AL AIN JUNIORS SO INDIAN SYSTE	нооц Я		NAME OF THE DEPARTMENT : SCIE	NCE: SYLLABUS BREAK UP 2021	-22 -AJI						
Name of t	he Subject Teacher:-SUNDARESH KUM	IAR		Grade:-11							
MONTH	Unit/Section	Topic Break Down / for Periods/Learning objectives / progression	Learning Outcomes/ Skills acquired	Activities (Formative assessment tasks, projects, Visits) INCLUDING VIRTUAL LEARNING	Teaching Aids / Reference/ Resources	Competencies and Values	MY IDENTITY	Cross curricular link	Artificial Intelligence	Critical Thinking Questions- Descriptive	Critical Thinking Questions- Objective
	Some basic concept of chemistry	Explain the tree states of matter Significant figures State the laws of chemical combination Fplain Daltons Atomic theory Atomic and molecular masses	Students will be able to appreciate the role of chemistry in different spheres of life Students will be able to explain the characteristics of the three states of matter Students will use scientific notations and perform simple mathematical operations on numbers Students will be able to differentiate between precision and accuracyStudents will be able to state the laws of chemical combination	Students will be asked to write the important applications of chemistry in everyday life 2/2) Questions based on scientific notations	Smart board, Ncert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Critical Thinking Creative Thinking Team Work INTEGRITY	Importance of chemistry in various fields in UAE	Croos curricular link with Math and Physics Scientific notation- Physics	Introduction to Al Awareness through Google story Speaker Link to install Story Speaker extension for Story Speaker. https://chrome.google.com/webstore/detail/story-speaker/ohfibfhhfbhknfdkipjdopbnegkbkjp	At STP, what will be the volume of molecules of 6.022 1023 H2? Vitamin C is essential for the prevention of scurvy.Combustion of 0.2000g of vitamin C gives 0.2998g of CO2 and 0.819g of H2O. What is the empirical formula of vitamin C? 3. What volume of 10M HCl and 3M HCl should be mixed to obtain 1L of 6M HCl solution	
April	Some basic concept of chemistry	Describe the Mole concept and molar masses Calculate the Percentage composition Explain Stoichiometry and stoichiometric calculations. Explain the various ways to calculate the concentrations solutions	. Students will be able to describe the terms- mole and molar mass Students will be able to determine empirical formula and molecular formula for a compound from the given experimental data	Numerical on mole concept Students will be asked to find the empirical formula and molecular formula	Smart board, Ncert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Imporatnee of mole concept concept in the research filed in UAE	Numerical On		Calculate the weight of lime (CaO) obtained by heating 2000kg of 95% pure lime stone (CaCO3) How much potassium chlorate should be heated to produce 2.24L of oxygen at NTP?	6. Which one will have maximum numbers of water molecules?
	Structure of Atom	Explain Thomsons model of atom Desribe alpha particle scattering experient Pescribe the limitatins of Rutherfords model of atomrs	Students will be able to explainThomsons model of atom. Students will be able to describe Rutherfords model of Atom Studets will be able to describe the limitations f Ruterfords model of atom		Smart board, Ncert book, related videos, ppt, stcky notes, blank papers, differentiated worksheets, assessment tasks	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Importance of Structure of atom in research fileId	Structure of atom can be linked with Physics	3 D Model of atom to get an idea about bond formation	Calculate the frequency and energy of a photon of radiation having wavelength 3000 Ao What transition in the hydrogen spectrum would have the same wavelength as the Balmer transition, n = 4 to n = 2 of He+ spectrum? Spectral lines are regarded as the finger prints of the elements. Why?	1. The increasing order (lowest first) for the values of e/m (charge/mass) for (a) e, p, n, α (b) n, p, e, α (c) n, p, e, α (d) n, α , p, e 2. A gas absorbs a photon of 355 mm and emits at two wavelengths. If one of the emissions is at 680 nm, the other is at: (a) 518 nm (b) 1035 nm (c) 325 nm (d) 743 nm 3. Consider the ground state of Cr atom (Z = 24). The numbers of electrons with the azimuthal quantum numbers, $I = 1$ and 2 are, respectively: (a) 12 and 4 (b) 12 and 5 (c) 16 and 4 (d) 16 and 5
	Structure of Atom	7 Describe Bohr's model of Hydrogen atom Analyze Quantum mechanical model of atom Orbital's and quantum numbers Filling of orbital's in atom	Students will be able o describe Bohr's model of atom. Students willbe able to analyze the important features of the quantum mechanical model of atomtheory. Students will be able to State the De-Broglie relation and Heisenberg's principle. Students will be able to define atomic orbital in terms of quantum numbers. Students will be able to State Aufbau principle, Pauli principle and Hund's rule of maximum multiplicity Students will be able to write the electronic configuration of atom	Students will debate about the various rules which govern the distribution of electrons in atomic orbitals	Smart board, Ncert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Applications of electromagnetic spectrum in UAE	De- Broglie concept with Physics	3 D Model of Bohr model of Atom	4. Calculate the uncertainty in the momentum of an electron if it is confined to a linear region of length 1 X 10-10. 5. What designations are given to the orbitals having (i) $n=2, l=1$ (ii) $n=2, l=0$ (iii) $n=4, l=3$ (iv) $n=4, l=2$ (v) $n=4, l=1$?	1. The excitation energy of a hydrogen atom from its ground state to its third excited state is (a) 12.75 eV (b) 0.85 eV (c) 10.2 eV (d) 12.1 EV 2. Number of unperided electrons in N2+ (a) 3 (b) 1 (c) 2 (d) 0 3. Maximum number of electrons in a subshell can be (a) 41+2 (b) 41-2 (c) 2n2 (d) 21+1 4. Which of the following statements in relation to the hydrogen atom is correct? (a) 3s orbital is lower in energy than 30 orbital (b) 3p orbital is lower in energy than 3d orbital (c) 3s and 3p orbitals are of lower energy than 3d orbital (d) 3s, 3p and 3d orbitals all have the same energy
	Classification of elements and periodicity in properties	Describe the Genesis of periodic classification State Modern periodic law Analyze the electronic configuration of elements and the periodic table Explain the Periodic trends in properties of elements	Students will be abl to state the periodic law and significance of atomic number and electronic configuration as the basis for periodic classification. Students will be able to recognize the periodic trends in physial and chemical properties. Students will be able to explain the term Ionisation enthalpy and electron gain enthalpy and their variation across the periods and groups in the periodic table		Smart board, Neert book, related videos, ppt, steky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Applications of elements in various fields in UAE	Atomic number and periodicty with Physics	Al Programme developed by Stanfor scientists recreated the periodic table in just a few hours	Predict the position of the element in the periodic table satisfying the electronic configuration (n-1) d1 ns2 for n=4, 2. Na+ has higher value of ionization enthalpy than Ne, though both have same electronic configuration	Which of the following oxides is amphoteric in character? a). SnO2 b) CO2 b) SiO2 d) O SoO 2. Arrange S, O and Se in ascending order of electron affinity (a) Se < S < O (b) Se < O < S (c) S < O < Se (d) S < Se < O 3. Arrange S, O and Se in ascending order of electron affinity (a) Se < S < O (b) Se < O < S (c) S < O < Se (d) S < Se < O 4. Increasing order of electron egativity is (a) $Bi < P < S < CI$ (b) $P < Bi < S < C$ (c) $C < C$ (c) $C < C$ (d) $C < C$ (d) $C < C$ (e) $C < C$ (e) $C < C$ (f)
	Chemical Bonding	Describe Kossel –Lewis approach to chemical bonding Explaiin the various Bond parameters	Students will be able nderstand Kossel-lewis approach to chemical bonding Students will be able to explain octet rule and its limitations. Students will be able to write a note on various bond parameteres	A debate on Octet rule and its limitations	Smart board, Ncert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc. phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Applications of bond parameters in UAE	Chemical Bond with Biology	https://en.wikipedia.org/wiki/Chemical_bond_A machine learing_view of chemical bond given below	On which factor does dipole moment depend in case of polyatomic molecules SF4 molecule, the lp electrons occupies an equatorial position in the trigonal bipyramidal arrangement to an axial position. Give reason	C-O bond length is minimum in (a) CO2 (b) CO32- (c) HCOO- (d) CO 2. Molecules are held together in a crystal by (a) hydrogen bond (b) electrostatic attraction (c) Van der Waal's attraction (d) dipole-dipole attraction 3. Find the molecule with the maximum dipole moment (a) CH4 (b) NH3 (c) CO2 (d) NF3 4. Find the pair with sp2 hybridisation of the central molecule (a) NH3 and NO2- (b) BF3 and NH2- (c) BF3 and NO2- (d) NH2- and H2O
May	Chemical Bonding	Describe the valence bond theory Analyze the Orbital overlap concept Explain the term Hybridization by taking various examples □	Differentiate between sigma bond and pi bond. Students will be able explain the formation of many molecules on the basis of hybridisation	A task on order of stability of moecules using molecualr orbital configuration concept	Smart board, Neert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Applications of bond parameters in UAE	Hybridisation concept can be linked with Biology	germanium	3. Why does H2O have bent structure?	5. The hybrid state of sulphur in SOZ molecule is: (a) sp² (b) sp² (c) sp (d) sp² (d)
	Chemical Bonding	Explain the salient features of molecular orbital theory, Write the Molecular orbita configuration, magnetic behaviour, Hydrogen bonding	Students will be able to describe MO theory, Students will be able to write the Molecular orbital configuration . Students will be able to find the bond order and predict the magnetic behaviour		Smart board, Ncert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Applications of bond parameters in UAE		Make a three dimensional model of Graphite and diamond	How would you attribute the structure of PH3 molecule using VSEPR model? In H2O, H2S, H2Se, H2Te, the bond angle decreases though all have the same bent shape. Why?	10. Which of the following will have the lowest boiling point? (a) 2-Methyllwlane (b) 2-MethylPropane (c) 22-Dimethylpropane (d) n-Pentane 2. Among the following the maximum covalent character is shown by the compound (a) MgCl2 (b) FeCl2 (c) ShCl2 (d) AlCl3 3. Among the following mixtures, dipole-dipole as the major interaction, is present in (a) benzene and ethanol (b) acetoritrile and acetone (c) KCl and water (d) benzene and carbon tetrachloride
	States of matter	State the various gas laws. Explain the term Ideal gas. Derive idela gas equation. State Dalton's law of partial pressure. Explain the postulates of Kinetic molecular theory of gases. Analyze the Behaviour of real gases and deviation of real gases from ideal behaviour	Students will be able to state gas laws and solve numerical based on it. Students will be able to define ideal gas equation. Students will be able to derive ideal gas equation from gas laws. Students will be able to describe the postulates of Kinetci molecular theory of gases. Students will be able to analyze the reason for the deviation of real gases from ideal beheviour. Students will able to explain the behavior of real gases	Students will discuss the reasons for the deviation of real gases from ideal behavior	Smart board, Ncert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Importance of gas laws in the matereological field in UAE	Kinetic molecular theory with Physics	3 D- diagram showing the deviation of real gases from ideal behaviour	At what temperature will the volume of a gas at 0o C double itself, pressure remaining constant? So cm3 of hydrogen gas enclosed in a vessel maintained under a pressure of 1400 Torr, is allowed to expand to 125 cm3 under constant temperature conditions. What would be its pressure?	1. Name the liquid with higher vapour pressure in the following pairs: (a) Alcohol, dycerine (b) Petrol, kerosene (c) mercury, water. (a) Alcohol, Water, Petrol (b) Petrol, Water, Alcohol (c) Alcohol, Petrol, Water (d) None of these 2. A gas deviates from ideal behavior at a high pressure because its molecules: (a) Attract one another (b) Show the Tyndall Effect (c) Have kinetic energy (d) Are bound by covalent bonds 3. The value of universal gas constant R depends on (a) Temperature of Gas (b) Oulme of Gas (c) Number of Moles of Gas (d) Units of Volume, Temperature and Pressure

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	States of matter	7	Explain the term liquefaction of gases. Liquid state, Vapour pressure, surface tension , viscosity	Students will be able to describe the conditions required for liquefaction of gases Students will be able to differentiate between gaseous state and vapors Students will be able to explain properties of liquids in terms of intermolecular attractions. Students will be able to explain the term surface tension and viscosity and their variation with temperature	Smart board, Ncert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Importance of gas laws in the matereological field in UAE	Surface tension and Viscosity with physics and Biology	Depict the surface tension and Viscosity three dimensionally	Molecule A is twice as heavy as the molecule B. which of these has higher kinetic energy at any temprature? 4. What is the value of compressibility factor Z, of a gas when (i) pressure is low, (ii) pressure is high, (iii) at intermediate pressure.	4. The theory which explains that gases consist of molecules, which are in rapid option is known as: (a) Dations Atomic Theory (b) Bohrs Theory (c) Rutherfords Atomic Theory (d) Kneite Molecular Theory (d) Kneite Molecular Theory 5. The rates of diffusion of gases are inversely proportional to square root of their densities. This statement refers to: (a) Dations Law (b) Grahams Law (c) Avogadros Law (d) None of the Above 6. If helium and methane are allowed to diffuse out of the container under the similar conditions of temperature and pressure, then the ratio of rate of diffusion of helium to methane is: (a) 2:1 (b) 1:2 (c) 3:5 (d) 4:1
June	Redox reaction	7	Explain the classical concept of oxidation and reduction. Explain the electronic concept of oxidation and reduction. Describe the types of reactions such as combination reaction, displacement reactions and disproportionation reaction	Students will be able to understand redox reaction and balance ionic equation using half reaction method. Students will be able to classify redox reaction into combination, decomposition, displacement, disproportionation, reactions.	Smart board, Ncert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Applications of redox reactions in varous fields in UAH		3 D model of an Elecrochemical cell	The displacement reactions of CI, Br, I using fluorine are not generally carried out in aqueous solution. Give reason. 2. An electrochemical cell is constituted by combining Al electrode (E0 = -1.66v) and Cu electrode (E0 = +0.34v). Which of these electrodes will work as cathode and why?	1. What is known as Autoxidation? (a) Formation of H2O by the oxidation of H2O2. (b) Formation of H2O2 by the oxidation of H2O2. (c) Both (1) and (2) are true. (d) None of the above 2. If equal volumes of 1M KMnO4 and 1M K2Cr2O7 solutions are allowed to oxidize Fe2+ in acidic medium. The amount of iron oxidized will be: (a) More with KMnO2 (b) More with K2Cr2O7 (c) Equal with both oxidising agents (d) Cannot be determined 3. Which of the following processes does not involve oxidation of iron? (a) Formation of Fe(CO)5 from Fe. (b) Liberation of H2 from tseam by iron at high temperature. (c) Rusting of iron sheets. (d) Decolourisation of blue CuSO4 solution by iron.
	Redox reaction	7	Discuss the steps involved in Balncing of redox reaction . Describe the electrochemical cell and electrode potential	Students will be able to balance the chemical equations using half reaction method. Students will be able to write the working of electrochemical celle and able to write electrode reactions Construct an electrochemical cell and find its potentials and able to write electrode reactions	Smart board, Ncert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Applications of redox reactions in varous fields in UAF			Can we store copper sulphate in an iron vessel?	4. The oxidation number of Mn is maximum in (a) MnO2 (b) K2MnO4 (c) MnO4 (d) KMnO4. 5. The tendency of an electrode to lose electrons is known as (a) Electrode Potential (b) Reduction Potential (c) Oxidation Potential (d) E.M.F. (6. A standard reduction electrode potentials of four metals are A = -0.250 V, B = -0.140 V, C = -0.126 V, D = -0.402 V The metal that displaces A from its aqueous solution is: (a) A (b) B (c) C (d) D 7. Which among the following is the strongest oxidising agent? (a) H2O2 (b) O3 (c) K2Cr2O7 (d) KMnO4
July August				SUMMER VACATION					•		
ragua	Thermodynamics	7	Discuss the basic terms in thermodynamics. State the First law of thermodynamics. Describe the Internal energy change and pressure volume work. Entahlpy and the derivations	Students will be able to explain the basic terms in thermodynamics. Students will be able to describe the state function and internal energy. Students will be able to explain the ways by which internal energy can be changed. StudentsDerive pressure - volume work. State first law of thermodynamics and give its mathematical form	Smart board, Ncert book, related videos, ppt, steky notes, blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Chemical industries in UAE	Thermodynamic s can be cross likneked with Physics	Model of Preesure -volume work	Why is the difference between ΔH and ΔU not significant for solids orliquids? Li has been found that 221.4J is needed to heat 30g of ethanol from 150C to 180C. calculate (a) specific heat capacity, and (b) molar heat capacity of ethanol	1. The temperatures of inside and outside of a refrigerator are 273 K and 303 K respectively. Assuming, that the refrigerator cycle is reversible, for every joule of work done, the heat delivered to the surrounding will be nearly: (a) 10 J (b) 20 J (c) 30 J (d) 50 J Third law of thermodynamics provides a method to evaluate which property? (a) Absolute Energy (b) Absolute Enthalpy (c) Absolute Entropy (d) Absolute Fore Energy 3. One mole of which of the following has the highest entropy? (a) Liquid Nitrogen (b) Hydrogen Gas (c) Mercury (d) Diamond
September	Thermodynamics	7	Explain the term heat capacity specific heat capacity and molar heat capacity. Measurement of Internal energy change and Enthalpy change. State the Hess's law, Spontaneity, Describe the Entropy Gibbs energy change and spontaneity	Students will be able to Derive the realation between Cp and Cv. Students will be able to Derive the realation between Cp and Cv. Students will be able to State Hess's law and give its applications. Students will be able to define Gibbs energy. Students will be able to define Gibbs energy. Students will be able to define entropy Debate on Gibbs energy change and spontaneity Students will be able to make the conditions for spontaneity. Students will be able to define entropy	Smart board, Neert book, related videos, ppt, steky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Chemical industries in UAE	Relation between Cp and Cv can be cross linked with Physics	We can use machine to predict the standard entipy formation of hydrocarbons	3. Two ideal gases under same pressure and temperature are allowed to mix in an isolated system. What will be the sign of entropy change?	4. In which of the following process, a maximum increase in entropy is observed? (a) Dissolution of Salt in Water (b) Condensation of Water (c) Sublimation of Naphthalene (d) Melting of Ice 5. Which thermodynamic function accounts automatically for enthalpy and entropy both? (a) Heimholtz Free Energy (A) (b) Internal Energy (E) (c) Work Function (d) Gibbs Free Energy 6. A system absorb 10 kJ of heat at constant volume and its temperature rises from 270°C to 370°C. The value of Δ U is (a) 100 kJ (b) 10 kJ (c) 0 kJ (d) 1 kJ 7. The temperature of the system decreases in an
				REVISION AND TERM-1 EXAMINATION							
				TERM- 1 EXAMINATION							
	Hydrogen	7	Describe the Position of hydrogen in the periodi table Explain the types of isotopes of hydrogen. Describe the various Hydrides Analyze the structue of Water Discuss the chemical properties of water. Differentiate between Hard water and soft water. Describe the various method for the Removal of hardness of water. Draw the structure of hydrogen peroxide- preparation , chemical properties and structure	Students will be able to describe the position of hydrogen in the periodic table, Students will be able to depict the structure of water and acquire the knowledge about heavy water importance Students will be able to explain the various methods of preparation of hydrogen peroxide and its structure 1) Students will debate on the position of hydrogen in the periodic table. 2) A research on hydrogen economy 3) Important applications of hydrogen peroxide		Cultural Awareness & Citizenship Independent Learning TOLERANCE	Hydrogen economy in UAE	Presnt a skit on hydrogen economy (ART)	H2-O2 Fuel cell can be made more efficient by innovative AI system	Why is ice less dense then water and what kind of attractive forces must be overcome to melt ice? Calculate the strength in volumes of a solution containing 30.36 g/l of H2O2. What happens when hydrogen peroxide reacts with acidified K2Cr2O7?	1. Pure H2O2 is : (a) Semi – solid (b) Liquid (c) Solid (d) Gas 2. The freezing point of heavy water is (a) 0°C (b) 3.8°C (c) 4°C (d) 1°C 3. H2O2 used in rocket has the concentration: (a) 50% (b) 90% (c) 70% (d) 30% 4. Which of the following hydrides are generally nonstochiometric in nature? (a) Ionic Hydrides (b) Molecular Hydrides (c) Interstitial Hydrides (d) All of the Above. 5. What is the product of the reaction of H2O2 with Cl2? (a) O2 + HOCI (b) HCI + O2 (c) H2O + HCI (d) HCI + H2
October	s Block elements	7	Discuss the general characteristics of the compounds of the alkali metals Eplain the Anomalous properties of Lithium Some important compounds of sodium	Students will be able to understand the general characteristics of the alkali metals and their compounds Students will be able to describe the manufacture ,properties and uses of industrially important compounds of sodium . Students will be able to analyze the various uses of sodium compounds in daily life Debate on biological importance of sodium potassium potas	Smart board, Ncert book, related videos, ppt, steky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Imporatnee of sodium compounds in UAE	Importance of Na and K as minerals (Biology)	Model of Castner kellner cell for the manufacture of NaOH	Why metals like potassium and sodium can not be extracted by reduction of their oxides by carbon? Solution of Na2 CO3 is alkaline. Give reason.	1.CsOH is (a) Strongly basic (b) Weakly basic (c) Slightly acidic (d) Amphoteric. 2.Solvays process is used for the manufacture of : (a) NaOH (b) (NaZCO3. 10H2O) (c) K2CO3 (d) Na2O2 What are Oxo-Acids? (a) Acid containing Oxygen (b) Acid containing Sulphur (c) Acid containing Carbon (d) None of the Above 4. The substance not likely to contain CaCO3 is (a) Dolomite (b) A marble statue (c) Calcined gypsum (d) Sea shells.
	s Block elements	7	Discuss the general characteristics of the compounds of alkaline earth metals Explain the Anomalous behavior of Berrylium Analyze Some important compounds of calcium	Students will be able to describe the general trends in the properties of alkaline earth metals. Students will be able to describe the anomalous behaviour of Beryllium. Students will be able to analyze the diagonal realtionship between Be and Al	Smart board, Neert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	List out the various adsorption technique used in UAE	Importance of Al as electrode in physics		Why does the solubility of alkaline earth metal hydroxides in water increase down the group? Why is beryllium carbonate unusually unstable thermally as compared to the other carbonates of this group? 5. Anhydrous calcium sulphate can not be used as plaster of Paris. Give reason	5. Carnalite is the mineral of: (a) Na (b) Ca (c) Mg (d) None of the Above 6. The basic strength of which hydroxide is maximum (a) LIOH (b) NaOH (c) Ca (OH)2 (d) KOH.

	P block Elements 7 Organic chemistry - Basic	Discuss the chemistry of Boron family Explain the metods of preparation of Borax. Ortho boric acid and diborane Discuss about carbon family. allotropic forms of carbon, oxides of carbon silica, silicates, silicones Describe the tetravalence of carbon Discuss the classification of organic	Students will be able to appreciate the general trends in the chemistry of p block elements Students will be able to describe and rationalize the trends in behaviour across the rows and down the groups of group 13 and 14 elements Students will be able to explain anomalous behavior of boron and carbon Students will be able to describe allotropic forms of carbon Students will be able to understand the reasons for tetra valance of carbon, concept of the organic reaction mechanism and recognizes the type of		Smart board, Ncert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Importance of carbon compounds in UAE Petroleum deposits in UAE		3 D View of the structure of Diborane	The elements B, Al, Ca, In and TI are placed in the same group of the periodic table. Give reason. The atomic radius of Ca is less than that of Al. Why? Bybl4 does not exist. Why? I. What type of hybridization of each carbon atom in the following compounds?	1. Which of the following statement is correct? (a) Copper (I) metaborate is colourless (b) Copper (II) metaborate is colourless (c) Copper (II) metaborate is light green (d) Copper (I) metaborate is dark green The structure of diBorane contains: (a) Four 2c – 2e bonds and two 3c – 2e bonds (b) Two 2c – 2e bonds and two 3c – 2e bonds (c) Two 2c – 2e bonds and two 3c – 3e bonds (d) Four 2c – 2e bonds and four 3c – 3e bonds (d) Four 2c – 2e bonds and four 3c – 2e bonds (l) Two 2c – 2e bonds and four 3c – 2e bonds (l) Four 3c – 3c bonds and four 3c – 2e bonds (l) Four 3c – 3c bonds and four 3c – 2e bonds (l) Four 3c – 3c bonds and four 3c – 2e bonds (l) It wisten both cystralline and Amorphous form (c) It forms solid chlorides 1. If two compounds have the same empirical formula but different molecular formula they must have
	Principles 7 Organic chemistry - Basic	Discuss the Cassin Canada of Game compounds Describe the Nomenclature of organic compounds Discuss the Isomerism in organic compounds Fundamental concepts in organic reaction mechanism Describe the Detection of	Origanic reactions, Students will be able to name the organic compounds based on IUPAC system of nomenclature Students will be able to recognize the types of organic reactions Students will be able to detect the presence of some elements.	reactions Depict the experimental set up in the	book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Refining of	Drugs(Medicine) Numericals on	3 D view of But 2- ene (Cis and Trans form)	(a) CH3C(b) (CH3)2CO (c) CH3CN (d) CH3CH = CHCN 2. How many σ and π bonds are present in each of the following molecules? (a) HC=CCH=CHCH3 (b) CH2=C=CHCH3 3. Draw the two geometrical isomers of, σ but – 2 – en – 1, 4 dioic acid. Which of the will have higher dipole movement? 4. Alkynes does not exhibit geometrical isomers. Give reason 1. How many isomers are possible for monosubstituted	5. If 0.228 g of silver salt of dibasic acid gave a residue of 0.162 g of silver on ignition then
November	Principles 7	elements, Discuss the various method of Estmation of C,N,S, P and Halogens Eplain the classification of	Students will be able to write the chemical equation for the reaction, Students will be able to describe the estimation of elements such as nitrogen, sulphur, halogens and phosphorus. Solve numerical on the topic Students will be able to recognize and write structures of isomers of	estimation of nitrogen Make a model of two conformers of ethane	book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE		Estimation(MATH)		and disubstituted benzene? 2. Using curved – arrow notation, show the formation of reactive intermediates when the following covalent bond undergo heterolysis cleavage. (a) CH3 – SCH3, (b) CH3 – CN, (c) CH3 – Cu.	molecular weight of the acid is (a) 70 (b) 80 (c) 90 (d) 100 6. If there is no rotation of plane polarized light by a compound in a specific solvent, thought to be chiral, it may mean that (a) The compound may be a racemic mixture (b) The compound is certainly a chiral (c) The compound is certainly meso (d) There is no compound in the solvent.
	Hydro carbons 7	hydrocarbon Describe the Preparation of alkane,alkene,alkyne- chemical properties Depict the Conformations in ethane Explain the rule of Aromaticity Describe the methods of	alkane,alkene,alkyne and aromatic hydrocarbon Students will be able to name hydrocarbons according to IUPAC system of nomenclature Students will be able to write the method of preparation, properties and chemical reactions of alkanes, alkenes alkynes and aromatic hydrocarbon such as benzene Students will be able to draw and differentiate between various conformations of ethane Students will be able to explain the preparation of Benzene by	Make a mind map showing the various	Smart board, Ncert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Dhabi in the field of petroleum deposits	Automobile enginering)	3 D model of Fractionating column	but the melting point of neopentane is higher than that of n – pentane Pentane has three isomers i.e; pentane, 2-methyl butane and 2,2-dimethyl propane. The b.p of pentane is 309.1K whereas 2,2-dimethyl propane shows a b.p of 282.5k. Why? 1. The physical properties of geometrical isomers are	The derivative is (a) 2, 2-dibromobutane (b) 1, 1-dibromopropane (c) 1, 4-dibromobutane (d) 1, 2-dibromobutane (d) 1, 2-dibromoethane 2. The position of double bond in alkenes can be located by : (a) Hydrogenation of oil (b) Ozonolysis (c) Photolysis (d) Hydration 3. Nitrobenzene on reaction with conc. HNO3/H2SO4 at 80 – 100°C forms which one of the following products? (a) 1, 2-Dinitrobenzene (c) 1, 3-Dinitrobenzene (c) 1, 2-4-Trinitrobenzene (d) 1, 2, 4-Trinitrobenzene (d) 1. The order of decreasing reactivity towards an electrophilic reagent, for the following :
	Hydro carbons 7 Environmental Chemistry (SEMINAR	Preparation of Benzene, Explain the Elecrophilic substitution	various methods, Students will be able to describe the electrophiic substitution reaction, Students will be able to write the mechanism of nitration, sulphonation, alkyalation and acylation reactions Students will be able to define atmospheric pollution, list reasons for	electrophilic substitution reactions of	book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Dhabi in the field of petroleum deposits Steps taken by UAE	Hydrocarbon as medicine (Phamaceutical chemistry)	Model of Different organic compounds	different while those optical isomers are same. Why? Dipole moment of cis – but – 2 – ene is 0.33 D whereas dipole moment of the trans form is almost zero. Why? 3. Butanone is formed when an alkyne is passed through a dil sol of H2SO4 at 330K in presence of mercuric sulphate. Write the possible structure of the alkyne 1. What is PAN?	(i) Berczene (ii) Toluene (iii) Chlorobenzene (iv) Phenol would be: (a) (i) (ii) (iii) (v) (b) (iii) (v) (v) (iii) (c) (iii) (c) (iv) (iii) (i) (i) (c) (d) (iv) (ii) (ii) (iii) (i
	BY STUDENTS)	pollutionand Soil pollution	global warming green house effect and acid rain Students will be able to Identify the causes for ozone layer depletion and its effects Students will be able to describe the causes of soil pollution		book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Cultural Awareness & Citizenship Independent Learning TOLERANCE	Govt to control different types of pollution	Geography)		2.Why does rain water normally have a pH of about 5.6? When does it become acid rain are the reactions involved for ozone layer depletion in the atmosphere? 4. What does the amount of BOD signify? 5. What is the desirable concentration of fluoride ion (F-) in drinking water?	(a) Wheat field (b) Paddy field (c) Cotton field (d) Croundhut field 2-Fluorosis, the bone disease, is caused by the presence of (a) Pesticides in water (b) Fluorides in water (c) Carbon monoxide in air (d) Sulphur dioxide in air. The most harmful air pollutant produced by automobiles is (a) HNO3 (b) NO (c) SO2 (d) CO.
December	Environmental Chemistry	Describe the causes of Water poluution, Discuss the term green chemistry	Students will be able to give reasons for water pollution and know about international standards for drinking water Suggest and adopt strategies for control of environmental pollution		Smart board, Ncert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations		Steps taken by UAE Govt to control different types of pollution		Depiction of Ozone layer depletion 3 Dimensionally	Why does rain water normally have a pH of about 5.6? When does it become acid rain 2.	4. Which of the following is responsible for depletion of ozone layer in the upper strata of the atmosphere? (a) Polyhalogens (b) Ferrocene (c) Fullerencs (d) Freons. SPhotochemical smog is related to pollution if (a) Air (b) Water (c) Soil (d) None of these 5. Which of the following acts as a sink for CO? (a) Plants (b) Haemoglobin (c) Microorganisms present in the soil (d) Oceans 6. Domestic waste mostly constitutes (a) Nor-biodegradable pollution (b) Biodegradable pollution (c) Effluents (d) Air pollution
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