

- A. Alkali metals (I-A)
- B. Group-14 elements (IV-A)
- C. Group-18 elements (VIII-A)**
- D. Halogens (VII-A)

**Which of the following will not form crystalline structure with oppositely charged ions \_\_\_\_\_?**

- A. H<sup>+</sup>**
- B. H<sup>-</sup>
- C. Mg<sup>2+</sup>
- D. Ca<sup>2+</sup>

**Periodic table provides a basic framework to study elements with respect to their \_\_\_\_\_?**

- A. Physical properties
- B. Chemical properties
- C. Properties of their compounds
- D. All**

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Many properties of an element and its compounds can be predicted from the position of the element in the periodic table. What property could not be predicted in this way ?

- A. The nature of its oxides
- B. The charge on its ions

- C. The formula of its oxide
- D. Its number of isotopes**

The atomic radii decreases by increasing atomic number in \_\_\_\_\_?

- A. Alkali metal
- B. Alkaline earth metal
- C. Elements from Li to Ne**
- D. Halogens

An element has electronic configuration  $1s^2 2s^2 2p^2$ . It belongs to \_\_\_\_\_?

- A. Group II-A
- B. Group IV-A**
- C. Group VII-A
- D. Group VI-A

Which of the following ion is stable in aqueous solution ?

- A.  $H^+$
- B.  $H^-$
- C.  $Cl^-$**
- D. All are stable

The atoms of same element having same atomic number but different mass number are called \_\_\_\_\_?

- A. Isobars
- B. Isomers
- C. Isotopes**
- D. Isotropes

Which order of ionization energy is correct \_\_\_\_\_?

- A. Mg P
- C. Mg > Al**
- D. both B & C

Shielding effect across the period \_\_\_\_\_?

- A. Increases
- B. Decreases
- C. Can not be predicted
- D. Remains constant**

Higher value of electron affinity means \_\_\_\_\_?

- A. Atom will lose electron easily  
**B. Atom will gain electron easily**  
 C. Atom may form di-positive ion  
 D. The reason is unknown

**Melting points of VII-A group elements down the group \_\_\_\_\_?**

- A. Increase  
 B. Decrease  
 C. Remain constant  
 D. No regular trend

**Which of the following possesses maximum hydration energy ?**

- A. Na+  
 B. K+  
**C. Mg+2**  
 D. Ca+2

**True increasing order of acidity of the oxides of Mn is \_\_\_\_\_?**

- A. MnO < MnO<sub>2</sub> < Mn<sub>2</sub>O<sub>7</sub>  
**B. Mn<sub>2</sub>O<sub>7</sub> > MnO<sub>2</sub> > MnO**  
 C. MnO<sub>2</sub> > MnO > Mn<sub>2</sub>O<sub>7</sub>  
 D. MnO<sub>2</sub> > Mn<sub>2</sub>O<sub>7</sub> > MnO

**Which one of the following element has highest oxidation state in its compounds ?**

- A. Cr  
**B. Mn**  
 C. Sn  
 D. O

**Which of the following cannot exist in solution \_\_\_\_\_?**

- A. O<sup>-2</sup>  
 B. H+  
 C. Cl-  
 D. Na+

**An element having low value of ionization energy and low value of electron affinity is likely to belong to \_\_\_\_\_?**

- A. Group IA  
 B. Group IB  
 C. Group VIIA  
 D. Group VIII

**Which of the following always increases on going from top to bottom in a group ?**

- A. Metallic character  
 B. Electronegativity  
 C. Oxidizing power  
 D. Tendency to get reduced

**Among halogens the highest boiling point is of \_\_\_\_\_?**

- A. Fluorine  
 B. Chlorine  
 C. Bromine  
**D. Iodine**

**The scientist who did not contribute in the construction of periodic table ?**

- A. Al-Razi  
 B. Moseley  
 C. Dobereiner  
**D. Democritus**

**Which element was not known when Mendeleev proposed his classification ?**

- A. Hydrogen  
 B. Sodium  
 C. Copper  
**D. Germanium**

**Noble gases are named so because they are \_\_\_\_\_?**

- A. less reactive  
 B. Zero group elements  
 C. Having completely filled valence shell  
**D. All**

**The longest period in the modern periodic table is \_\_\_\_\_?**

- A. 6th  
 B. 7th  
 C. 2nd and 3rd both  
 D. 5th

**Seventh period contains \_\_\_\_\_ normal elements ?**

- A. 2  
 B. 4  
 C. 6  
 D. 8

Modern periodic table has been divided in \_\_\_\_\_ blocks?

- A. 2
- B. 4**
- C. 8
- D. 7

Amphoteric oxides are those which possess \_\_\_\_\_ properties?

- A. Acidic
- B. Basic
- C. Acidic and basic**
- D. Neutral and acidic

Hydrogen resembles with carbon because of having \_\_\_\_\_?

- A. Same number of electrons in the valence shell
- B. Similar physical state
- C. Remarkable reducing properties**
- D. Homovalent (show same valency)

In which of the following pairs are elements belonging to the same group ?

- A. Boron & Beryllium
- B. Nitrogen & Phosphorous**
- C. Magnesium & Aluminium
- D. Gallium & Helium

Which one of the following is not a periodic property ?

- A. Melting point of elements
- B. Boiling point of elements
- C. Ionization energy of elements
- D. Coordination number of ions**

Which discovery caused a revision in the periodic law as stated by Mendeleev ?

- A. Location of nucleus by Rutherford
- B. Atomic number by Moseley**
- C. X-rays by Roentgen
- D. Natural radioactivity by Henry Bacquerel.

The property which increases upto group IV-A then decreases on wards \_\_\_\_\_?

- A. Ionization energy
- B. Atomic radii
- C. Melting & boiling points**
- D. Atomic volume

Deuterium reacts with oxygen to form \_\_\_\_\_?

- A. Hard water
- B. Heavy water**
- C. Soft water
- D. Water gas

Ionization energy depends upon \_\_\_\_\_?

- A. Nuclear charge
- B. Atomic size
- C. Shielding effect
- D. I.E depends upon all of the above and nature of orbital**

Addition of 2nd electron to a uni negative ion is always \_\_\_\_\_?

- A. Exothermic
- B. Endothermic**
- C. Data is insufficient
- D. Unpredictable

Metallic characters of alkali metals \_\_\_\_\_?

- A. Increase down the group**
- B. Decrease down the group
- C. No regular trend
- D. Remain same

Oxidation state of an atom represents \_\_\_\_\_?

- A. Number of electrons gained
- B. Number of electrons lost
- C. Apparent charge in compound**
- D. Its vacancies

Halides in which halogen atoms act as a bridge between two atoms of the other element are called \_\_\_\_\_?

- A. Covalent halides
- B. Electronegative halides
- C. Polymeric halides**
- D. Polymeric hydrides

Iodine is solid due to \_\_\_\_\_?

- A. Strong covalent bond
- B. Large value of dipole moment**

- C. High polarizability  
D. Strong hydrogen bonding

Keeping in view the size of atom which order is correct one ?

- A. Mg > Sr  
B. Ba > Mg  
C. Lu > Ce  
D. Cl > I

When - COOH is attached directly to the benzene ring the acid is called \_\_\_\_\_?

- A. Aliphatic  
B. Alicyclic  
C. Carboxylic  
D. Aromatic

The common thing in phthalic acid and oxalic acid is that both are \_\_\_\_\_?

- A. Aromatic  
B. Dicarboxylic  
C. Hydrocarbons  
D. Strong acids

The acid which is used as ink remover is \_\_\_\_\_?

- A. Oxalic acid  
B. Succinic acid  
C. Adipic acid  
D. Acetic acid

Which acid is the manufacture of synthetic rubber ?

- A. Acetic acid  
B. Formic acid  
C. Carbonic acid  
D. Benzoic acid

In the formation of Zwitter ions proton goes from \_\_\_\_\_?

- A. Carboxyl to amino group  
B. Amino to carboxyl group  
C. Amino group only  
D. Carboxyl group only

The organic acid that does not has COOH group is \_\_\_\_\_?

- A. phthalic acid  
B. carbolic acid  
C. Maleic acid  
D. Succinic acid

The test which is used for the identification of amino-acids is \_\_\_\_\_?

- A. Ninhydrin test  
B. Molisch test  
C. Biuretic test  
D. Benedict test

Carboxylic acid reacts with ammonia to form ammonium salts which on heating produces \_\_\_\_\_?

- A. CO<sub>2</sub>  
B. Alkane  
C. Ester  
D. Acidamide

The complete reduction carboxylic acid results in the formation of \_\_\_\_\_?

- A. Alkyne  
B. Alkene  
C. Alkane  
D. Alcohol

Picric acid is \_\_\_\_\_?

- A. monocarboxylic acid  
B. dicarboxylic acid  
C. aromatic carboxylic acid  
D. none of these

Essential amino acids are \_\_\_\_\_?

- A. 5  
B. 10  
C. 15  
D. 20

Which of the following is not a fatty acid ?

- A. Propanoic acid  
B. Acetic acid  
C. Phthalic acid  
D. Butanoic acid

The basic hydrolysis of ethyl acetate produces \_\_\_\_\_?

- A. ethanol
- B. acetic acid
- C. ethanol and acetic acid
- D. ethanol and sodium acetate**

Which of the following is not an ester \_\_\_\_\_?

- A. amyl acetate
- B. sodium butyrate**
- C. isobutyle formate
- D. octyl acetate

Which of the following has orange flavour \_\_\_\_\_?

- A. isobutyl formate
- B. octyl acetate**
- C. ethyl butyrate
- D. amyl lactate

Amino acids present in cheese \_\_\_\_\_?

- A. lysine
- B. alanine
- C. tyrosine**
- D. proline

Which of the following is an unsaturated carboxylic acid \_\_\_\_\_?

- A. malonic acid
- B. oxalic acid
- C. succinic acid
- D. maleic acid**

The common name of propane 1 3-dioic is \_\_\_\_\_?

- A. Oxalic acid
- B. Aromatic acid
- C. Malonic acid**
- D. Fumaric acid

The irritation caused by red ants bite is due to \_\_\_\_\_?

- A. Lactic acid
- B. Formic acid**
- C. Uric acid
- D. Acetic acid

Which of the following is the strongest acid ?

- A. Water
- B. Formic acid**
- C. Acetic acid
- D. Propanoic acid

Acidic amino acids have \_\_\_\_\_?

- A. 2 amino groups and 1 carboxylic group
- B. 1 amino and 1 carboxylic groups
- C. 2 carboxylic groups and 1 amino group**
- D. 2 amino and 2 carboxylic groups

The term internal salt refers to \_\_\_\_\_?

- A. Acidic character of amino acids
- B. Basic character of amino acids
- C. Dipolar character of amino acids**
- D. Non-polar structure of amino acids

Which one of the following acids is present in lemon juice ?

- A. Citric acid**
- B. Benzoic acid
- C. Tartaric acid
- D. Oxalic acid

Which one of following amino acid is neither acidic nor a basic in nature ?

- A. Lysine
- B. Histidine
- C. Proline**
- D. Glutamic acid

Glycine is the name of an amino acid because \_\_\_\_\_?

- A. Sweet taste**
- B. Bitter taste
- C. Shining appearance
- D. Green colour

The organic acid that can be made from ethanol is \_\_\_\_\_?

- A. Acetic acid**
- B. Formic acid
- C. Butanoic acid
- D. Citric acid

The formula of palmitic acid \_\_\_\_\_?

- A.  $C_{15}H_{31}COOH$   
 B.  $C_{13}H_{27}COOH$   
 C.  $C_{17}H_{33}COOH$   
 D.  $C_{17}H_{35}COOH$

The aliphatic monocarboxylic acids are obtained by the hydrolysis of \_\_\_\_\_?

- A. proteins and oil  
 B. fats and proteins  
 C. **fats and oils**  
 D. all above

An acid with unpleasant smell \_\_\_\_\_?

- A. formic acid  
 B. acetic acid  
 C. propionic acid  
 D. **butyric acid**

Carboxylic acid on reduction with HI / phosphorous yields \_\_\_\_\_?

- A. **alkane**  
 B. alcohols  
 C. aldehydes  
 D. ketones

The reaction of carboxylic acids with alcohols in presence of cone.  $H_2SO_4$  is called \_\_\_\_\_?

- A. **esterification**  
 B. neutralization  
 C. hydrolysis  
 D. saponification

Which of the following is not an amino acids \_\_\_\_\_?

- A. glutamic acid  
 B. **lactic acid**  
 C. aspartic acids  
 D. glycine

Which of the following reaction is not shown by ketones ?

- A. reaction with HCN  
 B. reaction with  $NaHSO_3$   
 C. reaction with 2,4-dinitrophenyl hydrazine  
 D. **reaction with Fehling solution**

Which of the following substances does not give iodoform test ?

- A. acetaldehyde  
 B. ethyl alcohol  
 C. **methyl alcohol**  
 D. acetone

Which of the following aldehydes shows rapid reaction with sodium nitroprusside ?

- A. formaldehyde  
 B. acetaldehyde  
 C. benzaldehyde  
 D. **acetone**

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Which of the following compounds will react with Tollens reagent ?

- A.  **$CH_3-CHO$**   
 B.  $CH_3-CH-CH_3$   
 C.  $CH_3-COOH$   
 D.  $CH_3-CO-CH_2-CH_3$

Cannizzaro's reaction is not given by \_\_\_\_\_?

- A. formaldehyde  
 B. **acetaldehyde**  
 C. benzaldehyde  
 D. trimethyl acetaldehyde

Ketones are comparatively less reactive than aldehyde. It is due to \_\_\_\_\_?

- A. alkyl groups are electron donating  
 B. steric hindrance  
 C. **Both A and B**  
 D. none

Which of the following is not a use of formaldehyde ?

- A. in silvery mirror
- B. in making medicine urotropine
- C. in making throat lozenges
- D. in making acetic acid**

Which of the following is not a use of acetaldehyde ?

- A. formation of phenolic resins
- B. formation of mirror
- C. antiseptic inhalant
- D. formation of throat lozenges**

Formaldehyde condenses with phenol in the presence of dilute  $H_2SO_4$  to yield \_\_\_\_\_?

- A. Nylon 66
- B. urotropine
- C. Aniline formaldehyde plastic
- D. Bakelite**

Which of the following will not give addition reaction with  $NaHSO_3$  \_\_\_\_\_?

- A.  $HCHO$
- B.  $CH_3CHO$
- C.  $CH_3-CH_2-CHO$**
- D. None of the above

Which of the following compounds has the empirical formula  $CH_2O$  and reacts with sodium hydroxide ?

- A. carbonic acid
- B. ethanol
- C. acetic acid**
- D. methanoic acid

Oxidation of primary alcohol gives \_\_\_\_\_?

- A. ketone
- B. Aldehyde**
- C. Alkene then –  $COOH$
- D. Ester

Nucleophilic addition reactions are catalysed \_\_\_\_\_?

- A. Acid
- B. Base

**C. Both A and B**  
D. None

Acetal on acid hydrolysis generates \_\_\_\_\_?

- A. Alcohol
- B. Ketone
- C. Both A & B**
- D. None of the above

Tetrahydroborate ion is the source of \_\_\_\_\_?

- A. proton
- B.  $H^+$
- C. both A & B
- D.  $H^-$**

Dry distillation of calcium acetate results in the formation of \_\_\_\_\_?

- A. formaldehyde
- B. acetaldehyde
- C. methane
- D. acetone**

Cannizaros reaction takes place through the transfer of \_\_\_\_\_ from complex anion?

- A. hydrogen ion
- B. hydride ion**
- C. oxide ion
- D. methoxide ion

Iodoform test can be used to distinguish between \_\_\_\_\_?

- A. ethanol and methanol
- B. acetaldehyde and methanal
- C. acetone and diethyl ketone
- D. all of the above**

Which of the following will have the highest boiling point ?

- A. methanol
- B. ethanal
- C. propanal
- D. hexanone**

The carbon atom of carbonyl group is \_\_\_\_\_?

- A. sp hybridized
- B. sp<sup>2</sup> hybridized**
- C. sp<sup>3</sup> hybridized
- D. dsp<sup>2</sup> hybridized

**Formalin is \_\_\_\_\_ solution of formaldehyde in water?**

- A. 10%
- B. 20%
- C. 40%**
- D. 60%

**Acetone reacts with HCN to form a cyanohydrin. It is an example of \_\_\_\_\_?**

- A. electrophilic addition
- B. electrophilic substitution
- C. nucleophilic addition**
- D. nucleophilic substitution

**Which of the following reactions may be associated with aldehyde and ketone ?**

- A. nucleophile addition
- B. polymerization
- C. oxidation
- D. all of the above**

**Which of the following reagents will react with both aldehydes and ketones ?**

- A. Grignard reagent**
- B. Tollens reagent
- C. Fehlings reagent
- D. Benedicts reagent

**Which of the following do not give aldol condensation reactions ?**

- A. formaldehyde**
- B. acetaldehyde
- C. dimethyl ketone
- D. propionaldehyde

**Formaldehyde and lactose are combined to produce throat lozenges named as \_\_\_\_\_?**

- A. formamint**
- B. lactomint
- C. aldomint
- D. formalactose

**Formula of haloform is \_\_\_\_\_?**

- A. HCOX
- B. CX<sub>4</sub>
- C. CHX<sub>3</sub>**
- D. CH<sub>3</sub>X

**Formalin consists of mixture of formaldehyde methyl alcohol and water Percentage of water in it is \_\_\_\_\_?**

- A. 60%
- B. 50%
- C. 52%**
- D. 8%

**On heating aldehydes with Fehlings solution we get a precipitate whose colour is \_\_\_\_\_?**

- A. pink
- B. black
- C. yellow
- D. brick red**

**Aldehyde and ketone have same general formula for homologous series \_\_\_\_\_?**

- A. C<sub>n</sub>H<sub>2n</sub>O<sub>2n</sub>
- B. C<sub>n</sub>H<sub>2n</sub>
- C. C<sub>n</sub>H<sub>2n</sub>O**
- D. C<sub>n</sub>H<sub>2n</sub>O<sub>n+1</sub>

**Ethanal is prepared industrially by air oxidation of ethylene using palladium chloride as catalyst and \_\_\_\_\_ as promoter?**

- A. PdCl<sub>2</sub>
- B. Cu<sub>2</sub>Cl<sub>2</sub>
- C. CuCl<sub>2</sub>**
- D. PbCl<sub>2</sub>

**Acetaldehyde cyanohydrin on acid hydrolysis yields \_\_\_\_\_?**

- A. Tartaric acid
- B. Propanoic acid
- C. Lactic acid**
- D. Valeric acid

**Which one exhibits aldol condensation \_\_\_\_\_?**

- A. HCHO  
 B. C<sub>6</sub>H<sub>5</sub>CHO  
 C. Cl<sub>3</sub>CCHO  
 D. CH<sub>3</sub>COCH<sub>3</sub>

Which of the following is a symmetrical ketone \_\_\_\_\_?

- A. 3 – hexanone  
 B. acetone  
 C. butanone  
 D. 2-pentanone

In base catalyzed reaction of carbonyl compound the catalyst \_\_\_\_\_?

- A. increases the nucleophilic character of reagent  
 B. increases electrophilic character of carbonyl compound  
 C. acidic character of reagent  
 D. both a and b

A elements are named as alkali metals because \_\_\_\_\_?

- A. Their oxides are basic  
 B. Their oxide and hydroxides are water soluble  
 C. Both A & B  
 D. They are found in earth

Formula of Chile saltpetre is \_\_\_\_\_?

- A. NaNO<sub>3</sub>  
 B. CaCO<sub>3</sub>  
 C. Ba (NO<sub>3</sub>)<sub>2</sub>  
 D. NH<sub>4</sub>Cl

The oxides of beryllium BeO is \_\_\_\_\_?

- A. Acidic  
 B. Basic  
 C. Amphoteric  
 D. Neutral

Li is different from its family members due to \_\_\_\_\_?

- A. small size  
 B. high charge density  
 C. less electropositivity  
 D. all of the above

Carbonates of lithium are not stable like that of sodium due to \_\_\_\_\_?

- A. Low electronegativity  
 B. Low electropositivity  
 C. Low charge density  
 D. Not known yet

Which one of the following is not an alkali metal ?

- A. Francium  
 B. Caesium  
 C. Rubidium  
 D. Radium

The element cesium bears resemblance with \_\_\_\_\_?

- A. Ca  
 B. Cr  
 C. Both of the above  
 D. None of the above

Downs cell is used to prepare \_\_\_\_\_?

- A. Sodium carbonate  
 B. Sodium bicarbonate  
 C. Sodium metal  
 D. Sodium hydroxide

Ammonia may be prepared by heating ammonium chloride with \_\_\_\_\_?

- A. Water  
 B. NaCl  
 C. Aqueous sodium hydroxide  
 D. H<sub>2</sub>SO<sub>4</sub>

Crystals of Na<sub>2</sub>CO<sub>3</sub>. 10H<sub>2</sub>O when exposed to air \_\_\_\_\_?

- A. Lose water and remain solid  
 B. Gain water and remain solid  
 C. Gain water and become liquid  
 D. Remains unchanged

Which one of the following gives white precipitate with aqueous solution of BaCl<sub>2</sub>?

- A. NaHCO<sub>3</sub>  
 B. NaNO<sub>3</sub>

- C.  $\text{Na}_2\text{CO}_3$   
D.  $\text{Na}_2\text{CrO}_4$

The deliquescence is a property in which a solid \_\_\_\_\_?

- A. Absorbs moisture and remains solid  
B. Absorbs moisture and turns to liquid form  
C. Loses water of crystallization  
D. Increases the number of water of crystallization

In diaphragm cell level of brine in anode compartment is kept slightly higher which prevents \_\_\_\_\_?

- A. Hydroxide ions to reach anode  
B. Chlorine gas to mix  
C. Cathode to decay  
D. All of the above

Alkali and alkaline earth metals impart colours when heated over burner. It is due to \_\_\_\_\_?

- A. Smaller electronegativity of alkali metals  
B. Smaller ionic radius of these metals  
C. De-excitation of electrons from higher energy levels to low energy level  
D. Excitation of electrons from low energy levels to higher energy levels

First ionization potential of alkaline earth metal is greater than alkali metals because \_\_\_\_\_?

- A. They are more reactive  
B. They have greater atomic radii  
C. They have smaller atomic sizes  
D. All

$\text{NaOH}$  is named as caustic soda because \_\_\_\_\_?

- A. It corrodes the organic tissues  
B. It is used in soda water  
C. It reacts with chlorine gas  
D. It reacts with fats to form soap

Carnalite has chemical formula \_\_\_\_\_?

- A.  $\text{KCl}$   
B.  $\text{KCl} \cdot \text{MgCl}_2 \cdot 6\text{H}_2\text{O}$

- C.  $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$   
D.  $\text{CaCO}_3 \cdot \text{MgCO}_3$

Electrolysis of dilute solution of  $\text{NaCl}$  results at the anode \_\_\_\_\_?

- A. sodium  
B. hydrogen  
C. chlorine  
D. oxygen

Which ion will have maximum value of heat of hydration ?

- A.  $\text{Al}^{3+}$   
B.  $\text{Cs}^+$   
C.  $\text{Ba}^+$   
D.  $\text{Mg}^{2+}$

Which one is natron ?

- A.  $\text{Na}_2\text{CO}_3$   
B.  $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$   
C.  $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$   
D.  $\text{NaHCO}_3$

Which one is least ionic in nature and decompose on heating ?

- A.  $\text{LiOH}$   
B.  $\text{NaOH}$   
C.  $\text{KOH}$   
D.  $\text{CsOH}$

The word Alkali means \_\_\_\_\_?

- A. Base  
B. Basic salt  
C. Ashes  
D. Spirit

Which element is necessary for normal leaf development ?

- A. Si  
B. Ba  
C. Mg  
D. Ca

Nitrates of which pair of elements give different products on thermal decomposition ?

- A. Na K  
B. Mg Ca

- C. Li Na  
D. Li Ca

Which of the following sulphates is not soluble in water ?

- A. Sodium sulphate  
B. Potassium sulphate  
C. Zinc sulphate  
**D. Barium sulphate**

The ore  $\text{CaSO}_4 \cdot \text{H}_2\text{O}$  has the general name \_\_\_\_\_?

- A. Gypsum**  
B. Dolomite  
C. Calcite  
D. Plaster of Paris

Which one of the following substances conducts electricity by the movement of ions ?

- A. Graphite  
B. Copper  
**C. Molten sodium chloride**  
D. Mercury

Which one of the following carbonate is water insoluble ?

- A.  $\text{Na}_2\text{CO}_3$   
B.  $\text{K}_2\text{CO}_3$   
C.  $(\text{NH}_4)_2\text{CO}_3$   
**D.  $\text{CaCO}_3$**

In diaphragm cell hydrogen is discharged by the reduction of \_\_\_\_\_?

- A. Water**  
B. HCl  
C.  $\text{Na}^+$   
D. NaCl

Gypsum is applied to the soil as a source of \_\_\_\_\_?

- A. Ca and P  
B. S and P  
**C. Ca and S**  
D. we could not apply

Which one of the following alkali metals forms only normal oxide when it reacts with  $\text{O}_2$  ?

- A. Lithium**  
B. Sodium  
C. Potassium  
D. Rubidium

Which one of the following pairs shown diagonal relationship in the periodic table ?

- A. Sodium and Lithium  
**B. Lithium and magnesium**  
C. Lithium and beryllium  
D. Boron and Beryllium

Sodium is not observed in +2 oxidation state because of its \_\_\_\_\_?

- A. high first ionization potential  
**B. high second ionization potential**  
C. high ionic radius  
D. high electronegativity

Magnesium metal does not burn in the vessel containing \_\_\_\_\_?

- A.  $\text{N}_2$   
B.  $\text{O}_2$   
C.  $\text{N}_2$  and  $\text{O}_2$   
**D. Ne**

Second ionization potential of alkali metals are very high due to \_\_\_\_\_?

- A. being s-block elements  
**B. inert gas configurations**  
C. ns1 electronic configuration  
D. being metals

Which one can form complex ?

- A. Na  
B. Cr  
**C. Li**  
D. K

Addition of 2% gypsum in cement \_\_\_\_\_?

- A. Triggers hydration  
B. Triggers hydrolysis  
**C. Prevents rapid hardening**  
D. all of the above

Phenanthrene is a fused polycyclic compound contains \_\_\_\_\_ benzene rings ?

- A. Two  
**B. Three**  
 C. Four  
 D. Five

How many electrons are there in benzene to form delocalized electron cloud \_\_\_\_\_?

- A. 3  
 B. 4  
**C. 6**  
 D. 8

When benzene is substituted by halogens only which one of the following halogens only which one of the following halogens is given the number one position in the ring while writing the name of compound ?

- A. Bromine  
 B. Chlorine  
 C. Fluorine  
**D. Iodine**

Michael Faraday discovered benzene in the gas which was produced by destructive distillation of vegetable oil that is done in \_\_\_\_\_?

- A. The presence of Oxygen  
 B. The presence of Hydrogen  
**C. The absence of Oxygen**  
 D. The presence of excessive Oxygen

How many moles of H<sub>2</sub> are added up when benzene is heated with hydrogen in the presence of platinum ?

- A. Two  
**B. Three**  
 C. Four  
 D. Six

The resonance energy of benzene is \_\_\_\_\_?

- A. 150.5 kJ/mol**  
 B. 250.5 kJ/mol  
 C. 150.5 Cal/mol  
 D. 250.5 Cal/mol

What catalyst is employed when benzene is prepared from acetylene at 70°C?

- A. Cr<sub>2</sub>O<sub>3</sub> + Al<sub>2</sub>O<sub>3</sub> + SiO<sub>2</sub>  
 B. Raney nickel  
**C. Organo-nickel**  
 D. Ni 250 – 300°C

Which one of the following methods will not give benzene ?

- A. Heating sod. Salt of Benzoic acid with soda lime  
 B. Distilling phenol with Zn dust  
**C. Chlorobenzene with NaOH at 360°C & 150atm.**  
 D. Hydrolysis of benzene sulphonic acid with super heated steam

Reacting bromine with benzene in the presence of sunlight will result in \_\_\_\_\_?

- A. The rupturing of benzene ring  
 B. Substitution reaction  
**C. Addition reaction**  
 D. No-reaction

During sulphonation of benzene H<sub>2</sub>SO<sub>4</sub> generates the electrophile \_\_\_\_\_?

- A. HSO<sub>4</sub><sup>-</sup>  
 B. SO<sub>2</sub>  
**C. SO<sub>3</sub>**  
 D. H<sup>+</sup>

Which compound will readily undergo sulphonation ?

- A. Benzene  
 B. Nitro benzene  
**C. Toluene**  
 D. Chlorobenzene

Which one of the following statement is not correct about benzene ?

- A. On hydrogenation 208 KJ/mole is liberated  
 B. C-H bond length in benzene is 1.09 Å?  
 C. Molecular mass of benzene is 78.108  
**D. Resonance energy of benzene is 150.5 K Cal/mole**

Replacement of hydrogen of benzene by alkyl group in the presence of alkyl halide & aluminum chloride is known as \_\_\_\_\_?

- A. Dows process
- B. Friedel & Craft acylation
- C. Friedel & Craft alkylation**
- D. Clemmenson reduction

**Which compound form benzoic acid on oxidation with acidified  $\text{KMnO}_4$  or  $\text{K}_2\text{Cr}_2\text{O}_7$  ?**

- A. Toluene
- B. Ethyl benzene
- C. n-propyl benzene
- D. All**

**What is the molecular formula of Benzenetriozone ?**

- A.  $\text{C}_6\text{H}_6\text{O}_9$**
- B.  $\text{C}_6\text{H}_5\text{O}_8$
- C.  $\text{C}_6\text{H}_5\text{O}_9$
- D.  $\text{C}_6\text{H}_6\text{O}_6$

**The hydrolysis of Benzenetriozone will yield three moles of \_\_\_\_\_?**

- A. Glyoxime
- B. Benzaldehyde
- C. Glycol
- D. Glyoxal**

**In benzene sulphonic acid the sulphonic group is attached with benzene ring through \_\_\_\_\_?**

- A. Hydrogen
- B. Oxygen
- C. Sulphur**
- D. OH

**Aniline is a derivative of benzene which contains \_\_\_\_\_?**

- A. Imino group
- B. Amino group**
- C. Amide group
- D. Nitro group

**Nitration of chlorobenzene gives \_\_\_\_\_?**

- A. o – chloronitrobenzene
- B. p – chloronitrobenzene
- C. m – chloronitrobenzene
- D. A & B**

**By which method the molecular mass of benzene was determined as 78.108 ?**

- A. Specific gravity method
- B. Vapour density method**
- C. X-ray diffraction method
- D. Distillation method

**Chlorination of toluene in the presence of sunlight produces \_\_\_\_\_?**

- A. Benzyl chloride**
- B. o – chlorotoluene
- C. p – chlorotoluene
- D. benzoic acid

**Mixture of catalysts  $\text{Cr}_2\text{O}_3 + \text{Al}_2\text{O}_3 + \text{SiO}_2$  at  $500^\circ\text{C}$  are used when benzene is prepared from \_\_\_\_\_?**

- A. acetylene
- B. N-hexane**
- C. Benzene sulphonic acid
- D. Sodium benzoate

**Which is fused cyclic aromatic compound \_\_\_\_\_?**

- A. diphenyl amine
- B. diphenyl methane
- C. naphthalene**
- D. biphenyl

**Acetophenone is a \_\_\_\_\_?**

- A. Ether
- B. Ketone**
- C. Aldehyde
- D. Ester

**Benzene does not undergo \_\_\_\_\_?**

- A. Substitution reaction
- B. Addition reaction
- C. Polymerization reactions**
- D. Oxidation reactions

**Nitronium ion is \_\_\_\_\_?**

- A.  $\text{NO}_3$
- B.  $\text{NO}$
- C.  $\text{NO}_2^-$
- D.  $\text{NO}_2^+$**

**Benzene is heated in air with  $V_2O_5$  at  $450^\circ C$  it undergoes \_\_\_\_\_?**

- A. Substitution reaction
- B. Addition reaction
- C. Elimination reaction
- D. Oxidation reaction**

**The preparation of benzene from acetylene can also be said as \_\_\_\_\_?**

- A. Oxidation
- B. Polymerization**
- C. Dehydration
- D. Condensation

**Ozonolysis of benzene produces \_\_\_\_\_?**

- A. Glycol
- B. Glyoxal**
- C. Vicinal diol
- D. Both B & C

**Boron is non-metal whereas Al is metal. It is due to \_\_\_\_\_?**

- A. Small size
- B. High nuclear charge
- C. Both A and B**
- D. No authorized justification yet

**One of the outstanding features of boron is its ability to form \_\_\_\_\_?**

- A. Molecular addition compounds**
- B. Molecular crystals
- C. Semiconductors
- D. Ionic compounds

**Borax is a white crystalline solid and it is \_\_\_\_\_?**

- A. More soluble in cold water
- B. More soluble in hot water**
- C. Insoluble in water
- D. Soluble only in organic solvents

**Special features of borate glass is that it is \_\_\_\_\_?**

- A. Heat resistant**
- B. Low melting
- C. Used to prepare chemical garden
- D. Green in colour

**Aluminium oxide is \_\_\_\_\_?**

- A. Acidic oxide
- B. Basic oxide
- C. Amphoteric oxide**
- D. It does not exist

**Which electronic configuration corresponds to an element of group IIIA ?**

- A.  $1s^2 2s^2 2p^3$
- B.  $1s^2 2s^2 2p^6 3s^2 3p^1$**
- C.  $1s^2 2s^2 2p^4$
- D.  $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^1$

**In network of silica ( $SiO_2$ ) each silicon atom is surrounded by \_\_\_\_\_ atoms of oxygen?**

- A. 4**
- B. 2
- C. 1
- D. 6

**Orthoboric acid is 2.6% soluble in water at  $40^\circ C$  and \_\_\_\_\_ at  $107^\circ C$ .**

- A. 26%
- B. 27%
- C. 37%**
- D. <2.6%

**Because of its ability to combine with both oxygen and nitrogen aluminium metal is used \_\_\_\_\_?**

- A. As nitrometer
- B. To remove air bubbles from molten metal**
- C. To produce alloy
- D. As insulator

**Which of the following shows inert pair effect ?**

- A. boron
- B. carbon
- C. silicon
- D. tin**

**Tincal is a mineral of \_\_\_\_\_?**

- A. Al
- B. Si
- C. B**
- D. C

Which one of the following is not a semiconductor ?

- A. Si
- B. Ge
- C. Se
- D. Sn**

The process of aluminium extraction is called \_\_\_\_\_?

- A. Hall process**
- B. Thermite process
- C. Haber process
- D. Contact process

Aqueous solution of borax above  $62^{\circ}\text{C}$  gives crystals of \_\_\_\_\_?

- A.  $\text{Na}_2\text{B}_4\text{O}_7 \cdot 4\text{H}_2\text{O}$
- B.  $\text{Na}_2\text{B}_4\text{O}_7 \cdot 5\text{H}_2\text{O}$**
- C.  $\text{Na}_2\text{B}_4\text{O}_7 \cdot 2\text{H}_2\text{O}$
- D.  $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$

Which of the following is not a use of silicon ?

- A. Lubricants
- B. Hydraulic brakes
- C. Antifreeze**
- D. Water repellent

$\text{CO}_2$  is gas while  $\text{SiO}_2$  is solid at room temperature?

- A. carbon is non-metal while silicon is semi-metal
- B.  $\text{CO}_2$  is an independent molecule while  $\text{SiO}_2$  has network covalent structure**
- C.  $\text{CO}_2$  forms multiple bond while silicon does not form multiple bonds
- D. Silicon has all sigma bonds

Identify the correct statement regarding CO \_\_\_\_\_?

- A. it combines with  $\text{H}_2\text{O}$  to form carbonic acid
- B. it reacts with red blood cells of haemoglobin**
- C. it is powerful oxidizing agent
- D. it is used to prepare aerated drinks

Boric acid cannot be used \_\_\_\_\_?

- A. As antiseptic in medicine
- B. For washing eyes

**C. In soda bottles**

D. For enamel and glazes

Which element can form tripositive ion ?

- A. Beryllium
- B. Carbon
- C. Silicon
- D. Aluminium**

Which of the following is different with respect to physical appearance ?

- A. Arsenic
- B. Phosphorus**
- C. Antimony
- D. Bismuth

Compounds of nitrogen and phosphorus are mostly \_\_\_\_\_?

- A. ionic
- B. covalent**
- C. polar
- D. all varieties are possible

$\text{SO}_3$  is not absorbed in water directly because \_\_\_\_\_?

- A. Reaction is exothermic**
- B. It is insoluble in water
- C. Dilute acid is produced
- D. All of above

Which of the following will give phosphoric acid one reaction with water \_\_\_\_\_?

- A.  $\text{PCl}_5$
- B.  $\text{P}_2\text{O}_3$
- C.  $\text{P}_2\text{O}_5$
- D. All of the above**

Phosphorus is a Greek word and it means \_\_\_\_\_?

- A. Light bearing**
- B. Fire
- C. Impure
- D. Tetrahedral

Allotropic form of phosphorus that is poisonous is \_\_\_\_\_?

- A. White
- B. Red
- C. Black
- D. Violet

Acetic anhydride can be obtained by treating ethyl alcohol with \_\_\_\_\_?

- A. P<sub>2</sub>O<sub>5</sub>
- B. H<sub>2</sub>SO<sub>4</sub>
- C. Both A and B
- D. PCI<sub>5</sub>

Phosphorous acid upon thermal decomposition yields phosphoric acid and \_\_\_\_\_?

- A. Phosphine
- B. Phosphorus
- C. Water
- D. Phosphorus pentoxide

P<sub>2</sub>O<sub>5</sub> is a hygroscopic powder which sublimes at \_\_\_\_\_?

- A. 260°C
- B. 360°C
- C. 630°C
- D. 620°C

Phosphoric acid is a weak acid and its basicity is \_\_\_\_\_?

- A. 1
- B. 3
- C. zero
- D. 2

All the elements in group VIA are \_\_\_\_\_ in nature?

- A. hygroscopic
- B. metals
- C. polymeric
- D. all of above

Which allotropic form of phosphorous is the most stable ?

- A. White
- B. black
- C. red
- D. Violet

The chemical composition of cinnabar is \_\_\_\_\_?

- A. ZnS
- B. PbS
- C. HgS
- D. FeS

Oxygen and sulphur resemble in all except \_\_\_\_\_?

- A. Electronic configuration of valence shell electrons
- B. Show allotropy
- C. Polymeric
- D. Show same oxidation state

Arsenic oxides are removed by passing through \_\_\_\_\_?

- A. Ferric hydroxide
- B. Sodium hydroxide
- C. Calcium hydroxide
- D. Aluminium hydroxide

When sulphuric acid is treated with ethanol sulphuric acid behaves like \_\_\_\_\_?

- A. an acid
- B. a dehydrating agent
- C. an oxidizing agent
- D. as sulphonating agent

Which one of the followings possesses melting point below 0°C?

- A. Nitrogen
- B. Phosphorus
- C. Carbon
- D. Bismuth

The most electronegative element among the following is \_\_\_\_\_?

- A. Sb
- B. N
- C. As
- D. P

Phosphene gas will be produced if phosphorous acid is subjected to \_\_\_\_\_?

- A. Oxidation
- B. Reduction

C. Decomposition

**D. Both b & c**

**Which one of following is not a property of pure quartz ?**

**A. Coloured solid**

B. Brittle

C. Hard

D. All of above

**Which of the following does not contain phosphorus ?**

A. Yolk of egg

B. Bone

C. Nerves

**D. Steel**

**Which one of the following is not the use of graphite ?**

A. Lead pencils

**B. Abrasive**

C. Lubricant

D. Electrode of electrolytic cell

**The composition of brown ring in nitrate test is \_\_\_\_\_?**

**A. FeSO<sub>4</sub>.No**

B. FeSO<sub>4</sub>.No<sub>2</sub>

C. FeSO<sub>4</sub>.No<sub>3</sub>

D. FeSO<sub>4</sub>.N<sub>2</sub>o

**Which one of the following compounds usually smells like garlic ?**

**A. P<sub>2</sub>O<sub>3</sub>**

B. P<sub>2</sub>O<sub>5</sub>

C. H<sub>3</sub>PO<sub>3</sub>

D. All have same smell

**The element of group VIA which is a non-metal is \_\_\_\_\_?**

**A. S**

B. Se

C. Te

D. Po

**Which of the elements show passivity when treated with conc. HNO<sub>3</sub>?**

A. Fe

B. A

C. Cr

**D. All of the above**

**The gas which cannot be dried by conc. H<sub>2</sub>SO<sub>4</sub> ?**

A. SO<sub>2</sub>

**B. H<sub>2</sub>S**

C. CO<sub>2</sub>

D. C<sub>2</sub>H<sub>4</sub>

**FeSO<sub>4</sub> forms brown ring with \_\_\_\_\_?**

A. N<sub>2</sub>O<sub>3</sub>

B. NO<sub>2</sub>

**C. NO**

D. N<sub>2</sub>O

**Oxygen does not react with all except \_\_\_\_\_?**

A. Alkali

B. Acid

C. Water

**D. Metals**

**In which compound nitrogen has maximum oxidation state \_\_\_\_\_?**

A. N<sub>2</sub>O

B. NO<sub>2</sub>

C. HNO<sub>2</sub>

**D. HNO<sub>3</sub>**

**Among the halogens the rare element is \_\_\_\_\_?**

A. Fluorine

B. Chlorine

**C. Astatine**

D. Iodine

**Vander Waals forces are stronger in \_\_\_\_\_?**

A. F<sub>2</sub>

B. Cl<sub>2</sub>

C. Br<sub>2</sub>

**D. I<sub>2</sub>**

**The most powerful oxidizing agent among the halogens is \_\_\_\_\_?**

- A. F<sub>2</sub>  
 B. Cl<sub>2</sub>  
 C. Br<sub>2</sub>  
 D. I<sub>2</sub>

The halogen which reacts spontaneously with gold (Au) to form Au<sup>+3</sup> is \_\_\_\_\_?

- A. F<sub>2</sub>  
**B. Cl<sub>2</sub>**  
 C. Br<sub>2</sub>  
 D. I<sub>2</sub>

The halogen which reacts very slowly with halogen is \_\_\_\_\_?

- A. Fluorine  
 B. Chlorine  
 C. Bromine  
**D. Iodine**

The halogen having highest electron affinity is \_\_\_\_\_?

- A. Fluorine  
**B. Chlorine**  
 C. Bromine  
 D. Iodine

Bromine can be liberated from KBr solution by the action of \_\_\_\_\_?

- A. Iodine solution  
**B. Chlorine**  
 C. NaCl  
 D. KI

Consider the following reaction-  $2\text{KClO}_3 + \text{H}_2\text{C}_2\text{O}_4 + \text{H}_2\text{SO}_4 \rightarrow \text{K}_2\text{SO}_4 + 2\text{H}_2\text{O} + 2\text{CO}_2 + \text{O}_2$   
 Oxide Which oxide of chlorine is produced in the above reaction ?

- A. Cl<sub>2</sub>O  
**B. ClO<sub>2</sub>**  
 C. Cl<sub>2</sub>O<sub>6</sub>  
 D. Cl<sub>2</sub>O<sub>7</sub>

Consider the following reaction-  $3\text{Cl}_2 + 6\text{NaOH} \rightarrow \text{NaClO}_3 + 5\text{NaCl} + 3\text{H}_2\text{O}$  This reaction is \_\_\_\_\_?

- A. Displacement reaction  
 B. Double displacement reaction  
**C. Disproportionation reaction**  
 D. Reduction reaction

Which of the halogen can displace other three elements ?

- A. Fluorine**  
 B. Chlorine  
 C. Iodine  
 D. Bromine

The chemical formula of sodium hypochlorite is \_\_\_\_\_?

- A. NaClO**  
 B. NaClO<sub>2</sub>  
 C. NaClO<sub>3</sub>  
 D. NaClO<sub>4</sub>

Bleaching powder is not used for bleaching \_\_\_\_\_?

- A. Cotton  
**B. Costly fabrics**  
 C. Linen  
 D. Paper pulp

Which of the following is not use of compounds of Fluorine \_\_\_\_\_?

- A. SbF<sub>3</sub> is used for manufacture of pottery  
 B. Sodium fluoroacetate is a rat poison  
 C. Cu F<sub>2</sub> is used in ceramic industry  
**D. None of the above**

Photographic plates are coated with a thin film of \_\_\_\_\_?

- A. AgNO<sub>3</sub>  
 B. AgI  
 C. AgCl  
**D. AgBr**

Indicate the correct statement \_\_\_\_\_?

- A. Cl<sub>2</sub> is the strongest oxidizing agent  
**B. I<sub>2</sub> is a volatile solid**  
 C. Br<sub>2</sub> is more reactive than Cl<sub>2</sub>  
 D. Cl<sub>2</sub> is insoluble in water

Which one of the following halogens is present in Teflon \_\_\_\_\_?

- A. I<sub>2</sub>  
 B. Br<sub>2</sub>  
 C. Cl<sub>2</sub>  
**D. F<sub>2</sub>**

Which is the paramagnetic oxide of chlorine ?

- A.  $\text{Cl}_2\text{O}_7$
- B.  $\text{Cl}_2\text{O}_6$
- C.  **$\text{ClO}_2$**
- D. all

The colour of chlorine gas is \_\_\_\_\_?

- A. pale yellow
- B. **freenish yellow**
- C. reddish brown
- D. grayish black

Which of the following statements is incorrect about fluorine \_\_\_\_\_?

- A. fluorine is restricted to -1 oxidation state
- B. fluorine follows octet rule and as well as extended octet rule
- C. fluorine has lowest dissociation energy among the halogens
- D. **both B and C**

Which one of the following is the weakest acid in water \_\_\_\_\_?

- A. **HF**
- B. HCl
- C. HBr
- D. HI

Which of the following represents the correct electronic configuration of VII A group elements in the ground state ?

- A.  $ns^2p^2$
- B.  $ns^2p^4$
- C.  **$ns^2p^5$**
- D.  $ns^2p^6$

Which is the strongest acid ?

- A. HClO
- B. HClO<sub>2</sub>
- C. HClO<sub>3</sub>
- D. **HClO<sub>4</sub>**

Bleaching powder is an example of \_\_\_\_\_?

- A. Normal salt
- B. Double salt
- C. **Mixed salt**
- D. Complex

Which of the following oxides of iodine is used for quantitative analysis of CO ?

- A.  $\text{I}_2\text{O}_4$
- B.  $\text{I}_4\text{O}_2$
- C.  **$\text{I}_2\text{O}_5$**
- D. All are equally useful

Which of the halogen has highest electronegativity ?

- A. **Fluorine**
- B. Chlorine
- C. Bromine
- D. Iodine

Which of the following statements is incorrect about halogens ?

- A. All are non-metals
- B. All the halogens have electronic configuration  $ns^2p^5$
- C. They have high electron affinity and ionization energy
- D. **All the halogens react with noble gases to form their halides**

Fluorine can react with \_\_\_\_\_?

- A. Xe
- B. Kr
- C. Rn
- D. **All of the above**

Which of the following is the weakest reducing agent ?

- A. **HF**
- B. HBr
- C. HCl
- D. HI

In which compound of Xenon the oxidation state of Xenon is + 6?

- A.  $\text{XeF}_4$
- B.  **$\text{XeOF}_4$**
- C.  $\text{XeOF}_2$
- D.  $\text{Na}_4\text{XeO}_6$

The anhydride of  $\text{HClO}_4$  is \_\_\_\_\_?

- A.  $\text{Cl}_2\text{O}$
- B.  $\text{Cl}_2\text{O}_6$

- C.  $\text{ClO}_2$   
 D.  $\text{Cl}_2\text{O}_7$

Alkanes containing a methyl group on main chain at 2nd carbon are called \_\_\_\_\_?

- A. iso-alkane  
 B. normal-alkane  
 C. neo-alkane  
 D. branched-alkane

Alkanes are also known as \_\_\_\_\_?

- A. saturated hydrocarbon  
 B. unsaturated hydrocarbon  
 C. paraffins  
 D. both A & C

Hydrogenolysis results in the formation of \_\_\_\_\_?

- A. alkane  
 B. alkene  
 C. alkyne  
 D. aldehydes

Removal of  $\text{CO}_2$  is called \_\_\_\_\_?

- A. carboxylation  
 B. decarboxylation  
 C. esterification  
 D. hydroxylation

Molozonide is unstable and changes into ozonide on \_\_\_\_\_?

- A. reduction  
 B. oxidation  
 C. hydrolysis  
 D. rearrangement

R-Mg-Br is called \_\_\_\_\_?

- A. Grignard reagent  
 B. Metallic alkyl halide  
 C. Both A & B  
 D. Alkyl

Which of the following is the most reactive \_\_\_\_\_?

- A. ethane  
 B. ethyne

- C. ethene  
 D. benzene

Introduction of nitro group in a molecule is called \_\_\_\_\_?

- A. nitration  
 B. halogenation  
 C. sulphonation  
 D. amination

The gas used in manufacturing of urea fertilizer \_\_\_\_\_?

- A.  $\text{C}_2\text{H}_6$   
 B.  $\text{C}_2\text{H}_4$   
 C.  $\text{C}_2\text{H}_2$   
 D.  $\text{CH}_4$

Which of the following will be acidic \_\_\_\_\_?

- A. propyne  
 B. 1-butyne  
 C. ethyne  
 D. all of the above

Alkenes are produced from dehalogenation of \_\_\_\_\_?

- A. dihalo alkane  
 B. trihalo alkane  
 C. vicinal dihalo alkane  
 D. vicinal trihalo alkane

In unsaturated hydrocarbons electrons favour \_\_\_\_\_?

- A. less reactivity  
 B. addition reactions  
 C. substitution reactions  
 D. none

Which one is Chloroform \_\_\_\_\_?

- A.  $\text{CH}_2\text{Cl}_2$   
 B.  $\text{CH}_3\text{Cl}$   
 C.  $\text{CHCl}_3$   
 D.  $\text{CCl}_4$

Which is used for artificial ripening of fruit ?

- A. ethane  
 B. ethene

- C. ethyne  
D. methane

**Preparation of vegetable ghee involves \_\_\_\_\_?**

- A. halogenation  
B. hydroxylation  
**C. hydrogenation**  
D. hydration

**Which is methyl cyanide \_\_\_\_\_?**

- A.  $\text{CH}_3\text{NH}_2$   
B.  $\text{CH}_3\text{NO}_2$   
**C.  $\text{CH}_3\text{CN}$**   
D.  $\text{CH}_2 = \text{CH} - \text{CN}$

**When one hydrogen atom of alkane is removed then it is called \_\_\_\_\_?**

- A. alkene  
**B. alkyl**  
C. aldehyde  
D. saturated hydrocarbon

**Sabatier Senderns reaction involve \_\_\_\_\_ in presence of Ni?**

- A. Aalkene &  $\text{H}_2$**   
B. alkene &  $\text{O}_2$   
C. alkene &  $\text{N}_2$   
D. alkyne &  $\text{Cl}_2$

**Clemmensens reduction infolves the reduction of \_\_\_\_\_?**

- A. ketone**  
B. aldehyde  
C. alkane  
D. all of the above

**Soda lime is a mixture of \_\_\_\_\_?**

- A.  $\text{CaO}$  and  $\text{KOH}$   
**B.  $\text{CaO}$  and  $\text{NaOH}$**   
C.  $\text{NaOH}$  and  $\text{Na}_2\text{O}$   
D.  $\text{Na}_2\text{O}$  and  $\text{KOH}$

**Dehalogenation of ethyl tetrahalide will give \_\_\_\_\_?**

- A. ethene  
**B. ethyne**

- C. ethyl halide  
D. all of the above are possible

**Upto \_\_\_\_\_ C atoms alkanes are gases?**

- A. 2  
B. 3  
**C. 4**  
D. 6

**Incomplete oxidation of methane in the limited supply of air forms ?**

- A.  $\text{CO}_2$  and  $\text{H}_2\text{O}$   
**B.  $\text{CH}_3\text{OH}$**   
C.  $\text{CO} + \text{H}_2 + \text{C}$   
D.  $\text{CO} + \text{H}_2\text{O} + \text{C}$

**Order of ease of halogenation in alkane is \_\_\_\_\_?**

- A.  $\text{I}_2 > \text{Cl}_2 > \text{Br}_2 > \text{F}_2$   
B.  $\text{F}_2 > \text{Cl}_2 > \text{I}_2 > \text{Br}_2$   
**C.  $\text{F}_2 > \text{Cl}_2 > \text{Br}_2 > \text{I}_2$**   
D.  $\text{Cl}_2 > \text{F}_2 > \text{Br}_2 > \text{I}_2$

**General formula of alkyne is \_\_\_\_\_?**

- A.  $\text{C}_n\text{H}_{2n+2}$   
**B.  $\text{C}_n\text{H}_{2n-2}$**   
C.  $\text{C}_n\text{H}_{2n}$   
D.  $\text{C}_n\text{H}_{2n+2}$

**Removal of halogen and hydrogen atom is \_\_\_\_\_?**

- A. halogenation  
B. dehalogenation  
**C. dehydrohalogenation**  
D. hydrohalogenation

**Reactivity due to pi-electrons is present in \_\_\_\_\_?**

- A. alkane  
B. alkene  
C. alkyne  
**D. both B & C**

**Raney nickel is prepared from \_\_\_\_\_ by treating with caustic soda?**

- A. Ni-Cu alloy
- B. Ni-Fe alloy
- C. Ni-Al alloy**
- D. Ni-Mg alloy

**Vinylacetylene combines with HCl to form \_\_\_\_\_?**

- A. polyacetylene
- B. benzene
- C. chloroprene**
- D. divinyl acetylene

**Which C-X bond has the highest bond energy per mole ?**

- A. C-F**
- B. C-C
- C. C-Br
- D. C-I

**Ethyl chloride with nascent hydrogen produces \_\_\_\_\_?**

- A. methane
- B. ethane**
- C. propane
- D. butane

**The number of molecules taking part in the rate determining step is called \_\_\_\_\_?**

- A. Order of reaction**
- B. Rate of reaction
- C. Mole of a reaction
- D. Extent of a reaction

**What will be the order of reaction of a reaction whose rate can be expressed as  $R = K [A] [B]$  ?**

- A. Zero
- B. One
- C. Two**
- D. Three

**What is the order of kinetics in the SN1 mechanism ?**

- A. Zero
- B. First**
- C. Second
- D. Third

**The rate of E1 reaction depends upon \_\_\_\_\_?**

- A. the concentration of substrate**
- B. the concentration of nucleophile
- C. the concentration of substrate as well as nucleophile
- D. base the concentration of substrate as well as nucleophile

**Elimination bimolecular reactions involve \_\_\_\_\_?**

- A. first order kinetics
- B. second order kinetics**
- C. third order kinetics
- D. zero order kinetics

**Grignard reagent is reactive due to \_\_\_\_\_?**

- A. the presence of halogen atom
- B. the presence of magnesium atom
- C. the polarity of C-Mg bond**
- D. all

**The ether used in Wurtz synthesis is \_\_\_\_\_?**

- A. acidic
- B. basic
- C. aqueous
- D. dry**

**Which one of the following species is not an electrophile ?**

- A. NH<sub>3</sub>**
- B. Br<sup>+</sup>
- C. H<sup>+</sup>
- D. BF<sub>3</sub>

**Which one of the following alcohols will be formed when ethyl magnesium bromide reacts with acetone ?**

- A. primary alcohol
- B. secondary alcohol
- C. tertiary alcohol**
- D. dihydric alcohol

**Which one of the following molecules does not form alcohol when reacts with Grignard reagent ?**

- A. formaldehyde
- B. acetaldehyde
- C. propanone
- D. carbondioxide**

**In primary alkyl halides the halogen atom is attached to a carbon which is further attached to how many carbon atoms \_\_\_\_\_?**

- A. two
- B. three
- C. one**
- D. four

**The best method of preparation of alkyl halides is a reaction of alcohol with \_\_\_\_\_?**

- A. Zn / HCl
- B. SOCl<sub>2</sub> / Pyridine**
- C. PCl<sub>3</sub>
- D. PCl<sub>5</sub>

**50% inversion of configuration of molecules take place in a \_\_\_\_\_?**

- A. E<sub>1</sub> – reaction
- B. E<sub>2</sub> – reaction
- C. SN<sub>1</sub> – reaction**
- D. SN<sub>2</sub> – reaction

**Which alkyl halide has the highest reactivity for a particular alkyl group ?**

- A. R-F
- B. R-C
- C. R-Br
- D. R-I**

**Which one is not a nucleophile ?**

- A. C<sub>2</sub>H<sub>5</sub>O<sup>-</sup>
- B. SCN<sup>-</sup>
- C. NH<sub>3</sub>
- D. H<sub>3</sub>C<sup>+</sup>**

**Which alkyl halide out of the following may follow both SN<sub>1</sub> and SN<sub>2</sub> mechanism ?**

- A. CH<sub>3</sub>-X
- B. (CH<sub>3</sub>)<sub>3</sub> C-CH<sub>2</sub> – X
- C. (CH<sub>3</sub>)<sub>2</sub> CH – X**
- D. (CH<sub>3</sub>)<sub>3</sub> C – X

**When two moles of ethyl chloride react with two moles of sodium in the presence of ether what will be formed ?**

- A. 2 moles of ethane
- B. 1 mole of ethane
- C. 2 moles of butane
- D. 1 mole of butane**

**When CO<sub>2</sub> is made to react with ethyl magnesium iodide followed by acid hydrolysis the product formed is \_\_\_\_\_?**

- A. propane
- B. propanoic acid**
- C. propanal
- D. propanol

**SN<sub>2</sub> reaction can be best carried out with \_\_\_\_\_?**

- A. primary alkyl halide**
- B. secondary alkyl halide
- C. tertiary alkyl halide
- D. all

**For which mechanisms the first step involved is the same ?**

- A. E<sub>1</sub> + E<sub>2</sub>
- B. E<sub>2</sub> + SN<sub>2</sub>
- C. E<sub>1</sub> and SN<sub>1</sub>**
- D. SN<sub>1</sub> and SN<sub>2</sub>

**Alkyl halides are considered to be very reactive compounds towards nucleophile because \_\_\_\_\_?**

- A. they have an electrophilic carbon
- B. they have an electrophilic carbon & a good leaving group**
- C. they have an electrophilic carbon & a bad leaving group
- D. they have a nucleophilic carbon & a good leaving group

**Which one of the following reactants will be required to form straight chain alcohol by using Grignard reagent \_\_\_\_\_?**

- A. formaldehyde
- B. ketone
- C. ethylene epoxide
- D. both A & C**

Ethylene epoxide treated with Grignards reagent followed by acid hydrolysis yield \_\_\_\_\_?

- A. primary alcohol
- B. secondary alcohol
- C. tertiary alcohol
- D. dihydric alcohol

Alkyl halides undergo a type of reaction \_\_\_\_\_?

- A. Nucleophilic substitution
- B. Nucleophilic addition
- C. Elimination
- D. both A & C

Which one of the following is termed as benzul alcohol ?

- A.  $C_6H_5OH$
- B.  $C_6H_5CH(OH)_2$
- C.  $C_6H_5CH_2OH$
- D.  $C_6H_5COOH$

Which one of the following is also known as tartaric acid ?

- A. 2,3-dihydroxy butane-1,4-dioic acid
- B. 2,3-dihydroxy butanedioic acid
- C. 2,3-dihydroxy butanoic acid
- D. 2,2-dihydroxy butanoic acid

The residue obtained after the crystallization of sugar from concentrated sugar cane juice is called \_\_\_\_\_?

- A. Mother liquor
- B. Filterate
- C. Extract
- D. Molasses

The process of fermentation of starch involve many enzymes the sequence of enzymes used are \_\_\_\_\_?

- A. Diastase-maltase-zymase
- B. Zymase-maltase-diastase
- C. Maltase-diastase-zymase
- D. Diastase-zymase-maltase

$K_2Cr_2O_7/H_2SO_4$  generate \_\_\_\_\_?

- A. Oxygen
- B. Hydrogen
- C. Nascent oxygen[O]
- D. Nascent hydrogen[H]

Which alcohol will undergo elimination reaction to give alkene in the presence of acidic potassium dichromate ?

- A. Primary alcohol
- B. Secondary alcohol
- C. Tertiary alcohol
- D. All of above

Which compound is also known by the name of carbolic acid ?

- A.  $C_2H_5OH$
- B.  $H_2CO_3$
- C.  $C_6H_5OH$
- D.  $H_3PO_3$

Heating phenol with Zn will yield \_\_\_\_\_?

- A. Benzene
- B. Benzoic acid
- C. Phenoxide
- D. Cyclohexane

Treating phenol with formaldehyde in the presence of dilute base forms Bakelite. The process involved is \_\_\_\_\_?

- A. oxidation
- B. elimination
- C. condensation polymerization
- D. additional polymerization

Ethanol can be converted into ethanoic acid by \_\_\_\_\_?

- A. Hydrogenation
- B. Hydration
- C. Oxidation
- D. Fermentation

Methanol can be obtained from \_\_\_\_\_?

- A. water gas
- B. destructive distillation of wood
- C. methane
- D. all

**Absolute alcohol is obtained when rectified spirit is treated with \_\_\_\_\_?**

- A.  $\text{Ca(OH)}_2$
- B.  $\text{CaCO}_3$
- C.  $\text{CaCl}_2$
- D.  $\text{CaO}$**

**Phenol was isolated by Runge from \_\_\_\_\_?**

- A. vegetable oil
- B. coaltar**
- C. wood
- D. none of these

**The hydrogenation of phenol in the presence of Ni and heat gives \_\_\_\_\_?**

- A. cyclohexane
- B. n – hexane
- C. 1 – hexanol
- D. cyclohexanol**

**Ethanol and methanol can be distinguished by a \_\_\_\_\_?**

- A. Iodoform test**
- B. Lucas test
- C. Benedicts test
- D. Tollens test

**Which one of the following alcohol has greater boiling point \_\_\_\_\_?**

- A. ethanol
- B. ethylene glycol
- C. glycerol**
- D. methanol

**Water gas heated at  $450^\circ\text{C}$  and 200 atm pressure in the presence of  $\text{ZnO} + \text{Cr}_2\text{O}_3$  will produce \_\_\_\_\_?**

- A. methanol
- B. methanol**
- C. carbonic acid
- D. methane

**The formula of starch is \_\_\_\_\_?**

- A.  $\text{C}_{12}\text{H}_{22}\text{O}_{11}$
- B.  $\text{C}_6\text{H}_{10}\text{O}_5$
- C.  $(\text{C}_6\text{H}_{10}\text{O}_5)_n$**
- D.  $\text{C}_6\text{H}_{12}\text{O}_6$

**The rectified spirit contains \_\_\_\_\_?**

- A. 12% alcohol
- B. 90% alcohol
- C. 95% alcohol**
- D. 100% alcohol

**The oxidation of isopropyl alcohol will yield \_\_\_\_\_?**

- A. propane
- B. Propanol
- C. Propanone**
- D. Propanoic acid

**The distinction test for primary secondary and tertiary alcohol required to react each of them is \_\_\_\_\_?**

- A. Cone.  $\text{HCl}$  and anhydrous  $\text{SOCl}_2$
- B. Cone.  $\text{HCl}$  and anhydrous  $\text{CaCl}_2$
- C. Cone.  $\text{HCl}$  and anhydrous  $\text{PCl}_2$
- D. Cone.  $\text{HCl}$  and anhydrous  $\text{ZnCl}_2$**

**The given dissociation constant ( $K_a$ ) value  $1.3 \times 10^{-10}$  is of \_\_\_\_\_?**

- A. Alcohol
- B. Acetic acid
- C. Water
- D. Phenol**

**When phenol is heated with concentrated nitric acid the product is \_\_\_\_\_?**

- A. Picric acid**
- B. o-nitrophenol
- C. 1 3 5 -trinitro benzene
- D. p-nitrophenol

**Which compound shows hydrogen bonding ?**

- A.  $\text{C}_2\text{H}_6$
- B.  $\text{C}_2\text{H}_5\text{Cl}$
- C.  $\text{CH}_3\text{OCH}_3$
- D.  $\text{C}_2\text{H}_5\text{OH}$**

**Methyl alcohol is not used \_\_\_\_\_?**

- A. As a solvent
- B. As an antifreezing agent
- C. As a substitute for petrol**
- D. For denaturing of ethyl alcohol

An alcohol which can be prepared by fermentation is \_\_\_\_\_?

- A. CH<sub>3</sub>OH
- B. C<sub>3</sub>H<sub>7</sub>OH
- C. CH<sub>3</sub> – CH<sub>2</sub> – OH**
- D. C<sub>6</sub>H<sub>5</sub>OH

When alcohol reacts with phosphorous halides it give \_\_\_\_\_?

- A. alkyl halides**
- B. alkyl amine
- C. alkanes
- D. alkynes

Which one of the following compound does not have – OH group \_\_\_\_\_?

- A. ethylene glycol
- B. glycerol
- C. picric acid
- D. ethyl acetate**

Ethers show functional group isomerism with \_\_\_\_\_?

- A. aldehydes
- B. ketones
- C. alcohols**
- D. carboxylic acid

Which one of the following is also known as lactic acid ?

- A. 3-Hydroxy propanoic acid
- B. 2-Hydroxy propanoic acid**
- C. 2-hydroxy butanoic acid
- D. 3-hydroxy butanoic acid

The easy way of balancing the chemical equation is \_\_\_\_\_?

- A. according to atom's atomic number.
- B. According to atom's atomic mass.
- C. First we balance Metal than non-metal than Hydrogen than Oxygen.**
- D. None of the above

Which of the following noble gases is not present in atmosphere?

- A. Argon
- B. Helium

- C. Radon**
- D. Xenon

Which of the following noble gases is abundant in air?

- A. Neon
- B. Helium
- C. Argon**
- D. Methane

Which law states that "equal volumes of all gases, at the same temperature and pressure, have the same number of molecules?"

- A. Boyle's law
- B. Charles' law
- C. Gay-Lussac's law
- D. Avogadro's law**

Which law states that the volume of a given amount of gas held at constant pressure is directly proportional to the Kelvin temperature?

- A. Charles' Law**
- B. Avogadro's Law
- C. Graham's Law
- D. Boyle's law

Which law states that the rate of the effusion of a gas is inversely proportional to the square root of its density?

- A. Graham's Law**
- B. Gay-Lussac's law
- C. Boyle's law
- D. None of these

The valency of carbon Atom is \_\_\_\_\_ ?

- A. 1
- B. 2
- C. 3
- D. 4**

Read More Details about this Mcq

What is the Chemical formula of Zinc Hydroxide \_\_\_\_\_ ?

- A. Zn(OH)<sub>2</sub>**
- B. ZNO<sub>2</sub>
- C. Zn<sub>2</sub>(OH)<sub>3</sub>
- D. ZnOH

Permanent hardness of water due to sulphate of metals can be destroyed by the use of \_\_\_\_\_ ?

- A. Zeolites
- B. Sulphonides
- C. Lime
- D. Nitrates

Which among the following is not a property of Ionic bond \_\_\_\_\_ ?

- A. Sharing of electrons
- B. Transfer of electrons
- C. Losing of electrons
- D. Gain of electrons

Sum of protons and neutrons in an atom gives off \_\_\_\_\_ ?

- A. Nucleon number
- B. Mass number
- C. Atomic number
- D. Both A and B

What is the molecular weight of Ammonia (NH<sub>3</sub>) \_\_\_\_\_ ?

- A. 17.031 g/mol
- B. 18.031 g/mol
- C. 19.031 g/mol
- D. 27.033 g/mol

The absolute value of charge on electron was determined by \_\_\_\_\_ ?

- A. J.J.Thomson
- B. Chadwick
- C. Rutherford
- D. Robert Millikan

The discovery of neutron became very late because \_\_\_\_\_ ?

- A. It does not carry any charge
- B. It does not move
- C. It is a fundamental particle
- D. It is present in nucleus

What is the molecular formula for Nitric acid \_\_\_\_\_ ?

- A. HNO<sub>2</sub>
- B. HNO<sub>3</sub>

- C. HN<sub>2</sub>O<sub>2</sub>
- D. H<sub>2</sub>NO<sub>4</sub>

What is the molecular Weight of Nitric acid (HNO<sub>3</sub>) ?

- A. 63.012 g/mol
- B. 65.012 g/mol
- C. 70.012 g/mol
- D. 81.011 g/mol

The Branch of chemistry dealing with brewing and distilling is called \_\_\_\_\_ ?

- A. Zygology
- B. Zymology
- C. Zymurgy
- D. Zootaxy

The science of fermentation is called \_\_\_\_\_ ?

- A. Zygology
- B. Zymology
- C. Zymurgy
- D. Zootaxy

The reciprocal of the coefficient of viscosity is called \_\_\_\_\_ ?

- A. Density
- B. Specific gravity
- C. Fluidity
- D. Absorbance

For a given mass of a gas at constant temperature, if the value V becomes 3 times, the pressure will become \_\_\_\_\_ ?

- A. 3P
- B. P/3
- C. 3P/T
- D. 6P

A theoretical link between quantum mechanics and thermodynamics is \_\_\_\_\_ ?

- A. Electrochemistry
- B. Matrix mechanics
- C. Statistical thermodynamics
- D. Soectroscopic analysis

Stainless steel contains \_\_\_\_\_ ?

- A. Fe+Cr+Ni  
 B. Fe+Ni+Cu  
 C. Fe+ Cr+Cu  
 D. Cu+C+Ni

Carbon in wrought iron is present as \_\_\_\_\_?

- A. Silicon carbide  
**B. Iron carbide**  
 C. Graphite  
 D. Partly as iron carbide and partly as graphite

If steel is heated to a temperature well below red heat and is then cooled slowly, the process is called \_\_\_\_\_?

- A. Annealing  
 B. Quenching  
 C. Tempering  
 D. Nitriding

The substance used in cancer therapy is \_\_\_\_\_?

- A. Fe  
**B. Co**  
 C. Ni  
 D. Rn

---

Transition elements, in general, exhibit the following properties, except one. Name that property?

- A. Variable oxidation state  
**B. Natural Radioactivity**  
 C. Tendency to form complexes  
 D. Formation of alloys

Which of the following alloys contain(s) Cu and Zn?

- A. Bronze  
**B. Brass**  
 C. Gun-metal  
 D. Type metal

Which of the following is soluble in water?

- A. AgF  
 B. AgCl  
 C. AgBr  
 D. AgI

The maximum oxidation shown by manganese is \_\_\_\_\_?

- A. +2  
 B. +4  
 C. +5  
**D. +7**

Colour in transition metal compounds is attributed to \_\_\_\_\_?

- A. Small sized metal ions  
 B. Absorption of light in UV region  
 C. Complete ns sub-shell  
**D. Incomplete (n-1) d sub-shell**

Which of the following statements is false about transition metals?

- A. They form complexes  
 B. They show variable valency  
**C. All transition metal compounds are paramagnetic**  
 D. They form coloured ions

The by-product of the process of Saponification is \_\_\_\_\_?

- A. Methanol  
 B. Glycol  
**C. Glycerol**  
 D. Sodium hydroxide

Polyethylene Glycols are used in the preparation of which type of detergents?

- A. Cationic detergents  
 B. Anionic detergents  
**C. Non-ionic detergents soap**  
 D. All of above

\_\_\_\_\_ surfactants perform well over a wide range water hardness and PH?

- A. Anionic  
 B. Cationic  
**C. Nonionic**  
 D. Neutral

Commercial detergents contain mainly \_\_\_\_\_?

- A. RCOON  
 B. RONa  
 C. RSNa

D.  $\text{ROsO}_3\text{Na}$   
Muhammad Ali Kunbhar

Which one of the following is caustic potash?

- A. NaOH
- B. KOH**
- C. NaCl
- D.  $\text{NaBH}_4$

The carbon-carbon bond strength is maximum in \_\_\_\_\_?

- A.  $\text{CH}_3\text{CH}_3$**
- B.  $\text{CH}_2=\text{CH}_2$
- C. Benzene
- D. Cyclohexane

Which of the following effects best explains that o-nitrophenol is insoluble in water?

- A. Inductive effect
- B. Resonance effect
- C. Intermolecular H-bonding**
- D. Isomeric effect

Which one of the following is most acidic?

- A. Phenol
- B. P-nitrophenol**
- C. O-nitrophenol
- D. M-nitrophenol

Chlorine Cl when attached to benzene has \_\_\_\_\_?

- A. +I and +R effect
- B. -I and +R effect**
- C. +I and -R effect
- D. -I and -R effect

The criteria for aromaticity is presence of \_\_\_\_\_?

- A. Unsaturation
- B. Cyclic structure
- C. Presence of  $4n\pi$  electrons
- D. Presence of  $4n+2\pi$  electrons**

The bond angle between hybrid orbitals in methane  $\text{CH}_3$  is \_\_\_\_\_?

- A.  $115.5^\circ$
- B.  $109.5^\circ$**

- C.  $105.7^\circ$
- D.  $180^\circ$

The bond length of  $\text{C}=\text{C}$  is \_\_\_\_\_?

- A.  $1.20\text{Å}$
- B.  $1.34\text{Å}$
- C.  $1.54\text{Å}$
- D.  $1.68\text{Å}$**

The stationary and mobile phases in paper chromatography are \_\_\_\_\_?

- A. Liquid/liquid
- B. Solid/liquid**
- C. Liquid/solid
- D. Liquid/gas

Beilstein test is used for \_\_\_\_\_?

- A. Cl**
- B.  $\text{N}_2$
- C.  $\text{CO}_2$
- D. CO

Presence of nitrogen in organic compounds is tested as \_\_\_\_\_?

- A. Nitrogen gas
- B.  $\text{NH}_3$
- C.  $\text{CN}^-$**
- D. NO

The molar mass of an organic acids is determined by \_\_\_\_\_?

- A. Depression of freezing point
- B. Volumetric method**
- C. Victor Meyer's method
- D. Osmosis method

The IUPAC suffix used for \_\_\_\_\_ NC group?

- A. Cyanide
- B. Isocyanides
- C. Nitrile**
- D. Carbylamines

The IUPAC name of ethylene oxide is \_\_\_\_\_?

- A. Epoxy methane
- B. Oxoethene**
- C. Methoxymethane
- D. Oxirane

The IUPAC name of  $\text{HCONH}_2$  is \_\_\_\_\_?

- A. Methanamide
- B. Methanoylamine
- C. Aminoethanol
- D. Formanide

The compound  $(\text{CH}_3)_3\text{COH}$  according to IUPAC is known as \_\_\_\_\_?

- A. Tert-Butanol
- B. 2,2-Dimethyl-propanol
- C. Tert Alcohol
- D. 1,1- Diethylethanol

The PH of the 0.0032 M  $\text{H}_2\text{SO}_4$  is \_\_\_\_\_?

- A. 3.2
- B. 4.0
- C. 2.198
- D. 1.0

The PH of the  $1.3 \times 10^{-4}$   $\text{NH}_4\text{Cl}$  is \_\_\_\_\_?

- A. 1.3
- B. 4.0
- C. 2.886
- D. 3.886

The PH of milk is \_\_\_\_\_?

- A. 6.0
- B. 6.5
- C. 7.0
- D. 7.5

Read More Details about this Mcq

The PH of Tears is \_\_\_\_\_?

- A. 7.0
- B. 7.4
- C. 7.8
- D. 8.2

The PH of pure water at  $25^\circ\text{C}$ ,  $K_w=1 \times 10^{-14}$  \_\_\_\_\_?

- A. 0
- B. 7
- C. 14
- D. None of above

When 0.01 moles of  $\text{NaOH}$  are added to a buffer solution, its PH changes from 4.745 to 4.832. What is its?

- A. 0.115
- B. 0.900
- C. 0.015
- D. 0.215

Alpha particles can be detected by using \_\_\_\_\_?

- A. Gold foils
- B. Barium sulphate
- C. Zinc sulphide screen
- D. Thin Aluminium sheet

Which one of the following is the correct sequence according to atomic weights?

- A.  $\text{Fe} > \text{Co} > \text{Ni}$
- B.  $\text{Co} > \text{Ni} > \text{Fe}$
- C.  $\text{Ni} > \text{Co} > \text{Fe}$
- D.  $\text{Co} > \text{Fe} > \text{Ni}$

Generally the limit of visible spectrum is \_\_\_\_\_?

- A. 1000 to 300  $\text{A}^\circ$
- B. 3800 to 7600  $\text{A}^\circ$
- C. 8000 to 10,000  $\text{A}^\circ$
- D. 12,000 to 15,000  $\text{A}^\circ$

If R is the Rydberg constant for hydrogen, then wave-number of the second line in the Lyman series is \_\_\_\_\_?

- A. 2 R
- B. R/2
- C. 3R/4
- D. R/4

Magnetic quantum number specifies \_\_\_\_\_?

- A. Size of orbitals
- B. Shape of orbitals
- C. Orientation of orbitals
- D. All of the above

Azimuthal quantum number defines \_\_\_\_\_?

- A. e/m ratio of an electron
- B. Spin of an electron

- C. Angular momentum of an electron  
D. Magnetic momentum of an electron

The energy of one mole of photons of radiation, whose frequency is  $4 \times 10^{14}$  Hz, is \_\_\_\_\_?

- A. 159.6kJ  
B. 135.5 KJ  
C. 110.5 KJ  
D. 80.4 KJ

Which of the following gases shows more ideal behaviour at  $0^\circ\text{C}$  \_\_\_\_\_?

- A.  $\text{H}_2$   
B.  $\text{CH}_4$   
C. He  
D.  $\text{NH}_3$

In a closed vessel, a gas is heated from 300K to 600 K. The kinetic energy becomes \_\_\_\_\_?

- A. Double  
B. Same  
C. Half  
D. Four times

Pressure remain constant, at which temperature the volume of gas becomes twice of what it is at  $0^\circ\text{C}$ ?

- A.  $546^\circ\text{C}$   
B. 546 K  
C.  $200^\circ\text{C}$   
D. 273 K

The density of a gas is  $1.964 \text{ g dm}^{-3}$  at 273 K and 76 cm Hg. The gas is \_\_\_\_\_?

- A.  $\text{CH}_4$   
B.  $\text{CO}_2$   
C.  $\text{C}_2\text{H}_4$   
D. Xe

Which of the following haloalkane is hydrolysed by  $\text{SN}_1$  mechanism?

- A.  $\text{CH}_3\text{Br}$   
B.  $\text{CH}_3\text{CH}_2\text{Br}$   
C.  $\text{CH}_3\text{CH}_2\text{CH}_2\text{Br}$   
D.  $(\text{CH}_3)_3\text{CBr}$

Hydrocarbon is formed when Grignard reagent is treated with \_\_\_\_\_?

- A.  $\text{H}_2\text{O}$   
B.  $\text{CH}_3\text{OH}$   
C. Both a and b  
D. None of the above

Grignard reagent gives carboxylic acid with \_\_\_\_\_?

- A.  $\text{CO}_2$   
B.  $\text{CH}_3\text{CHO}$   
C.  $\text{COC}_2$   
D. HCN

The law of triads is applicable to \_\_\_\_\_?

- A. Li, Be, B  
B. F, Cl, Br  
C. Cl, Br, I  
D. Na, K, Rb

The concept of telluric helix was developed by \_\_\_\_\_?

- A. Lothar Meyer  
B. A.E de Chancourtois  
C. Newland  
D. Dobereiner

Which group contains elements that exist as monoatomic molecule?

- A. 1  
B. 2  
C. 14  
D. 18

The element having electronic configuration  $[\text{Kr}] 4d^{10}, 4f^{14}, 5s^2, 5p^6, 5d^1, 6s^2$  belongs to \_\_\_\_\_?

- A. S-Block  
B. P-Block  
C. d-Block  
D. f-Block

Which one of the following is a bridge element?

- A. Be  
B. Cl  
C. K  
D. P

The common oxidation state of lanthanides is \_\_\_\_\_?

- A. +3
- B. +2
- C. +1
- D. +4

Which of the following is most soluble on water?

- A. BaSO<sub>4</sub>
- B. SrSO<sub>4</sub>
- C. CaSO<sub>4</sub>
- D. MgSO<sub>4</sub>

Which of the following orbitals has maximum penetration effect?

- A. s
- B. p
- C. d
- D. f

The heat energy produced when the human body metabolises 1 gram of fat is \_\_\_\_\_?

- A. 30 KJ
- B. 1 KJ
- C. 39 KJ
- D. 29 KJ

Which of the following phenomenon is considered responsible for Global Warming?

- A. Greenhouse effect
- B. Fire in coal mines
- C. Dry farming
- D. Monsoon

The number of d-electrons in Fe<sup>2+</sup> (Z = 26) is not equal to that of \_\_\_\_\_?

- A. p-electrons in Ne (Z = 10)
- B. s-electrons in Mg (Z = 12)
- C. d-electrons in Fe (Z = 26)
- D. p-electrons in Cl (Z = 17)

The metallurgical process in which a metal is obtained in a fused state is called \_\_\_\_\_?

- A. smelting
- B. roasting
- C. calcinations
- D. froth floatation

The molecules of which gas have highest speed?

- A. H<sub>2</sub> at -73°C
- B. CH<sub>4</sub> at 300 K
- C. N<sub>2</sub> at 1,027°C
- D. O<sub>2</sub> at 0°C

The law which states that the amount of gas dissolved in a liquid is proportional to its partial pressure is \_\_\_\_\_?

- A. Dalton's law
- B. Gay Lussac's law
- C. Henry's law
- D. Raoult's law

The Latin word formica means ant. The name formic acid is derived from this Latin word because \_\_\_\_\_?

- A. this acid, in ancient times, was used to eliminate ant-hills
- B. this corrosive acid is secreted by ants to drive away their enemies
- C. this acid was first obtained by the distillation of ants
- D. ants are attracted by the odour of this acid

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- B.  $CH_4$  at 300 K
- C.  $N_2$  at  $1,027^\circ C$
- D.  $O_2$  at  $0^\circ C$

When an aldehyde is reacted with hydrogen cyanide a "Cyanhydrin" is formed. This process is best termed as \_\_\_\_\_?

- A. Electrophilic addition
- B. Electrophilic substitution
- C. Nucleophilic addition
- D. Nucleophilic substitution

Which of the following solvents would best facilitate an  $SN_2$  substitution reaction?

- A. Water
- B. Hexane
- C. Dimethylformamide
- D. Ethanol

In a molecule of carbon monoxide, what are the formal charges on the two atoms?

- A. Carbon=0, Oxygen=0
- B. Carbon= +1, Oxygen= -1
- C. Carbon= -1, Oxygen= +1
- D. Carbon=0, Oxygen= -1

Which of the following aqueous solutions would have the highest boiling point?

- A. 0.20 m glucose
- B. 0.20 m NaCl
- C. 0.15 m  $CaCl_2$
- D. 0.25 m sucrose

The mass of 3.2 moles of ammonia ( $NH_3$ ) gas?

- A. 53.4 grams
- B. 54.4 grams
- C. 55.4 grams
- D. 56.4 grams

How many moles are in 22.2 grams of Calcium chloride,  $CaCl_2$ ?

- A. 0.2 moles
- B. 0.3 moles
- C. 0.4 moles
- D. 0.5 moles

What is the mass percent of silver in silver nitrate,  $AgNO_3$ ?

- A. 64.5%
- B. 65.6%
- C. 63.5%
- D. 61.5%

A sample of an iron and oxygen ore has a mass of 35.8 grams. The iron in the compound has a mass of 27.9 grams. What is the percent iron in the ore?

- A. 74% Fe
- B. 75% Fe
- C. 77% Fe
- D. 78% Fe

A compound is determined to have an empirical formula of  $C_2H_6O$  and a molar mass of 138 g/mole. What is the molecular formula?

- A.  $C_2H_6O$
- B.  $C_6H_{18}O_3$
- C.  $C_6H_{12}O_6$
- D.  $C_2H_5O$

A substance is analyzed and found to have an empirical formula of  $CH_2$  and a molar mass of 56g/mole. What is the molecular formula of the compound?

- A.  $C_2H_4$
- B.  $C_3H_6$
- C.  $C_4H_8$
- D.  $C_5H_{10}$

The number of atoms present in 21.6 gram of silver (atomic weight = 108) are same as the molecules in \_\_\_\_\_?

- A. 1.8 gram of  $H_2O$
- B. 12 moles of  $KMnO_4$
- C. 0.6N  $H_2SO_4$
- D. 4.6 gram of  $C_2H_5OH$

The molecular formula for cholesterol is  $C_{27}H_{46}O$ . What are the degrees of unsaturation for this compound?

- A. 5  
B. 6  
C. 7  
D. 8

The most appropriate method for separating a large quantity of a mixture of nonvolatile, nonpolar organic compounds would be \_\_\_\_\_?

- A. Distillation  
B. Extraction  
C. Gas chromatography  
D. **Column chromatography**

The relatively high energy of the gauche conformation of butane is primarily associated with \_\_\_\_\_?

- A. Angle strain  
B. Torsional strain  
C. **Steric strain**  
D. Orbital strain

What is the density of argon gas at a temperature of 30°C and a pressure of 1.05 atm?

- A. 1.65 g/L  
B. 1.67 g/L  
C. **1.68 g/L**  
D. None of the above

The formula  $C_6H_5-CO-CH_3$  represents \_\_\_\_\_?

- A. Acetone  
B. Acetic acid  
C. **Acetophenone**  
D. Phenyl acetate

Poisonous gas present in the exhaust fumes of a jet plane is \_\_\_\_\_?

- A. Fluorocarbon  
B. **Carbon monoxide**  
C. Methane  
D.  $C_2H_2$

The O-O linkage is present in \_\_\_\_\_?

- A.  $H_2S_2O_3$   
B.  **$H_2SO_8$**   
C.  $H_2S_4O_6$   
D.  $H_2S_2O_6$

The number of lone pairs in  $XeOF_4$  is \_\_\_\_\_?

- A. 0  
B. **1**  
C. 2  
D. 3

Argon gas was discovered by \_\_\_\_\_?

- A. Rayleigh  
B. **Ramsay**  
C. Lockerey  
D. Dalton

$SO_2$  reacts with Cl in sunlight to form \_\_\_\_\_?

- A. Sulphur dioxide  
B. **Sulphuryl chloride**  
C. Sulphanyl chloride  
D. All of the above

Oxidation state +1 for phosphorous is found in \_\_\_\_\_?

- A.  $H_3PO_3$   
B.  $H_3PO_4$   
C.  **$H_3PO_2$**   
D.  $H_2P_2O_7$

Electric bulb filament is made of \_\_\_\_\_?

- A. Copper  
B. Aluminum  
C. Lead  
D. **Tungsten**

Tetraethyl lead is used as \_\_\_\_\_?

- A. Pain Killer  
B. Fire Extinguisher  
C. Mosquito Repellent  
D. **Petrol Additive**

The average salinity of sea water is \_\_\_\_\_?

- A. 3%  
B. **3.5%**  
C. 2.5%  
D. 2%

The chemical (Ethyl Mercaptan) added to the otherwise odourless LPG cooking gas for

imparting a detectable smell to the gas is a compound of:\_\_\_\_\_?

- A. Bromine
- B. Fluorine
- C. Chlorine
- D. Sulphur**

Marsh gas is\_\_\_\_\_?

- A. Nitrogen
- B. Ethane
- C. Methane**
- D. Hydrogen

Potassium Permanganate is used for purifying drinking water, because\_\_\_\_\_?

- A. It is a sterilising agent.
- B. It dissolves the impurities of water.
- C. It is a reducing agent.
- D. It is an oxidising agent.**

Find the PH of a 0.001 M solution of Nitric acid HNO<sub>3</sub>?

- A. 2
- B. 3**
- C. 4
- D. 5

Which set of quantum numbers is not allowed?

- A.  $n=2, l=1, m_l=0, m_s=+1/2$
- B.  $n=2, l=1, m_l=-1, m_s=+1/2$
- C.  $n=2, l=0, m_l=0, m_s=-1/2$
- D.  $n=2, l=2, m_l=1, m_s=-1/2$**

The purpose of Smelting an ore is to\_\_\_\_\_?

- A. Reduce it**
- B. Oxidize it
- C. Obtain an alloy
- D. Separate volatile impurities

Which Oxide of Manganese is amphoteric?

- A. MnO<sub>2</sub>**
- B. Mn<sub>2</sub>O<sub>3</sub>
- C. Mn<sub>2</sub>O<sub>7</sub>
- D. MnO

A process used for the Concentration of Ore is\_\_\_\_\_?

- A. Roasting
- B. Froth flotation**
- C. Electrolysis
- D. Distillation

Which metal is used as a reducing agent in Smelting\_\_\_\_\_?

- A. C**
- B. Zn
- C. Al
- D. Cu

Parke's process is used in the extraction of\_\_\_\_\_?

- A. Iron
- B. Sodium
- C. Silver**
- D. Zinc

In melting of iron, which of the following reactions takes place in Blast Furnace at 400°C- 600°C\_\_\_\_\_?

- A.  $\text{CaO} + \text{SiO}_2 \longrightarrow \text{CaSiO}_3$
- B.  $2\text{FeS} + 3\text{O}_2 \longrightarrow 2\text{Fe} + 3\text{SO}_2$
- C.  $\text{FeSiO}_3 \longrightarrow \text{FeSiO}_3$
- D.  $\text{Fe}_2\text{O}_3 + 3\text{CO} \longrightarrow 2\text{Fe} + 3\text{CO}_2$**

Gypsum is\_\_\_\_\_?

- A. CaSO<sub>4</sub>
- B. CaSO<sub>4</sub>.1/2H<sub>2</sub>O
- C. CaSO<sub>4</sub>.2H<sub>2</sub>O**
- D. CaSO<sub>4</sub>.3H<sub>2</sub>O

Basicity of orthophosphoric acid is\_\_\_\_\_?

- A. 2
- B. 3**
- C. 4
- D. 5

Ce<sup>58</sup> is a member of\_\_\_\_\_?

- A. s-block
- B. p-block
- C. d-block
- D. f-block**

Electronic Configuration of Calcium (Ca) atom may be written as\_\_\_\_\_?

- A. Ne, 4p<sup>2</sup>  
**B. Ar, 4s<sup>2</sup>**  
 C. Ne, 4s<sup>2</sup>  
 D. Kr, 4p<sup>2</sup>

A 10 volume solution of H<sub>2</sub>O<sub>2</sub> means \_\_\_\_\_?

- A. 10 grams of H<sub>2</sub>O<sub>2</sub> solution liberate 10 mL of O<sub>2</sub> at STP  
 B. 10 gram equivalents of H<sub>2</sub>O<sub>2</sub> liberates 10 mL of O<sub>2</sub> at STP  
 C. 10 litres of H<sub>2</sub>O<sub>2</sub> liberates 19 mL of O<sub>2</sub> at STP  
**D. 1mL of solution of H<sub>2</sub>O<sub>2</sub> liberates 10 mL of O<sub>2</sub> at STP**

The volume strength of 1.5 N H<sub>2</sub>O<sub>2</sub> solution is \_\_\_\_\_?

- A. 4.8  
 B. 5.2  
 C. 8.8  
**D. 8.4**

The structure of H<sub>2</sub>O<sub>2</sub> is \_\_\_\_\_?

- A. Planar  
**B. Non- polar**  
 C. Spherical  
 D. Linear

Which of the following element has the maximum electron affinity \_\_\_\_\_?

- A. Cl  
 B. Br  
 C. I  
 D. F

The type of hybridisation of boron in diborane is \_\_\_\_\_?

- A. Sp- hybridisation  
 B. Sp<sup>2</sup>- hybridisation  
 C. Sp<sup>3</sup>- hybridisation  
 D. Sp<sup>3</sup>d<sup>2</sup>- hybridisation

Which of the following shows electrical conduction \_\_\_\_\_?

- A. Potassium  
**B. Graphite**  
 C. Diamond  
 D. Sodium

Cassiterite is an ore of \_\_\_\_\_?

- A. Mn  
 B. Ni  
 C. Sb  
**D. Sn**

Percentage of lead in lead pencil is \_\_\_\_\_?

- A. Zero  
 B. 20  
 C. 80  
 D. 70

In borax bead test which compound is formed \_\_\_\_\_?

- A. Ortho borate  
**B. Meta borate**  
 C. Double oxide  
 D. Tetra borate

Water molecule is \_\_\_\_\_?

- A. V-shaped  
 B. Angular  
 C. Pyramidal  
 D. Triangular planer

I<sub>3</sub> (Tri-iodine) has shape \_\_\_\_\_?

- A. Trigonal bipyramidal  
**B. Linear**  
 C. Square bipyramidal  
 D. Both A and C

BeCl<sub>2</sub> has the hybrid orbitals of type \_\_\_\_\_?

- A. Sp<sup>2</sup>  
 B. Sp<sup>3</sup>  
**C. Sp**  
 D. dsp<sup>2</sup>

Molecular orbital Theory is also called \_\_\_\_\_?

- A. Bonding theory  
 B. Band theory  
**C. Antibonding theory**  
 D. π and σ bonding theory

Formula of Galena is \_\_\_\_\_?

- A. PbS  
 B. HgS

- C.  $AS_2S_3$   
D.  $FeS_2$

ca by a group of \_\_\_\_\_?

- A.  $CH_3$   
B. OH  
C.  $OCH_3$   
D.  $O_2$

**Boron is non metal while other elements of IIIA group are metals. This is because \_\_\_\_\_?**

- A. it has small size  
B. it has high nuclear charge  
C. it forms molecular addition compounds  
D. all of the above

**The coloured glassy mass in borax bead test is due to the formation of \_\_\_\_\_?**

- A. metal borate  
B. metal meta borate  
C. metal boride  
D. metal silicate

**If temperature of gallium arsenide is increased then its conductivity will \_\_\_\_\_?**

- A. decrease  
B. increase  
C. remains constant  
D. first decreases then increases

**Which of the following will decompose to produce litharge \_\_\_\_\_?**

- A.  $Pb_2O$   
B.  $Pb_3O_4$   
C.  $PbO_2$   
D. All of the above

**Which of the following is metasilicic acid ?**

- A.  $H_2SnO_3$   
B.  $H_2SiO_3$   
C.  $H_3AsO_4$   
D.  $H_3SbO_4$

**Boron in soil has been considered micronutrient for \_\_\_\_\_?**

- A. Soil porosity  
B. Proper growth of plants  
C. Alkalinity of soil  
D. All

**Substance which is found in dried up lakes of Tibet and California is \_\_\_\_\_?**

- A. Tincal  
B. Boric acid  
C. Calcium carbonate  
D. Colemanite

**Which of the following does not give Borax bead test ?**

- A. Cu  
B. Cr  
C. Ni  
D. Al

**The metal which is used in thermite process because of its activity is \_\_\_\_\_?**

- A. iron  
B. copper  
C. aluminium  
D. zinc

**Ethylene diammine is ligand \_\_\_\_\_?**

- A. mono dentate  
B. Bi dentate  
C. tri dentate  
D. Poly dentate

**If volumetric analysis methyl orange indicator is used when \_\_\_\_\_?**

- A. Acid is strong  
B. Acid is weak  
C. Base is strong  
D. Acid is strong base is weak

**For the reaction  $2HI \rightleftharpoons H_2 + I_2$**

- A.  $K_p > K_c$   
B.  $K_c > K_p$   
C.  $K_p = K_c$   
D.  $K_p \leq K_c$

**The reaction of Lucas reagent is the fastest with \_\_\_\_\_?**

- A.  $(\text{CH}_3)_2\text{CHOH}$
- B.  $\text{CH}_3(\text{CH}_2)\text{OH}$
- C.  $\text{CH}_3\text{CH}_2\text{OH}$
- D.  $(\text{CH}_3)_3\text{COH}$**

If a compound contains 24 gram of carbon 2 gram of hydrogen and 64 gram of oxygen then its empirical formula will be \_\_\_\_\_?

- A.  $\text{C}_2\text{H}_2\text{O}_4$
- B.  $\text{CH}_2$
- C.  $\text{CH}_2\text{O}$
- D.  $\text{CHO}_2$**

Noble gases are so called zero group because they have: \_\_\_\_\_?

- A. Zero Valency
- B. Zero Electronegativity
- C. Zero Electron Affinity
- D. Both A and B**
- E. All of these

What is chemical symbol for Tungsten?

- A. Z
- B. T
- C. Tn
- D. W**

Read More Details about this Mcq

The composition of ' Golden spangles is \_\_\_\_\_?

- A.  $\text{PbCrO}_4$**
- B.  $\text{PbI}_2$
- C.  $\text{As}_2\text{Cr}_2\text{O}_7$
- D.  $\text{BaCrO}_4$

When  $\text{SO}_2$  solution is passed over which of the following it turns green?

- A.  $\text{K}_2\text{Cr}_2\text{O}_7$**
- B.  $\text{H}_2\text{SO}_4$
- C.  $\text{SO}_3$
- D.  $\text{P}_2\text{O}_5$

A bivalent metal has the equivalent weight of 12. The molecular weight to its oxide will be \_\_\_\_\_?

- A. 24
- B. 32**

- C. 36
- D. 40**

The weight of a metal of equivalent of 12 which will give 0.475g of its chloride is \_\_\_\_\_?

- A. 0.12g
- B. 0.16g
- C. 0.18g**
- D. 0.24g

The amount of Zinc (at. Wt=65) necessary to produce 224 ml of  $\text{H}_2$  by the reaction with an acid will be \_\_\_\_\_?

- A. 0.065gm
- B. 0.65gm
- C. 6.5gm
- D. 7.5gm**

Which of the following compounds is not soluble in  $\text{HNO}_3$  \_\_\_\_\_?

- A.  $\text{CuS}$
- B.  $\text{CdS}$
- C.  $\text{PbS}$
- D.  $\text{AgCl}$**

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