CHEMISTRY

PHYSICAL CHEMISTRY

- The element having strongest intermolecular forces of attraction — Iodine
- When substance moves from a solid to a liquid state all of the following changes occur except: — Kinetic energy of molecules decrease
- 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: — ABAB (hexagonal)
- Most of thermodynamic parameters are: — State functions
- The correct set of four quantum numbers for the valence electron of rubidium atoms (Z = 37) is: — 5, 0, 0, +1/2
- The atomic radius of the elements ____ as one moves down the first group of the periodic table. — Increases
- Beryllium Sulphate is less soluble in water due to: — High inflammable energy
- What is the name of that system, which uses radioactivity to decide the period of materials of-pre-historic period? — Carbon Dating
- The anode in a dry cell consists of: — Zinc
- Cement is made hard with: — Hydration and dissociation of water
- What happens when a chemical bond is formed? — Energy is always absorbed
- Cane sugar is a — Carbohydrate
- In which state maximum iron ore is found? — Fe_2O_3
- "All the four quantum numbers of two electrons in an atom are not the same." It is the law of: — Exclusion Principle of Pauli
- Commercial nitric acid is coloured because it contains dissolved? — Nitrous Oxide
- Fertiliser having high nitrogen content is: — Ammonium Nitrate
- Where does the oxygen that keeps us alive come from: — Water
- The gas used for artificial fruit ripening of green fruit is: — Ethylene
- The three elements most needed in common fertilizers are: — Nitrogen, Potassium and Phosphorus
- Which metal pollutes the air of a city having large number of automobiles? — Lead
- Which gas is present under pressure in soft drinks? — Carbon dioxide
- The substance which does not expand on going from liquid slate to solid state is: — Type Metal
- The radio-active element used in heart pacemakers is: — Uranium
- The element which is commonly used in nuclear for producing electricity by nuclear fission is: — Uranium
- What is used as a lubricant in heavy machines? — Graphite
- What is used to iodize common salt? — Potassium Iodate
- Milk is a colloidal system in which: — Fat is dispersed in water
- The enzyme that converts glucose to ethyl alcohol is: — Zymase
- Silk fibre chemically is: — Protein
- Who developed Hydrogen Bomb? — Edward Teller
- When there are two electrons in the same orbital, they have: — Opposite spin
- Galvanization is the: — deposition of zinc on iron
- Fermentation of milk to curd is due to: — Lactobacillus
- By which organic compound all the oils are known? — Hydrocarbon
- The atomic number of carbon is 6 and its atomic mass is 12. How many are there protons in the nucleus of carbon? — 6
- Who developed atom bomb? — J. Robert Openheimer
- The major harmful gas emitted by automobile vehicle which causes air pollution is: — Carbon dioxide
- The acid used in lead storage cells is: — Sulphuric Acid
- Milk tastes sour when kept in the open for sometime due to the formation of: — Lactic Acid
- What is the most commonly used substance in fluorescent tubes? — Mercury vapour and argon
- What is "milk of magnesia" chemically? — Magnesium Hydroxide
- Soap is prepared by boiling caustic soda with: — Fats
- Bronze is an alloy of: — Copper and Tin
- The natural source of hydrocarbon is: — Crude Oil
- What is chiefly present in LPG (Liquefied Petroleum Gas)? — Butane
- Humburger effect is otherwise known as: — Chloride Shift
- Bauxite is an alloy of which of the following metals? — Aluminium
- Nucleus of an atom consists of: — Proton and Neutron
- Galvanized iron is made by coating iron with: — Zinc
- Isobars are lines joining places having equal: — Pressure
- Global warming is mainly due to the accumulation of: — Carbon dioxide
- The most suitable vessel for storing concentrated sulphuric acid is: — Glass Vessel
- What is the element that is in the highest percentage in the composition of the earth? — Oxygen
- The advantage of detergents over soaps is: — Detergents give lather even with hard water
- The fundamental particles present in the nucleus of an atom are: — Proton, Neutron
- Bleaching action of moist sulphur dioxide is because of its: — Oxidizing property
- The long range potential of nuclear energy in India depends on its reserves of: — Uranium
- The ratio of pure gold in 18 carat gold is: — 75%
- Diamond is harder than graphite because of: — Difference in layers of atoms
- Gobar gas contains mainly: — Methane
- The gas used for artificial fruit ripening of green fruit is: — Ethylene
- What is the element required for solar energy conversion? — Silicon

- Liquid crystal was discovered by: — Fredrick Reinter
- If electricity is passed through CuSO4 solution by using Pt electrode then which of the following possible change occurs? — Colour of the solution becomes fade
- Two fundamental ways to transfer energy are: — Heat and Work
- Stronger the oxidizing agent greater is the: — Reduction potential
- What happens when common salt is dissolved in water? — Boiling point of water increases
- Which one is a conductor but is not malleable? — Graphite
- Every sample of matter with uniform properties and fixed composition is called: — Phase
- Which has maximum oxidation number? — Mn
- Homogeneous mixture of two or more than two compounds is called: — Solution
- The component of solution which is in smaller amount is called: — Solute
- The density of water may be: — Greater than that of ice
- Forces of attraction which may be present between all kinds of atoms and molecules are: — Van der Waal
- The quantity of heat required to convert one mole of liquid into its vapours at its boiling point is called molar heat of: — Vaporization
- Solution with maximum concentration of solute at given temperature is called: — Saturated solution
- The molal boiling point constant is the ration of the elevation of boiling point to: — Molality
- In an electrolytic cell current flows? — From anode to cathode outside the cell
- Steam causes more sever burn than the boiling water because it possesses because of the: — Latent heat of vaporization
- Water has maximum density at: — 4° C
- In a galvanic cell: — Chemical energy is converted into electricity
- Number of moles in 1 kg of solvent is called: — Molality
- In partially miscible liquids the two layers are: — saturated solutions of each liquid
- If the volume of solution is equal to sum of volumes of its all components then the solution: — will be an ideal solution
- The degree of dissociation of week electrolyte increases as: — Dilution increases
- Molten NaCl conducts electricity due to the presence of: — Free ions
- The conversion of vapours back into their liquid state is called: — condensation
- When water freezes at 0° C its density decreases due to: — the presence of Empty space in the structure of ice
- Electricity in voltaic cell is produced due to: — Both oxidation and reduction
- In electrolytic solution conductance of electricity is due to: — Ions
- In electrolytic cell electricity carries: — Non-spontaneous reaction
- Which one of the following is a correct statement? — Acetic acid is a weak electrolyte
- Reaction at anode is called: — Oxidation
- In an electrolytic cell cathode provides electrons to: — Positive ion
- In Galvanic cell electrons flow from anode to cathode through: — External electric circuit
- Decrease in oxidation number is called: — reduction
- For the measurement of standard electrode potential Zn is dipped in: — 1 M $ZnSO_4$ solution
- A gas absorbs a photon of 355 nm and emits at two wavelengths. If one of the emissions is at 680 nm, the other is at: — 743
- The solution which distils over with change in composition is: — Zeotropic solution
- Salt bridge transfers: — Ions
- Isotopes differs in: — chemical properties
- The attractive forces between the partial positive end of one molecule and partial negative end of other molecule are called: — Dipole-dipole forces
- Vapour pressure is not affected by: — Surface area
- Voltaic cell can be recharged by: — by replacing external circuit with external source of electricity
- Temperature for the measurement of standard electrode potential is: — 298K
- Electrode potential of Zn: — depends on the nature of the coupled electrode
- List of elements based on hydrogen scale is called: — electrochemical series
- The mass of one mole of electron is: — 0.55
- Mixtures which distill over without change in composition is called: — azeotropic mixture
- The conductivity of strong electrolyte: — Increase on dilution slightly
- The number of atoms in a molecule determines: — atomicity
- Rising of a wetting liquid in a capillary tube is due to: — Adhesive forces
- Which element has same isotopes like palladium? — Calcium
- Water absorber used in combustion analysis is: — Mg $(ClO_4)_2$
- A limiting reactant is one which: — gives the minimum amount of the product under consideration
- Table salt crystallizes with a: — body centered cubic lattice
- Concentration of solute molecule when they are in equilibrium with solid substance at particular temperature is called: — solubility
- During which process empty spaces between particles become minimum? — Condensation
- When a solution of an electrolyte is heated the conductance of the solution: — Increases because the electrolyte is dissociated more
- In the electrolytic cell, flow of electrons is from: — Anode to cathode through internal supply
- The element that act as anode always have _____ position in electrochemical cell. — Higher
- Beckmanns apparatus is used to measure: — depression in freezing point
- The determination of correct molecular weight from Raoult's law is applicable to: — non volatile solute in a dilute solution

- In galvanic cell Zn acts as an anode so its value of standard reduction potential in comparison to coupled electrode would be: — Greater
- Liquid gets the shape of the container when it is poured into it. Which one of the following reasons justifies it? — Liquid molecules can slide over each other
- Greater value of standard reduction potential greater will be tendency: — to get reduced
- Greater value of standard reduction potential greater will be tendency: — to accept electrons
- Boiling point elevations can be measured by: — Landsbergers method
- Greater value of standard reduction potential smaller will be tendency: — to form positive ions
- Lead accumulators are: — voltaic cell
- In alkaline battery the anode is made up of: — Zn
- The strength of solution of an element whose electrode potential is to be measured is: — 1M
- Apparent charge on atom in molecule is: — Oxidation Number
- Percentage of sulphuric acid in lead accumulator is: — 30%
- The half cells are interconnected through: — Salt Bridge
- The compounds in which water molecules are added are called: — Hydrates
- What is the chemical name for 'Baking Soda'? — Sodium bicarbonate
- Saccharin is made up of: — Toluene
- PVC is obtained by the polymerization of: — Vinyl Chloride
- The metallic constituents of hard water are: — Calcium, magnesium and iron
- The pH of human blood is between: — 7.5-8
- Aspirin is: — Acetyl Salicilic Acid
- Cloud is a colloidal dispersion of: — Water drops in a dispersion medium of air
- Which variety of coal contains recognizable traces of the original plant material? — Peat
- Which is the purest form of iron? — Wrought Iron
- Which metals forms an amalgam with other metals? — Mercury
- Detergents used for cleaning clothes and utensils contain: — Sulphonates
- Radioactive disintegration of uranium ultimately results in formation of: — Lead
- What is used in making smoke bombs? — Phosphorus
- German silver is an alloy of: — Zinc, Copper and Nickel
- A metal is exposed to the atmosphere for some time. It becomes coated with green carbonate. The metal must be: — Copper
- A super-cooled liquid is — Glass
- If we provide very high amount of heat to a liquid its boiling point will: — remain constant
- Crystallites are present in: — amorphous solids
- A solid may be made up of: — Atoms, ions or molecules
- One Faraday of electricity when passed through a solution of copper sulphate deposits: — 1 gm equivalent of Cu
- The amount of ion discharged during electrolysis is not directly proportional to: — Resistance
- When the sample of copper with zinc impurity is to be purified by electrolysis, the appropriate electrodes are Cathode Pure copper Impure sample Anode for:

- A malleable solid is one which can be: — Converted into thin sheets
- The type of filtering media used for filtration depending upon: — Nature of precipitate
- A safe and more reliable method for drying the crystal is: — Vacuum desiccators
- Amorphous substances posses: — No sharp melting points
- Crystalline solids can be identified easily from their: — sharp melting points
- Boiling points of hydrocarbons increase with the increase in number of carbon atoms. It is mainly due to: — More strength of London forces
- The viscosity of solids is: — infinite
- A method of separation of components from its solution using Distribution law is: — Solvent extraction
- During the electrolysis of fused NaCl3 which reaction occurs at anode? — Chloride ions are oxidized
- The number of moles of solute per kg of a solvent is called its: — Molality
- Equal masses of methane and oxygen are mixed in empty container at 250?(C) The fraction of total pressure exerted by oxygen is: — one / three
- Hydration is a process in which: — Both ions and molecules are surrounded by water molecules
- Plasma is used in: — Fluorescent bulb
- The molecules of CO_2 in dry ice form: — Molecular crystal
- Electrolysis of aqueous HCl solution produces: — H_2 gas at the cathode
- The phenomenon in which a compound exists in two or more crystalline forms is called: — Polymorphism
- Bucky balls is an allotropic from of: — Carbon
- ppm means: — parts of solute in one million parts of solution
- 1 molar solution of glucose in water contains weight of glucose: — 180g/dm^3
- Dilution, temperature and nature of electrolyte affect the: — conductivity of solution
- Increasing the temperature of an aqueous solution will cause: — Decrease in molarity
- Amount of electricity that can deposit 108 gm of silver from AgNO3 solution is: — 1 faraday
- What will be the molarity of a solution containing 5g of sodium hydroxide in 250ml solution? — 0.5
- Bohr's model is contradicted by: — Heisenbergs uncertainty principle
- Only London dispersion forces are present among the: — Molecules of solid iodine
- Water of crystallization can be removed by: — heating
- Atomic radius can be determined by: — X - ray diffraction
- A solution of sodium sulphate in water is electrolysed using inert electrodes. The products at the cathode and anode are respectively: — H_2, O_2
- The rate constant of a reaction is equal to rate of reaction: — When concentrations of all reactants are unity
- The number amino acid units for each turn of helix on average are: — 27
- An electric current is passed through an aqueous solution of the following. Which one shall decompose? — $AgNO_3$

- Stronger is the oxidizing agent greater is the: — standard reduction potential
- The relative lowering of vapour pressure is directly proportional to molality if the solution is: — dilute
- If a physical and chemical change takes place at a constant pressure then the heat change during the process is called: — Enthalpy change
- On the electrolysis of aqueous solution of sodium sulphate, on cathode we get: — H_2
- Nitrates of which pair gives different products on thermal decomposition? — Li Na
- Which is carnalite? — KCI
- Isomorphic substances have: — Different physical and chemical properties
- The pressure during the molar heat of fusion is kept: — 1 atmosphere
- Conductivity of a solution is directly proportional to: — Number of ions
- Under a given set of experimental conditions, with increase in the concentration of the reactants the rate of a chemical reaction: — increases
- During the electrolysis of an electrolyte, the number of ions produced, is directly proportional to the: — Quantity of electricity passed
- Electrolytic conduction differs from metallic conduction in that in the case of electrolytic conduction. Which of the following statements is/are correct? — The resistance decreases with increasing temperature
- The rate at which a substance reacts depends on its: — Active Mass
- The addition of a polar solvent to a solid electrolyte results in: — Ionization
- Electrolysis involves oxidation and reduction respectively at: — Anode and Cathode
- On electrolyzing a solution of dilute H2SO4 between platinum electrodes, the gas evolved at the anode is: — O_2
- 36 g water and 828 g ethyl alcohol form an ideal solution. The mole fraction of water in it, is: — 0.1
- A molal solution is one that contains one mole of a solute in: — 1000 gm of the solvent
- The most reactive allotropic form of phosphorus is: — White
- Chemical composition of cinnabar is: — HgS
- Which molecule has the highest bond energy among the halogens? — Chlorine
- When chlorine is passed through hot solution of caustic soda the reaction is said as: — Disproportionation reaction
- The most paramagnetic element is: — Iron
- Diameter of an atom is in the order of: — 0.2 nm
- Mass spectrometer is used to determine Mass number of isotopes and: — Relative abundance
- Molecular ions are formed by passing: — High energy electron beam and X-Rays
- Empirical formula of chloroform is: — CHC_{13}
- Which one of the following looks odd? — H_2S
- A great variety of the organic compounds is due to its property of carbon: — Exhibit catenation
- The amount of heat absorbed when one mole of a liquid is changed into gas at its boiling point is: — Molar heat of vaporization
- Pure water does not cond... — Is almost totally unionized
- In aqueous solution, strong electrolytes: — Ionize almost completely
- Vinyl acetylene combines with hydrochloric acid produces: — Chloroprene
- Molecular mass of water (18g) means: — 1-mole molecules of water
- 0.36 moles of each aluminium and oxygen react with each other to produce aluminium oxide. The amount of product formed is: — 0.18 mole
- When 1 coulomb of charge is passed through electrolyte solution, then the mass deposited is equal to: — Electrochemical equivalent
- In electrolysis of a fused salt, the weight of the deposit on an electrode will not depend on: — Temperature of the bath
- Electrolysis of molten anhydrous calcium chloride produces: — Calcium
- Strong electrolytes are those which: — Completely dissociate into ions at all dilutions
- Which of the following is not a non electrolyte? — Acetic Acid
- One mole of CO_2 contains: — 6.022×10^{23} atoms of carbon
- The number of isotopes of elements with even mass number and even atomic number are: — 154
- Size of molecule depends upon: — Shape of molecule and atomicity
- The number of moles of CO2 which contains 16 g of oxygen is: — 0.5
- How many isotopes have odd atomic number? — 86
- Percentage of calcium in calcium carbonate is: — 40%
- When benzene is heated in air with V_2O_5 at 450°C yields: — Maleic anhydride
- Combustion analysis is performed to determine: — Empirical formula
- When toluene reacts with chlorine in sunlight the first major product is: — Benzyl chloride
- When CO_2 is made to react with ethyl magnesium iodide in dry ether followed by acid hydrolysis yields: — Propanoic acid
- The process of fermentation involves all the enzymes except: — Sucrase
- Ethyl chloride on reduction in the presence of Zn/HCI produces: — Ethane
- Which one does not exhibit aldol condensation? — Benzaldehyde
- The common name of propane -1 3-dioic acid is: — Malonic acid
- Industrial materials thermal power stations are coated with: — Epoxy paints
- Chlorination of water may be harmful if the water contains: — Carbon dioxide
- What is the relative rate of effusion of CO and CO_2? — CO is 1.25 times faster than CO_2
- The weakest (in strength) of the following intermolecular forces is: — Vander Waals force
- Ideal gasses have all the following characteristics except: — The molecules occupy no space

— different number of neutrons

- The nucleus of an atom of every element will always contain: — Protons
- The properties of an element mostly corresponds to that isotope which has greater: — relative abundance
- Isotopes differ in: — properties which depend upon mass
- Under what conditions the gases deviate from the ideal behavior? — Low temperature and High pressure
- The introduction of Kelvin scale in thermometry is according to: — Charles law
- 0.5 mole of nitrogen gas and 0.5 mole of carbon monoxide gas at STP have same: — Mass and Atoms
- At constant temperature the pressure of an ideal gas is doubled its density becomes: — Double
- The diffusion of gases at absolute zero will be: — Zero
- Critical temperature for different gases is different and depends upon: — Size of molecule, Shape of molecule and Intermolecular attractions
- What is the simplest form of matter? — Gas
- What is the abundant form of matter on earth? — Solid
- Which state of matter has the lowest density? — Gas
- What do we call to sudden expansion of plasma? — Joule Thompson effect
- One mole of an ideal gas at 546.5 K under 2 atm pressure has a volume of: — 22.414 dm^3
- The solid particles only possess: — Vibrational motion
- If 1/V is plotted on X-axis and pressure on Y-axis at constant temperature what should appear: — Straight line
- The partial pressure exerted by the water vapours is called: — Aqueous tension
- The spreading of fragrance or scent in air is due to: — Diffusion
- The kinetic molecular theory of gases was put forward in 1738 by: — Bernoulli
- The highest temperature at which a substance can exist as a liquid is called its: — Critical temperature
- What will be the pressure of 1 mole of an ideal gas maintained at 300 K and 250cm^3 volume? — 98.5 atm
- The processes of effusion and diffusion are best understand by: — Graham's law
- Who made volume and pressure correction to explain deviation of gases from ideal behaviour? — Vander Waal
- The non-ideal behaviour results chiefly from: — Intermolecular attractions and finite volume
- The gases become non-ideal at: — Low temperature and high pressure
- Lind's method is employed for: — Liquefaction of gases
- The relative attraction of the nucleus for the electrons in a chemical bond is called: — Electro negativity
- Which type of bond is formed by overlap of p orbitals? — Pi and Sigma
- The octet rule does not always hold for which of the following elements? — P
- Shielding effect across the period: — Constant
- In O_2 each oxygen atom is hybridized: — sp^2
- Molecular orbitals are filled according to: — Auf bau principle, Hunds rule and Paulis Exclusion principle
- Measurement of the degree of polarity is: — Dipole moment
- A specie with maximum number of unpaired electrons: — NH-2
- Force responsible to hold atoms together in a compound is called: — Bond
- Energy of atom in compound is: — Lesser than individual
- An atom loses or gains electrons to: — Gain stability, Form a bond and complete its outermost shell
- Energy required to remove electron from an atom: — Ionization potential
- Ionization energy in a period generally: — Increases
- Greater shielding effect corresponds to ionization energy value: — Lesser
- Elements having high I.P values are: — Non metals
- Energy released or absorbed when electrons are added in atom is: — Electron affinity
- In a period electronegativity from left to right: — increases
- Ionic bond is produced after complete transfer of: — Electrons
- Bond will be ionic when E.N difference of bonded atom is: — Greater than 1.7
- Mostly ionic compound are produced in between elements of: — IA, IIA and VIIA
- The Lewis acids are: — Electron deficient
- Sharing of 1 electron pair by one specie forms: — Coordinate covalent bond
- Angle in water molecule is: — 104.5^0
- The geometry of ammonia is: — Trigonal Pyramidal
- Orbitals of same energy produced after mixing of orbitals of different energy are called: — Degenerate orbitals
- The relationship between energy of a photon of light and its frequency is given by: — Planck's Quantum Theory
- Splitting of spectral lines when atom is subjected to magnetic field is called: — Zeemans Effect
- The number of fundamental particles in an atom of the lightest isotope carbon are: — 18
- Increase in atomic number is observed during: — Beta emission
- Free neutron changes into proton with the emission of: — Neutrino and Electron
- Rutherford bombarded _____ particles in discovery of nucleus. — Alpha Rays
- Atomic orbits having same energy are called: — Degenerate orbitals
- When electrons collide with heavy metals than ____ are produced. — X-Rays
- Atom with higher atomic number produces X-rays of: — shorter wavelength
- The atomic number of an element having maximum number of unpaired electrons in p-subshell is: — 7
- When an atom absorbs energy the lines in the spectrum will appear which are: — Darker
- Colour of fluorescene produced by cathode rays depends upon: — composition of glass
- Positive rays are produced: — By the bombardment of cathode rays on gas molecules

- Geometry of simple molecule having sp3 hybrid orbital is: — Tetrahedral
- Space around nucleus where finding probability of electrons is maximum is called: — orbital
- Geometry of molecule will be pyramidal if the outer post shell of the central atom has: — 3 bond pair one lone pair
- According to VESPR Model the geometry of molecule having 5 bond pair in outer most shell will be: — Trigonal bi-pyramidal
- Molecular orbital which have higher energy than atomic orbitals is called: — Anti-bonding molecular orbital
- Unpaired electron in a molecule gives _____ character. — Paramagnetic
- Unit of dipole moment is: — Debye
- Which of the following can expel proteons from paraffins? — Neutron
- Centrifugal forces are balanced in atom by: — attractive forces
- Spectrum is produced due to: — different wavelength
- Splitting of spectral lines when atoms are subjected to strong electric filed is called: — Stark effect
- The rate of reaction: — Decreases as the reaction proceeds
- The addition of a catalyst to the reaction system: — Increases the rate of forward as well as backward reaction equally
- The specific rate constant of a first order reaction depends on the: — Temperature
- On increasing the temperature the rate of reaction increases mainly because: — Collision frequency increases
- The value of activation energy is primarily determined by: — Effective collision
- Sum of exponents of molar concentration is called: — Order of reaction
- Unit of rate of reaction is: — Moles dm^{-3} sec^{-1}
- Rate of reaction when concentration of reactants are taken as unity is called: — Specific rate constant
- Radiations are absorbed in: — Spectrophotometer method
- Energy of reactant higher than energy of product favours: — Exothermic
- Neutralization reactions and Ionic reactions have very high rate of reaction because of: — Double decomposition reaction
- The substances that reduces the effectiveness of a catalyst are called: — Poisoning catalysts
- An enzyme has its specificity due to: — structure
- A substance which increases the reactivity of enzyme is called: — promoters
- When the reaction completes in more than one steps rate of reaction will be determined by: — slowest step
- Energy of activation for backward reaction is less than forward reaction for _____ reaction. — Endothermic
- When NaCl is dissolved in water the sodium ion becomes: — hydrated
- The oxidation number of nitrogen in NO3- is: — +5
- To prevent rancidification of food material, what is added? — Anti-oxidant
- Which of these substances is a good [illegible]
- When H_2S reacts with halogens, the halogens are: — reduced
- What is used as an oxidant, a reductant and an acid? — H_2O_2
- Strongest reducing agent is: — K
- Several blocks of magnesium are fixed to the bottom of a ship to: — Prevent action of water and salt
- Prevention of corrosion of iron by zinc coating is called: — Galvanization
- The oxidation number of C in CO_2 is: — +4
- In the course of a chemical reaction an oxidant: — gains electrons
- What happens when a sulphur atom becomes a sulphide ion? — It gains 2 electrons
- The atomic number of an element which shows the oxidation state of + 3 is: — 13
- An example for a strong electrolyte is: — Sodium acetate
- Theory of ionization was given by: — Arrhenius
- An example of a Lewis acid is: — $AlCl_3$
- Ammonium hydroxide is a: — Weak electrolyte
- Ionization depends upon: — dilution
- The colour of an electrolyte solution depends on: — The nature of both the ions
- The suitable indicator for strong acid and weak base is: — Methyl Orange
- The best conductor of electricity is a 1.0 M solution of: — Sulphuric acid
- In weak electrolytic solution, degree of ionization: — Will be proportional to the square root of dilution
- A solution of $FeCl_3$ in water acts as acidic due to: — Hydrolysis of Fe^{3+}
- According to which law, the degree of ionization is directly proportional to the dilution? — Ostwald's dilution law
- Enthalpy of combustion for food fuel and other compounds can be measured accurately by: — Bom calorimeter
- The strength of an acid depends on its tendency to: — Donate protons
- Which of the following is non-electrolyte? — $C_{12}H_{22}O_{11}$
- NaOH is a strong base because: — It gives OH- ion
- The pH indicators are: — Either weak acids or weak bases
- An ionizing solvent has: — High value of dielectric constant
- The colour of an electrolyte solution depends on: — The nature of both the ions
- If internal energy of the system is increased: — Change in state of the system is increased
- _____ is the study about energy of a chemical system. — Thermochemistry
- The environment in which a system is studied is: — surrounding
- Anything which depends upon initial and final state of a system is: — state function
- At infinite dilution, the percentage ionization for both strong and weak electrolytes is: — 100%
- Reaction in which heat evolves is called: — Exothermic
- When enthalpy of reactants is higher than product then reaction will be: — Exothermic

ORGANIC CHEMISTRY

- Octane number can be improved by: — isomerization
- Alkanes containing a methyl group on main chain at 2nd carbon are called: — iso-alkane
- When one hydrogen atom of alkane is removed then it is called: — alkyl
- The rectified spirit contains: — 95% alcohol
- The basis on the mode of their formation, the polymers can be classified: — Both as addition and condensation polymers
- The irritation caused by red ants bite is due to: — Formic acid
- Which alcohol will undergo elimination reaction to give alkene in the presence of acidic potassium dichromate? — Tertiary alcohol
- Alkanes are also known as: — Paraffins
- When -COOH is attached directly to the benzene ring the acid is called: — aromatic
- The common name of propane 1 3-dioic is: — Malonic acid
- Sabatier Senderns reaction involve _____ in presence of Ni. — Aalkene & H_2
- Which C-X bond has the highest bond energy per mole? — C-F
- Which compound is also known by the name of carbolic acid? — C_6H_5OH
- Hydrogenolysis results in the formation of: — alkane
- Which alkyl halide has the highest reactivity for a particular alkyl group? — R-I
- Ethyl chloride with nascent hydrogen produces: — Ethane
- Heating phenol with Zn will yield: — Benzene
- Which acid is used in the manufacture of synthetic rubber? — Acetic acid
- The acid which is used as ink remover is: — Oxalic acid
- Clemmensens reduction infolves the reduction of: — Ketone
- The common thing in phthalic acid and oxalic acid is that both are: — Dicarboxylic
- The number of molecules taking part in the rate determining step is called: — Order of reaction
- Glyptals are chiefly employed in: — Surface coating
- Acidic amino acids have: — 2 carboxylic groups and 1 amino group
- Removal of CO_2 is called: — decarboxylation
- Ethanol can be converted into ethanoic acid by: — Oxidation
- The term internal salt refers to: — Dipolar character of amino acids
- Which alkyl halide out of the following may follow both SN1 and SN2 mechanism? — $(CH_3)_2$ CH - X
- Natural rubber is which type of polymer? — Addition polymer
- Soda lime is a mixture of: — CaO and NaOH
- Methyl alcohol is not used: — As a substitute for petrol
- When two moles of ethyl chloride react with two moles of sodium in the presence of ether what will be formed? — 1 mole of butane
- The ether used in Wurtz synthesis is: — dry
- Dehalogenation of ethyl tetrahalide will give: — Ethyne
- The organic acid that does not has COOH group is: — Carbolic acid
- When CO_2 is made to react with ethyl magnesium iodide followed by acid hydrolysis the product formed is: — propanoic acid
- R-Mg-Br is called: — Grignard reagent
- Upto ___ C atoms alkanes are gases. — 4
- Grignard reagent is reactive due to: — the polarity of C-Mg bond
- Teflon is a polymer of the monomer or Teflon is obtained by the polymerisation of: — Tetrafluoroethene
- Methanol can be obtained from: — water gas
- The test which is used for the identification of amino-acids is: — Ninhydrin test
- The starting material for the preparation of styrene is: — Ethyne
- Nylon is not a: — Homopolymer
- Polythene is: — Thermoplastic
- Nylon threads are made of: — Polyamide polymer
- An alcohol which can be prepared by fermentation is: — $CH_3 - CH_2 - OH$
- Incomplete oxidation of methane in the limited supply of air forms leads to: — CH_3OH
- The molecular weight of cellulose varies between: — 20000 to 500000
- Orlon is a polymer of: — Acrylonitrile
- Absolute alcohol is obtained when rectified spirit is treated with: — CaO
- Carboxylic acid reacts with ammonia to form ammonium salts which on heating produces: — Acidamide
- Celluloid is: — A thermoplastic material obtained from cellulose nitrate and camphor
- Introduction of nitro group in a molecule is called: — Nitration
- Polymerization of glycol with dicarboxylic acids is: — Condensation polymerization
- Nylon-66 is a: — Condensation polymer
- The complete reduction of carboxylic acid results in the formation of: — alkane
- Which polymer is formed by chloroethene? — PVC
- Triethyl aluminium titanium chloride used in plastic industry is a: — Ziegler-Natta catalyst
- Bakelites are: — Resins
- When alcohol reacts with phosphorous halides it gives: — Alkyl Halides
- Order of ease of halogenation in alkane is: — $F_2 > Cl_2 > Br_2 > I_2$
- Among the following a natural polymer is: — Cellulose
- Polymer used in bullet proof glass is: — PMMA
- Nylon polymers are: — Amphoteric
- Phenol was isolated by Runge from: — Coal tar
- The organic acid that can be made from ethanol is: — Acetic acid
- The gas used in manufacturing of urea fertilizer is: — CH_4
- The Zieglar-Natta catalysts are: — Stereospecific
- Melamine is a: — White crystalline solid
- Terylene is used for making: — Silk, Seat belts and fabrics

- Formalin is _____ % solution of formaldehyde in water. — 52%
- The formula of palmitic acid is: — $C_{15}H_{31}COOH$
- Glyptal is a: — Alkyd resin
- Ethers show functional group isomerism with: — alcohol
- Removal of halogen and hydrogen atom is: — dehydrohalogenation
- Formalin is _____ % solution of formaldehyde in water. — 40%
- The aliphatic monocarboxylic acids are obtained by the hydrolysis of: — fats and oils
- Which one of the following is a linear polymer? — Amylose
- Polymer formation from monomers starts by: — Coordinate reaction between monomers
- Monomers are converted to polymer by: — Condensation reaction between monomers
- The catalyst used in the manufacture of polyethene by Ziegler method is: — Titanium tetrachloride and trimethyl aluminium
- Alkenes are produced from dehalogenation of: — vicinal dihalo alkane
- Caprolactam is the monomer of: — Nyon-6
- The process of fermentation of starch involve many enzymes the sequence of enzymes used are: — Diastase-maltase-zymase
- The basic hydrolysis of ethyl acetate produces: — Ethanol and sodium acetate
- 'Starch' consists of two fractions; one is á-amylose and the other is: — Amylopectin
- In the natural rubber 'Caoutchouc' the isoprene units are joined by: — Head-to-tail
- What catalyst is employed when benzene is prepared from acetylene at 70° C? — Organo-nickel
- Carboxylic acid on reduction with HI / phosphorous yields: — alkane
- In benzene sulphonic acid the sulphonic group is attached with benzene ring through: — Sulphur
- The residue obtained after the crystallization of sugar from concentrated sugar cane juice is called: — molasses
- How many moles of H_2 are added up when benzene is heated with hydrogen in the presence of platinum? — 3
- The reaction of carboxylic acids with alcohols in presence of concentrated H_2SO_4 is called: — esterification
- The amino acid present in cheese is: — Tyrosine
- By which method the molecular mass of benzene was determined as 78.108? — Vapour density method
- Water gas heated at 450° C and 200 atm pressure in the presence of $ZnO+Cr_2O_3$ will produce: — methanol
- Preparation of vegetable ghee involves: — hydrogenation
- Michael Faraday discovered benzene in the gas which was produced by destructive distillation of vegetable oil that is done in: — The absence of Oxygen
- Hydro carbons which burn with smoky flame are called: — aromatic
- Octane number 2 2 4-trimethyl pentane is: — 100
- Geometric isomerism is usually found in: — alkenes
- Pentane and 2-methyl butane have the same: — Percentage composition
- Organic compounds that are essentially non-polar and exhibit weak intermolecular forces have: — Low melting points
- The first organic compound was synthesized in laboratory by: — Wohler
- First organic compound synthesized in laboratory was: — Urea
- The property of carbon chain formation is called: — Catenation
- Chemical properties of first member of homologous series with respect to other members are: — same
- The organic compounds having very high molecular weight are called: — Polymers
- Compounds having same molecular formula but different in structural formula are called: — Isomer
- Organic compounds are soluble in: — Non-polar solvent
- Methane is used in power generation in chemical industries being a: — cheaper
- Crude oil is blackish coloured liquid produced after the decay of organic matter present between: — Sedimentary Rocks
- Which one of the following compounds shows intense knocking? — n-Heptane
- What can be used as anti-knocking agent? — $(C_2H_5)_4Pb$
- Ether functional group can be represented as: — R-O-R
- Isomerism which is present only in alkene is: — cis-trans isomerism
- A single atom or group of atoms which gives characteristic properties to a compound is called: — Functional Group
- Which is a Compound containing benzene ring in its structure? — Aromatic compound
- Which type of isomerism is shown by 2-propanol and 1-propanol? — position isomerism
- In sp3 hybridization the expected geometry of molecules will be: — Tetrahedral
- Only sigma bonds are present in: — ethoxy ethane
- In cyano group the carbon atom shows which kind of hybridization? — sp
- The structure of ethyne is: — linear
- The fractional distillation of petroleum produces gasoline up to: — 20%
- The general formula of cycloalkene is: — C_nH_{2n}
- Which is not heterocyclic compound? — Aniline
- What is the number of isomers in C_5H_{12}? — Three

INORGANIC CHEMISTRY

- Elements in the same vertical group of the periodic table have same: — Number of valence electrons
- Plaster of Paris hardens by: — Uniting with water
- The most electropositive amongst the alkaline earth metals is: — Barium
- Hydrogen does not combine with: — Helium
- Paramagnetism is exhibited by molecules: — Carrying unpaired electrons
- Transitional elements exhibit variable valencies because they release electrons from which of the following orbits? — (n - 1) d and ns orbits
- Stainless steel is an alloy of: — Nickel and chromium
- The property of the alkaline earth metals that increases with their atomic number is: — Solubility of their hydroxides
- In electrolysis of aluminium oxide which of the following is added to accelerate the process? — Cryolite
- As compared to lithium, sodium reacts quickly with water because: — it is stronger electropositive

synthesized in laboratory
— Wohler
d in laboratory was:
— Urea
ation is called:
— Catenation
er of homologous series
— same
y high molecular weight
— Polymers
r formula but different in
— Isomer
— Non-polar solvent
n in chemical industries
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enzene ring in its struc-
- Aromatic compound
2-propanol and 1-pro-
— position isomerism
metry of molecules will
— Tetrahedral
— ethoxy ethane
s which kind of hybrid-
— sp
— linear
n produces gasoline up
— 20%
— C_nH_{2n}
— Aniline
12? — Three

STRY

he periodic table have
of valence electrons
- Uniting with water
lkaline earth metals is:
— Barium
— Helium
les:
; unpaired electrons
alencies because they
wing orbits?
- 1) d and ns orbits
and chromium
ls that increases with
of their hydroxides
h of the following is
— Cryolite
quickly with water
ger electropositive

In the first transition series, the highest boiling point and melting point is of: — Cr
The H - O - H angle in water molecule is about: — 105°
Lanthanoids are:
— 14 elements in the sixth period (atomic no. = 58 to 71) that are filling 4f sublevel
Temporary hardness of water is due to the presence of:
— Magnesium bicarbonate
The composition of tritium is:
— 1 electron, 1 proton, 2 neutrons
An element having low value of ionization energy and low value of electron affinity is likely to belong to: — Group IA
Sodium thiosulphate is used in photography:
— To convert metallic silver into silver salt
One of the important use of ferrous sulphate is in the:
— Manufacture of blue black ink
Among halogens the highest boiling point is of: — Iodine
Hydrogen acts as a reducing agent and thus resembles:
— alkali metals
Of the metals Be, Mg, Ca and Sr of group II A. In the periodic table the least ionic chloride would be formed by: — Be
Tritium undergoes radioactive decay giving: — â-particles
Hydrogen cannot reduce: — Hot Al_2O_3
The purification of alumina is called : — Baeyer's process
The reagent commonly used to determine hardness of water titrimetrically is: — Disodium salt of EDTA
The elements of group IA provide a colour to the flame of Bunsen burner due to: — Low ionization potential
When washing soda is heated:
— Water vapour is released
The most dangerous method of preparing hydrogen would be by the action of HCl and: — K
Valency electrons in alkali metals are: — 1
Transition metals are often paramagnetic owing to:
— The presence of one or more unpaired electrons in the system
Zinc and mercury do not show variable valency like d-block elements because: — Their d- shells are complete
In first transition series, the melting point of Mn is low because: — of weak metallic bonds
The tendency towards complex formation is maximum in:
— d - block elements
Elements which generally exhibit multiple oxidation states and whose ions are usually coloured are:
— Transition elements
Periodic table provides a basic framework to study elements with respect to their:
— Physical properties, chemical properties and properties of their compounds
Concept of Triads was introduced by: — Dobereiner
In modern periodic table all the elements are arranged in ascending order of: — atomic number
The longest period in the modern periodic table is:
— 6th period
Variable valency is shown by: — Transition elements
Seventh period contains ____ normal elements. — 2
Modern periodic table has been divided in how many blocks?
— 4 blocks
Non-metals usually form:
— acidic oxides

- Amphoteric oxides are those which possess ___ properties.
— acidic and basic
- Hydrogen resembles with carbon because of having remarkable:
— reducing properties
- Heavy water is used in atomic reactor as:
— Both moderator and coolant
- The atomic radii decreases by increasing atomic number in:
— Elements from Li to Ne
- Which discovery caused a revision in the periodic law as stated by Mendeleev? — Atomic number by Moseley
- An element has electronic configuration 1s2 2s2 2p2. It belongs to: — Group IV-A
- The property which increases up to group IV-A then decreases onwards: — Melting & boiling points
- The transitional metal which form green compound in +3 oxidation state and yellow orange compound in +6 oxidation state is: — Cr
- The atoms of same element having same atomic number but different mass number are called: — Isotopes
- Deuterium reacts with oxygen to form: — Heavy water
- Ionization energy depends upon:
— I.E depends upon all of the above and nature of orbital
- Shielding effect across the period: — Remains constant
- The ionic compound BaSO4 is insoluble in water due to:
— High lattice energy
- Beryllium differs from rest of the members of its family (Group-IIA) in many ways. The reason for this is its:
— Small size and higher electronegativity
- Based on lattice energy and other considerations which one of the following alkali metal chlorides is expected to have the highest melting point? — NaCl
- The hardest substance amongst the following is: — B_4C
- Which of the following gives propyne on hydrolysis?
— Magnesium carbide (Mg_2C_3)
- When two ice cubes are pressed over each other, they unite to form one cube. Which force is responsible to hold them together? — Hydrogen bond formation
- In a reaction the ferrous Fe++ iron is oxidised to ferric Fe+++ ion. The equivalent weight of the ion in the above reaction is equal to: — the atomic weight
- Mercury is the only metal which is liquid at 0° C This is due to its: — Very high ionisation energy and weak metallic bond
- Addition of 2nd electron to a un-negative ion is always:
— Endothermic
- Higher value of electron affinity means:
— Atom will gain electron easily
- Metallic characters of alkali metals:
— Increase down the group
- Pure hydrogen is obtained by carrying electrolysis of:
— $Ba(OH)_2$ solution
- Mercury is transported in metal containers made of:
— Iron
- The liquid field metal expanding on solidification is:
— Ga
- When electric current is passed through an ionic hydride in the molten state?
— Hydrogen is liberated at the anode

- Melting points of VII-A group elements down the group: — Increase
- Oxidation state of an atom represents: — Apparent charge in compound
- Halides in which halogen atoms act as a bridge between two atoms of the other element are called: — Polymeric halides
- Pure water can be obtained from sea water by: — Reverse osmosis
- Ordinary hydrogen at room temperature is a mixture of: — 75% of o-Hydrogen + 25% of p-Hydrogen
- The halogen having highest electron affinity is: — Chlorine
- Less electronegative elements such as Be Ga A etc form: — Polymeric halide
- Iodine is solid due to: — High polarizability
- The metal ion which does not form coloured compound is: — Zinc
- The permanent hardness of water can be removed, by adding: — Washing soda
- Stainless steel does not rust because: — Chromium forms an oxide layer and protects iron from rusting
- Heavy water freezes at: — 3.8°C
- Triatomic hydrogen is called: — Hyzone
- Hydrogen combines with other elements by: — Losing, gaining or sharing electron
- True increasing order of acidity of the oxides of Mn is: — $MnO < MnO_2 < Mn2O_7$
- Among the halogens the rare element is: — Astatine
- Electrolysis of fused sodium hydride liberate hydrogen at the: — Anode
- Bromine can be liberated from KBr solution by the action of: — Chlorine
- The colour of chlorine gas is: — greenish yellow
- The most powerful oxidizing agent among the halogens is: — F_2
- Hydrogen burns in air with a: — Light bluish flame
- Heavy water D_2O is: — Water obtained by repeated distillation and condensation
- Bleaching powder is an example of: — Mixed salt
- Triple point of water is: — 273 K
- Deuterium differs from hydrogen in: — Physical properties
- The velocity of neutrons in nuclear reactor is slowed down by: — Heavy water D_2O
- Hydrogen can be fused to form helium at: — High temperature and high pressure
- The halogen which reacts spontaneously with gold (Au) to form Au+3 is: — Cl_2
- The halogen which reacts very slowly with halogen is: — Iodine
- Substance which is found in dried up lakes of Tibet and California is: — Tincal
- Bleaching powder is not used for bleaching: — costly fabrics
- Borax is a white crystalline solid and it is: — more soluble in hot water
- Which pair does not show hydrogen isotopes? — Ortho hydrogen and para hydrogen
- Photographic plates are coated with a thin [illegible] — $AgBr$
- Special features of borate glass is that it is: — heat resistant
- Cassiterite is concentrated by: — Electromagnetic separation
- A substance which reacts with gangue to form fusible material is called: — Flux
- In blast furnace iron oxide is reduced by: — CO
- Main ore of aluminium is: — Bauxite
- The metal which is used in thermite process because of its activity is: — aluminium
- Purpose of smelting of an ore is: — To reduce it
- Compounds of nitrogen and phosphorus are mostly: — covalent
- The most electronegative element among the following is: — N
- SO_3 is not absorbed in water directly because: — Reaction is exothermic
- Phosphine gas will be produced if phosphorous acid is subjected to: — Reduction and Decomposition
- Metallurgy is the process of: — Extracting the metal from the ore
- Froth floatation process for the concentration of ores is an illustration of the practical application of: — Adsorption
- Azo-dyes are prepared from: — Aniline
- $C_3H_9N_1$ represents: — Amine
- Aluminium oxide is: — Amphoteric oxide
- Which electronic configuration corresponds to an element of group IIIA? — $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^1$
- Tincal is a mineral of: — B
- Phosphorus is a Greek word and it means: — Light bearing
- Aniline is usually purified by: — Steam distillation
- Allotropic form of phosphorus that is poisonous is: — White
- In network of silica (SiO_2) each silicon atom is surrounded by ____ atoms of oxygen. — 4
- The process of aluminium extraction is called: — Hall process
- KCN reacts readily to give a cyanide with: — Ethyl bromide
- The Hinsberg's method is used for: — Separation of amine mixtures
- When aniline is treated with sodium nitrite and hydrochloric acid at 0 degree C, it gives: — Diazonium salt
- Acetic anhydride can be obtained by treating ethyl alcohol with: — P_2O_5 and H_2SO_4
- Phosphorous acid upon thermal decomposition yields phosphoric acid and: — Phosphine
- The element of group VIA which is a non-metal is: — S
- Phosphoric acid is a weak acid and its basicity is: — 3
- All the elements in group VIA are ____ in nature. — Polymeric
- Which allotropic form of phosphorous is the most stable? — Black

- it forms
- The chemical c
- Oxygen and su
- Oxygen does n
- CO_2 is gas whi
- CO_2 is an inde
- Arsenic oxides
- In which comp
- When sulphur behaves like:
- The coloured formation of:
- Boron is non-m
- Boron in soil h
- er growth of p
- Boric acid can
- In photograph
- Lanthanides a

ENVI

- Requirement
- Three element
- Hypochlorous with the disso
- The yellow co of:
- Incineration o ture range of:
- Which gas is
- In the purifica
- Newspaper ca
- The main poll — Chromium
- A single chlo molecules?
- Which substa
- Chlorination
- The percenta removed by
- Ozone hole i during:
- The main pro
- Pollut

Boron is non metal while other elements of IIIA group are metals. This is because:
it forms molecular addition compounds; and it has small size

The chemical composition of cinnabar is: — HgS

Oxygen and sulphur resemble in all except:
— Show same oxidation state

Oxygen does not react with all except: — Metals

CO_2 is gas while SiO_2 is solid at room temperature. Why?
CO_2 is an independent molecule while SiO_2 has network covalent structure

Arsenic oxides are removed by passing through:
— Ferric hydroxide

In which compound nitrogen has maximum oxidation state?
— HNO_3

When sulphuric acid is treated with ethanol sulphuric acid behaves like: — a dehydrating agent

The coloured glassy mass in borax bead test is due to the formation of: — metal meta borate

Boron is non-metal whereas A1 is metal. It is due to:
— small size and high nuclear charge

Boron in soil has been considered micronutrient for:— proper growth of plants

Boric acid cannot be used: — in soda bottles

In photography sodium thiosulphate is used as:
— complexing agent

Lanthanides and actinides resemble in: — oxidation state

ENVIRONMENTAL CHEMISTRY

Requirement of macronutrient per acre of the land is:
— 5 to 200 kg

Three elements needed for the healthy growth of plants are:
— NPK

Hypochlorous acid is used for disinfecting the water it reacts with the dissolved ammonia producing:
— NH_2Cl, $NHCl_2$, NCl_2

The yellow colour in photochemical smog is due to presence of: — Nitrogen dioxide

Incineration of municipal waste is carried out in the temperature range of: — 900^0-1000^0 C

Which gas is the main cause of acid rain? — NO_2

In the purification of portable water the coagulant used is:
— Alum

Newspaper can be recycled again and again how many times?
— 5 times

The main pollutant of leather tanneries in the waste water is:
— Chromium IV

A single chlorine free radical can destroy how many ozone molecules? — 100000

Which substance can be used for disinfecting water?
— $KMnO_4$

Chlorination of water may be harmful if the water contains:
— Ammonia

The percentage of suspended solid waste in raw water is removed by coagulation is: — 80

Ozone hole is substantial depletion of ozone in every year during: — September-November

The main product of bacterial action is: — NO

Pollutants have adverse effect over: — Ecosystem

MISCELLANEOUS

- The nucleus of an atom consists of:
— Protons and Neutrons
- The most electronegative element among the following is:
— Fluorine
- The metal used to recover copper from a solution of copper sulphate is: — Fe
- The number of d-electrons in Fe^{2+} (Z = 26) is not equal to that of: — p-electrons in CI (Z = 17)
- The metallurgical process in which a metal is obtained in a fused state is called: — Smelting
- The law which states that the amount of gas dissolved in a liquid is proportional to its partial pressure is:
— Henry's Law
- The main buffer system of the human blood is:
— H_2CO_3 - HCO_3
- The gas present in the stratosphere which filters out some of the sun's ultraviolet light and provides an effective shield against radiation damage to living things is: — Ozone
- The most commonly used bleaching agent is: — Chlorine
- The nucleus of a hydrogen atom consists of:
— 1 proton only
- The heat required to raise the temperature of body by 1 K is called: — Thermal capacity
- The nuclear particles which are assumed to hold the nucleons together are: — Mesons
- The mass of P_4O_{10} that will be obtained from the reaction of 1.33 gram of P_4 and 5.07 of oxygen is: — 3.05 gram
- The octane number of zero is assigned to: — n-Heptane
- The metal that is used as a catalyst in the hydrogenation of oils is: — Ni
- The most abundant rare gas in the atmosphere is: — Ar
- The Latin word 'formica' means ant. The name formic acid is derived from this Latin word because:
— this acid was first obtained by the distillation of ants
- The ore which is found in abundance in India is:
— Monazite
- The heat energy produced when the human body metabolizes 1 gram of fat is: — 39 KJ
- What are the number of moles of CO_2 which contains 16 g of oxygen? — 0.5 mole
- The main use of salt in the diet is to:
— produce in small amounts the hydrochloric acid required for the digestion of food
- The luster of a metal is due to:
— presence of free electrons
- The number of water molecules present in a drop of water (volume 0.0018 ml) at room temperature is:
— 6.023×10^{19}
- The most malleable metal is: — Gold
- The oil used in the froth floatation process is: — Pine Oil
- The mass of one Avogadro number of helium atom is:
— 4.00 gram
- The items amenable to detection by soft x-rays are:
— genuine coins from counterfeit coins
- The material which can be deformed permanently by heat and pressure is called a: — Thermoset

- The mass number of a nucleus is: — the sum of the number of protons and neutrons present in the nucleus
- The inexpensive and commonly used variety of glass is called soda glass. It is called so because: — is made using soda (sodium carbonate)
- The gas used in the manufacture of Vanaspati from vegetable oil is: — Hydrogen
- The graphite rods in the nuclear reactor: — convert fast moving neutrons into thermal neutrons
- The first metal used by man was: — Copper
- The hydronium ion is: — H_3O^+
- The most electropositive elements among the following is: — Cs
- The method that cannot be used for removing permanent hardness of water is: — Boiling
- Zone refining is used for the purification of: — Ge
- Metal are good conductors, because: — they contain free electrons
- Tear gas is: — Carbonyl Chloride
- A polymeric substance used to make parachute is: — Viscose
- Drinking soda is: — Acidic
- The cathode of a lead storage battery is made up of: — Lead
- Heat resistant variety of glass is: — Flint Glass
- Pasteurization of milk means: — Heating of milk to above 62^0 C
- Type metal used in printing press is an alloy of: — lead and antimony
- Sour taste of Coca Cola is due to the presence of: — Phosphoric acid
- Bhopal gas tragedy is associated with leakage of: — Methyl Isocyanate
- Iodized salt is beneficial for: — Thyroid function
- The acid rain destroys vegetations because it contains: — Sulphuric acid
- Diamonds are glittering and attractive because light incident on them undergoes: — multiple internal reflections
- The substance most commonly used as a food preservative is: — Sodium salt of benzoic acid
- The acid used in lead storage cells is: — Sulphuric acid
- Alum stops bleeding in minor cuts because of: — Coagulation
- Plaster of Paris is made by partial dehydration of: — Gypsum salt
- Water can be separated from alcohol water mixture by: — Distillation
- Hydrogen is not found in atmosphere because: — It is the lightest gas
- A substance which readily forms colloidal solution in contact with water is called: — Hydrophilic acid
- When formaldehyde and potassium hydroxide are heated, we get: — Methyl alcohol
- When conc H_2S0_4 is added to dry $KN0_3$, brown fumes are evolved. These fumes are due to: — NO_2
- The luster of the metals is because of: — reflection of light due to the presence of free electrons
- The major harmful gas emitted by automobile vehicles which causes air pollution is: — Carbon Monoxide
- Pasteurization is the process in which milk is heated to: — 63^0 C for 20 minutes
- The freezer in a refrigerator is fitted near the top because: — it facilitates convection currents
- The most abundant inert gas in the atmosphere is: — Argon
- Percentage of lead in lead pencils is: — 0
- Water is not effective in extinguishing a fire caused by petrol because: — water and petrol are immiscible with each other and petrol which forms the upper layer continues to burn
- Helium gas is used in gas balloons instead of hydrogen gas because it is: — Non-combustible
- The gas used in the artificial ripening of fruits is: — Acetylene
- Ruby and Sapphire are oxides of: — Aluminium
- Gunpowder consists of a mixture of: — Niter, Sulphur and Charcoal
- In nuclear reactors, graphite is used as a/an: — Moderator
- The compound to which H_2 does not add is: — Tetra phenyl ethylene
- Ammonal is a mixture of: — aluminium powder and ammonium nitrate
- Which gas does not form the part of atmosphere? — Chlorine
- The fuel used in an atomic reactor is: — Uranium
- The major constituent of Gobar gas is: — Methane
- The residue left after extracting juice from sugarbeet and sugarcane is called: — Bagasse
- The isotope of Uranium used in atomic reactors is: — U^{235}
- The greenhouse effect is caused by the higher level of which gas in the atmosphere? — Carbon dioxide
- Ethanol containing 5% water is known as: — Rectified spirit
- The amount of chlorine available in water after disinfection is called as: — Residual chlorine
- What are the major pollutants of Cigarette smoke? — Carbon monoxide and Nicotine
- Nuclear energy is a mineral-based energy source. It is derived from: — Uranium, thorium and Plutonium
- Zinc sulphide is commonly used as: — Rodenticide
- Aspirin is chemically known as: — Acetylsalicylic acid
- The most abundant element in the human body is: — Oxygen
- Wax used for making candle is chemically a mixture of: — Aliphatic hydrocarbons
- Litmus is obtained from: — lichen
- Vinegar made by fermentation from cane sugar contains: — Acetic acid
- Photo-oxidation process is initiated by: — Light
- Ultraviolet radiation striking the earth is due to the depletion of: — Ozone
- Major gaseous pollutant of the thermal power station is: — SO_2
- The process of removing calcium and magnesium from hard water is known as: — Water softening
- The tip of the match-stick contains: — Red phosphorus
- Commercially, sodium bicarbonate is known as: — Baking soda
- An emulsifier is an agent which: — stabilizes as emulsion

- Mortar is a mixture of water, sand and: — Slaked lime
- The National Chemical Laboratory (India) is located in: — Pune
- One of the constituents of tear gas is: — Chloropicrin
- An atomic clock is based on transitions in: — Caesium
- Silver halides are used in photographic plates because they are: — reduced by light
- Tetra ethyle lead (TEL) is: — An antiknock compound
- The material used in the manufacture of lead pencil is: — Graphite
- If all bullets could not be removed from gunshot injury of a man, it may cause poisoning by: — Lead
- German silver, an alloy, does not contain the metal: — Silver
- Oxygen which is vital for life is a product of photosynthesis and comes from: — Carbon dioxide
- The noble gas used in radiotherapy is: — Radon
- Steel contains: — 0.1 to 2 % carbon
- The chemical(s) most commonly used for cloud seeding or 'artificial rainmaking' is/are: — Silver Iodide
- White phosphorus is always kept under: — Water
- Galena is a mineral of: — Lead
- Magnalium is an alloy of: — Aluminium and Magnesium
- Dry powder fire extinguishers contain: — Sand and Sodium bicarbonate
- Which type of glass is used for making glass reinforced plastic? — Fibre Glass
- Two elements which are used to absorb neutrons to control the chain reaction during nuclear fission are: — Boron and Cadmium
- The most commonly used chemicals in the artificial rainmaking or cloud seeding are: — Silver Iodide
- Hydrogen bomb is based on the principle of: — Uncontrolled fusion reaction
- Supersonic jet causes pollution by thinning of: — O_3 layer
- Which of the following metals causes Itai-Itai disease? — Cadmium
- Glycol is added to aviation gasoline because it: — prevents freezing of petrol
- Which one of the following minerals is found in Monazite sand? — Thorium
- Now a days, yellow lamps are frequently used as street lights. Which gas is used in these lamps? — Sodium
- The addition of gypsum to Portland cement helps in: — preventing rapid setting of cement
- The constituents of automobile exhaust that can cause cancer is/are: — Lead
- Hard steel contains: — 0.5 to 1.5 % Carbon
- Cement is formed by strongly heating a mixture of: — Limestone and clay
- The temperature of oxyacetylene flame is around: — 3200° C
- The Refrigerant 'FREON' is: — Difluoro Dichloro Methane
- Raw materials used for the manufacture of glass are: — Sand, soda and limestone
- The BOD values of water indicate the: — amount of oxygen used for biochemical oxidation
- Bleaching powder is used in drinking water as a/an: — Disinfectant
- The iron ore which contains 72% of iron is: — Magnetite
- The atmospheric gas that is mainly responsible Green House effect: — Carbon dioxide
- Electric bulbs are filled with: — Argon
- The purest form of Iron is: — Wrought Iron
- Non-stick kitchenware are coated with: — Teflon
- Sea weeds are important source of: — Iodine
- The fiber least prone to catch fire is: — Cotton
- The common name for the compound having format NaOH is: — Caustic Soda
- Bone ash contains: — Calcium phosphate
- Slag is a name given for: — molten alumina
- An example of replenishable energy source is: — Biomass
- Tar roads get damaged if there is: — Stagnation of water on road
- The drug 'Marijuana' is a: — Sedative
- The material known in commerce as Terylene is a: — Synthetic fibre
- The chemical used in embalming biological materials is: — Formaldehyde in water
- Sodium bicarbonate is commercially known as: — Baking Soda
- Coal is formed from: — compressed and hardened biomass
- Commercial Vaseline is derived from: — Petroleum
- Colour imparted to the Bunsen flame by strontium salt is: — Crimson Red
- A potato tuber has been cut into two halves. A few drops of iodine solution are placed on the cut surface of one of the halves. What colour change will be noticed? — From brown to blue-black
- Tear gas used by the police to disperse the mob contains: — Chlorine
- Epsom salt is used: — in making tooth paste
- The chemical name of rat poison is: — Zinc Phosphide
- The gas which is mainly responsible for the green house effect is: — Carbon dioxide
- Domestic Cooking gas consists mostly of: — Liquefied butane and isobutene
- Quick Silver is chemically known as: — Mercury
- Extensively used nitrogenous fertilizer is: — Urea
- Which particle moves around the nucleus of an atom and are negatively charged? — Electrons
- Hardest allotrope of carbon is: — Diamond
- Name the particle that is most essential to continue the chain reaction during the fission of uranium. — Neutron
- Conversion of chemical energy into electrical energy occurs in: — A battery
- The fuel that is used in modern submarines is: — Nuclear Fuel
- The basic chemical building block of natural rubber obtained from trees is: — Isoprene
- The name of plastic polymer from which combs, toys, bowls, etc., can be made is: — Polystyrene
- Which metal does not undergo corrosion due to the formation of oxide layer? — Aluminium
- Molasses, a by-product in the manufacture of sugar, is converted into: — Alcohol
- Silver nitrate solution is kept in brown bottles in laboratory because: — Brown bottles stop the passage of light through it

- Gelatin is mostly used in making ice-creams in order to: — Stabilize the colloid and prevent crystallization
- Two elements which can form a large number of compounds are: — Carbon and Hydrogen
- An inert gas mixed with oxygen given to patients suffering from restricted breathing is: — Helium
- The fungus which is used in the alcohol industry is: — Yeast
- Gold dissolves in: — Aqua-regia
- Which halide is used in making sensitive emulsion on photographic film? — Silver Bromide
- The material used in solar cells contains: — Silicon
- When lime juice is dropped on baking soda, brisk effervescence takes place because the gas evolved is: — Carbon dioxide
- In the electroplating of gold, the electrolyte used is: — Gold Sulphate
- The acid present in red ants is: — Formic acid
- The metal extracted from Bauxite is: — Aluminium
- pH value between 6.5-7.5 makes the soil: — Basic
- The wire of flash bulb is made of: — Magnesium
- The coloured discharge tubes for advertisement mainly contains: — Neon
- Muscle fatigue is caused by the accumulation of: — Lactic acid
- When quick lime is added to water: — heat is liberated
- The number of neutrons present in an element having mass number 226 and atomic number 88 is: — 138
- The natural resource, known as black gold, is: — Coal
- This group of alumino-silicate minerals is widely used in making electric insulators. Which is it? — Mica
- Dry Ice is: — Solid Carbon dioxide
- Cement containing excess amount of lime: — cracks during setting
- Which of the following is a micro-element? — Chlorine
- Rock salt is a mineral containing: — Sodium
- In a nuclear reactor, the material use for absorbing neutrons is: — Cadmium
- Solder metal is an alloy of: — Lead and Tin
- Copper is refined by: — Roasting
- The element with highest first ionization energy is: — Helium
- An atom of an element has atomic number 17 and mass number 36. The number of neutrons in its nucleus is: — 19
- Seaweeds are important source of: — Iodine
- The resources which can be used continuously, year-after-year are called: — Renewable resources
- Refrigerators keep food unspoiled because: — at its low temperature, bacteria and moulds are inactive
- When Hydrogen starts burning in air, it produces: — Water
- Spirit in contact with body gives cool sensation because it is: — Highly volatile
- Taj Mahal is greatly affected due to: — Acid Rain
- The unit of ionic product of water (Kw) is: — $Mol^2 let^{-2}$
- What is the chemical name of bleaching powder? — Calcium hypochlorite
- Alcoholic (—OH) group can be identified by: — $FeCl_3$ Test
- Pollutant from motor car exhaust that causes mental disease is: — Lead
- The total energy of revolving electron in an atom: — can never be positive
- Conduction band electrons have more mobility than holes because they: — experience collision less frequently
- Iodine can be separated from a mixture of Iodine and Potassium Chloride by: — Sublimation
- Identify the metal which is non-toxic in nature. — Gold
- The gas that usually causes explosion in coal mines is: — Methane
- The chemical behavior of an atom depends upon: — the number of electrons orbiting around the nucleus
- A powerful eye irritant present in smog is: — Peroxyacetyl nitrate
- The most important ore of lead is: — Galena
- When water itself combines chemically with some element or mineral it is called: — Hydration
- The electronic configuration of an atom having atomic number '20' is: — 2, 8, 8, 2
- The most reactive among the halogens is: — Fluorine
- $KMnO_4$ can be used as a: — Disinfectant
- Electrolysis of an aqueous solution of copper sulphate using copper electrodes gives: — Copper at cathode and oxygen at anode
- Which inert gase can form compounds? — Xenon
- Burning pyrites ore gives out: — Sulphur dioxide gas
- Oxygen has (+) oxidation number only in: — OF_2
- The particle required to continue the chain process of Uranium fission is: — Neutron
- The chief source for the production of nitrogenous fertilizers is: — Ammonia
- The element used for making solar cells is: — Silicon
- Bakelite is a co-polymer of Phenol and: — Formaldehyde
- When a spoon is to be electroplated with nickel, the spoon is: — made cathode and a pure nickel red, the anode
- Wood spirit is: — Methyl alcohol
- Fire fighting clothes are made of: — Asbestos
- Water gas is the mixture of: — Carbon monoxide and hydrogen
- Which type of fire extinguisher is used for petroleum fire? — Foam type
- The function of skimming tank in sewage treatment is to remove: — Oil and fatty substances
- Black lung disease occurs in people working in: — Coal mines
- The chief source of naphthalene is: — Coal tar
- Why water is not suitable for putting out a petrol fire? — Water, being heavy, slips below petrol which thus remains in contact with air and burns
- Milk is: — Emulsion
- The chemical substance present in bones and teeth is: — Calcium phosphate
- Maximum permissible concentration of copper in drinking water in mg/L is: — 1.0
- If lime water is kept in the air, it turns milky due to the presence of: — Carbon dioxide
- Heavy metal pollution of water is caused by: — Paints
- The inert gas which is substituted for nitrogen in the air used by deep sea divers for breathing is: — Helium
- One carat of diamond is equal to — 200 m

- The process by which milk is converted to curd is called: — Fermentation
- The technique of calculating the age of fossil organisms is: — Radiocarbon dating
- Nitrogen forms a variety of compounds in all oxidation states ranging from: — 3 to +3
- The next higher homologue of C_6H_{14} is: — C_7H_{16}
- The chemical used as a 'fixer' in photography is: — Sodium thiosulphate
- Yellow Cake, an item of smuggling across border, is: — Uranium Oxide
- The difference between a nuclear reactor and an atomic bomb is that: — The chain reaction in nuclear reactor is controlled
- Physic-chemical characteristics of water in water sources undergo changes due to: — Effluents
- The alpha particle carries two positive charge. Its mass is very nearly equal to that of: — An atom of helium
- The offending substance in the liquor tragedies leading to blindness is: — Methyl alcohol
- The characteristic odour of garlic is due to: — A sulphur compound
- The most reactive among the halogens is: — Fluorine
- The water pollution in rivers is measured by the dissolved amount of: — Oxygen
- Coke is one of the materials of the charge added to blast furnace for the production of steel/iron. Its function is to: — act as the reducing agent
- In the production of steel/iron, what is the function of coke? — To function as a fuel, supply heat
- Barium in a suitable form is administered to patients before and X-Ray examination of the stomach, because: — It is a good absorber of X-Rays and this helps the stomach to appear clearly in contrast with the other regions in the picture
- Cobalt-60 is commonly used in radiation therapy because it emits: — Gamma Rays
- The correct statement is: — To dilute sulphuric acid, acid is added to water and not water to acid.
- Large cold storage plants use ____ as refrigerant, while domestic refrigerators use chlorofluorocarbons. — Ammonia
- Most of the explosions in mines occur due to the mixing of: — oxygen with acetylene
- Aluminium surface are often 'anodized.' This means the deposition of a layer of: — Zinc oxide
- Hard water is not suitable for: — washing clothes with soap
- In an atom, the order of filling up of the orbital is governed by: — Aufbau's Principle
- An aqueous solution of copper sulphate is acidic in nature because the salt undergoes: — Hydrolysis
- In a group of elements, what decreases as the atomic weight increases? — Electron affinity
- In a given period, what gradually increases along a period? — Ionization Potential
- A radioactive substance has a half-life of four months. Three-fourth of the substance would decay in: — 8 months
- If we sprinkle common salt on an earthworm, it dies due to: — osmotic shock
- Endosulfan, which has been in news these days, is a: — Pesticide
- Gypsum is added to clinker during cement manufacturing to: — decrease the rate of setting of cement
- The main chemical constituent of the oil of cardamom which is responsible for flavour of this oil is: — Cineole
- The molecule which has the highest percentage of ionic character among the following is: — HF
- The high reactivity of fluorine is due to: — its high electro negativity
- The iron ore magnetite consists of: — Fe_2O_3
- The main chemical constituent of clay is: — aluminium silicate
- The mineral containing both magnesium and calcium is: — Dolomite
- The metal does not give H_2 on treatment with dilute HCl is: — Ag
- The number of g-molecule of oxygen in 6.02×10^{24} CO molecules is: — 5 gram of molecule
- The most extensive, commercially useful source of thorium as monazite sand occurs in India at: — Travancore Coast
- The main active constituent of tea and coffee is: — Caffeine
- The maximum number of isomers for an alkene with molecular formula C_4H_8 is: — 4
- The organic reaction represented by equation $CH_3 - CH = O + H_2NOH$ gives $CH_3 - CH - NH + H_2O$ is an example of: — a condensation reaction
- The hottest part of the gas flame is known as: — non-luminous zone
- The human body is made up of several chemical elements; the element present in the highest proportion (65%) in the body is: — Oxygen
- The isomerism which exists between CH_3CHCl_2 and $CH_2Cl.CH_2Cl$ is: — positional isomerism
- The half life period of an isotope is 2 hours. After 6 hours what fraction of the initial quantity of the isotope will be left behind? — 1/8
- The number of waves made by an electron moving in an orbit having maximum magnetic quantum number is +3: — 4
- The number of atoms present in 21.6 gram of silver (atomic weight = 108) are same as the molecules in: — 12 moles of $KMnO_4$
- Equal masses of oxygen, hydrogen and methane are kept under identical conditions. The ratio of the volumes of gases will be: — 1 : 16 : 2
- The mass number of an atom is equal to: — the number of nucleons
- The maximum number of covalent formed by nitrogen is: — 4
- The formula C_6H_5-CO-CH_3 represents: — Acetophenone
- The method of concentrating the ore which makes use of the difference in density between ore and impurities is called: — Levigation
- The inert gases are ____ in water. — Sparingly soluble
- The molecular formula of phosphorous is: — P_4
- The names of the scientists, Newlands, Mendeleev, and Meyer are associated with the development of: — periodic table of elements

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