National Curriculum of Pakistan 2022-2023
ASSESSMENT FRAMEWORK CHEMISTRY GRADE-X (SSC-II)
Details of Content Areas/ SLOs

Domains	Content Area	SLO No.	SLO Description	Cognitive Level	Type of Assessment	Remarks	Time allocation (Periods 1 Period =40 minutes)
'A' **Nature of Science in Chemistry**	**History of Chemistry**	[SLO:C-10-A-01]	Justify, with examples, that to do science is to be involved in a community of inquiry. (For context in Chemistry- This community adheres to certain common principles, methodologies, and processes, such as the use of empirical evidence and logical reasoning to develop scientific theories. For example, chemists based their research on the assumptions of conservation of mass and energy and use this to verify whether their calculations and findings are sensible. - Scientists in different fields often share similar methodologies, such as the use of controlled experiments and the peer review process. The scientific community also values objectivity and skepticism, which are essential for ensuring the accuracy and validity of scientific findings).	Understanding	**Formative**	**Question(s) will not be asked in annual examination, however it will be a part of classroom teaching.**	**02**
		[SLO:C-10-A-02]	Explain, with examples, that a 'scientific paradigm' is a theoretical model of how nature works (Some examples include: - The belief that materials that burn do so because a material called 'phlogiston' was the paradigm in chemistry in the 18th century - Historical models of the atom are paradigms, such as the 'plum pudding' and the Rutherford models of the atom - The periodic table of elements, and belief in the 'periodicity' of atoms based on the arrangements of their electrons is a paradigm Scientific paradigms in chemistry provide a framework for understanding the properties of materials and developing new	Understanding	**Formative**	**Question(s) will not be asked in annual examination, however it will be a part of classroom teaching.**	

			materials with specific properties. Overall, scientific paradigms in chemistry guide research and development in the field, and help scientists to better understand the behavior of chemicals and their interactions.				
		[SLO:C-10-A-03]	Explain, with examples, how scientists speak of "levels of confidence" (or uncertainty) when discussing experimental outcomes.	Understanding	**Formative**	**Question(s) will not be asked in annual examination, however it will be a part of classroom teaching.**	
		[SLO: C-10-A-04]	Explain the difference between repeatability and reproducibility in chemistry. (For context: - repeatability as the idea that scientific results from experiments should be possible to verify by conducting the experiment again under the same physical conditions. - reproducibility as the idea that the same or similar result is obtained when the measurement is made under either different conditions or by a different method or in different experiment).	Understanding	**Formative**	**Question(s) will not be asked in annual examination, however it will be a part of classroom teaching.**	
'B' **Physical Chemistry**	**Matter**	[SLO: C-10-B-01]	Explain changes of state and internal energy without change in temperature (melting, boiling, freezing, condensation, sublimation, and deposition) in terms of kinetic particle theory.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	**11**
		[SLO: C-10-B-02]	Distinguish between evaporation and boiling.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-03]	Interpret heating and cooling curves in terms of kinetic theory.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-04]	Interpret in terms of kinetic particle theory the effects of changing pressure, temperature and volume of a gas on the other two with regards to Boyle's law, Charles' Law, and Avogadro's Law.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-05]	Explain qualitatively the effect of external pressure on rate of boiling and evaporation.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	

		[SLO: C-10-B-06]	Explain diffusion of gases in terms of kinetic particle theory.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-07]	Examine qualitatively the effect of molecular mass and temperature on the rate of diffusion.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-08]	Discuss applications of sublimation around us. (Examples may include: solid air fresheners and 3D printing)	Understanding	**Summative for PBA**	**Lab work Questions will be asked in PBA.**	
		[SLO: C-10-B-09]	Explain, with the help of kinetic particle theory, the importance of rates of diffusion of medicines in the body.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
	Stoichiometry	[SLO: C-10-B-10]	Use the molar gas volume, 24 dm^3 at room temperature and pressure, in calculations involving gases.	Application	**Formative**	**Question(s) will not be asked in annual examination, however it will be a part of classroom teaching.**	**08**
		[SLO: C-10-B-11]	Define concentration, use both g/dm^3 and mol/dm^3 and convert them.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-12]	Calculate stoichiometric relationships between substances relationships (specifically: ● reacting masses, limiting reactants, ● volume of gasses at r.t.p., ● volumes of solution and concentrations of solutions in g/dm^3 or mol/dm^3, including conversion between cm and dm^3)	Application	**Summative + Formative**	**Question(s) will be asked in annual examination. However calculation for limiting reactants are formative**	
		[SLO: C-10-B-13]	Calculate concentration of a solution in a titration using empirical data.	Application	**Summative for PBA**	**Lab work Questions will be asked in PBA.**	
		[SLO: C-10-B-14]	Calculate empirical formula and molecular formula from appropriate data.	Application	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-15]	Calculate percentage yield, percentage composition by mass and percentage purity from appropriate data.	Application	**Formative**	**Question(s) will not be asked in annual examination, however it will be a**	

						part of classroom teaching.	
	Electrochemistry	[SLO: C-10-B-16]	Define electrolysis as decomposition of ionic compound, in molten or aqueous solution, by passage of electric current.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	**14**
		[SLO: C-10-B-17]	Identify and label in simple electrolytic cells, the anode (+), cathode (-), electrolyte and direction of flow of electrons in external circuit.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-18]	Describe the transfer of charge in external circuit, movement of ions in the electrolyte and transfer of electrons at electrodes.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-8-19]	Identify the products formed at electrodes and describe the observations made during the electrolysis of molten lead (II) chloride, concentrated aqueous sodium chloride, dilute sulfuric acid using inert electrodes (platinum or carbon/graphite).	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-20)	State that hydrogen- oxygen fuel cell uses hydrogen and oxygen to produce electricity with water as the only chemical product.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-21]	Describe the advantages and disadvantages of using hydrogen-oxygen fuel cells in comparison with gasoline /petrol engines in vehicles.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-22]	Identify the products formed at electrodes and describe the observations made during the electrolysis of dilute copper sulphate using inert electrode or copper electrode.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-23]	Predict the identity of products of electrolysis of a halide compound in dilute or concentrated solution.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-24]	Construct ionic half-equations for reaction at either electrode.	Application	**Summative for theory**	**Question(s) will be asked in annual examination.**	

		[SLO: C-10-B-25]	Describe the electroplating and its applications.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-26]	Sketch a schematic diagram for a Voltaic cell e.g. Daniel cell.	Application	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-27]	Use the voltage data given for voltaic cells to determine order of reactivity of any two metals.	Application	**Summative for theory**	**Question(s) will be asked in annual examination.**	
	Kinetics	[SLO: C-10-B-28]	Describe collision theory in terms of number of particles per unit volume, frequency of collisions of particles, kinetic energy of particles and activation energy.	Understanding	**Formative**	**Question(s) will not be asked in annual examination, however it will be a part of classroom teaching.**	**07**
		[SLO: C-10-B-29]	State that catalyst increases the rate of reaction, provides alternate pathway with lower activation energy, and remains unchanged at the end of a reaction.	Knowledge	**Formative**	**Question(s) will not be asked in annual examination, however it will be a part of classroom teaching.**	
		[SLO: C-10-B-30]	Describe the physical parameters that may be affected by the rate of, reaction including change in mass, temperature, and formation of gas.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-31]	Interpret data, including graphs, for investigating rate of reaction.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-32]	Explain the effect on rate of reaction of changing concentration of a reactant, pressure of gases, surface area of solids, temperature, presence of catalyst (including enzymes) using collision theory.	Understanding	**Formative**	**Question(s) will not be asked in annual examination, however it will be a part of classroom teaching.**	
		[SLO: C-10-B-33]	Justify the importance of chemical kinetics in the food industry to determine ideal harvesting and transportation times for produce.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	

	Salts	[SLO: C-10-B-34]	Explain that salts are ionic compounds formed due to electrostatic attraction between oppositely charged ions (in which the positive ions come from bases and negative ions come from acids).	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	05
		[SLO: C-10-B-35]	Explain why at STP salts are solids with high melting points.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-36]	Describe that under normal conditions, ionic compounds are usually solids with lattice structures.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-37]	Explain why the molten and aqueous solutions of salts are good conductors of electricity by making reference to the idea of mobile ions.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-38]	Describe the general solubility rules for salts. (These are: a. sodium, nitrate, potassium and ammonium salts are soluble b. chlorides are soluble except lead and silver. c. carbonates are insoluble except sodium, potassium and ammonium d. hydroxides are insoluble except sodium, potassium, ammonium and calcium (partially).	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-B-39]	Describe the preparation, separation and purification of soluble salts by reactions of acids with alkali (titration), excess metal, excess insoluble base, excess insoluble carbonate.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
'C' **Inorganic Chemistry**	**Nitrogen and Sulfur**	[SLO: C-10-C-01]	Recognize that atmospheric oxides of nitrogen (NO and NO_2) can react with unburned hydrocarbons to form peroxyacetyl nitrate, PAN, which is a component of photochemical smog.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	**07**
		[SLO: C-10-C-02]	Describe the role of NO and NO_2, in the formation of acid rain both directly and in their catalytic role in the oxidation of atmospheric sulfur dioxide.	Understanding	**Formative**	**Question(s) will not be asked in annual examination, however it will be a part of classroom teaching.**	

		[SLO: C-10-C-03]	State the symbol equation for the production of ammonia in the Haber process: $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-C-04]	State the sources of the hydrogen (methane) and nitrogen (air) in the Haber process.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-C-05]	State the typical conditions in the Haber process as 450°C, 20000 kPa /200 atm and an iron catalyst.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-C-06]	State the symbol equation for the conversion of sulfur dioxide to sulfur trioxide in the Contact process: $2SO_2 + O_2 \rightleftharpoons 2SO_3$	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-C-07]	State the sources of the sulfur dioxide (burning sulfur or roasting sulfide ores) and oxygen (air) in the Contact process.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-C-08]	State the typical conditions for the conversion of sulfur dioxide to sulfur trioxide in the Contact process as 450°C, 200kPa /atm and a Vanadium(V) oxide catalyst.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
	Oxides	[SLO: C-10-C-09]	**Oxides** Describe amphoteric oxides as oxides that react with acids and bases to produce a salt and water.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	**05**
		[SLO: C-10-C-10]	Classify oxides as acidic, including SO_2, and CO_2, basic, including CuO and CaO, or amphoteric, limited to Al_2O_3 and ZnO, related to metallic and non-metallic character.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-C-11]	**Properties of metals** Identify the general chemical properties of metals, limited to their reactions with dilute acids, cold water, steam and oxygen.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-C-12]	Arrange metals in order of reactivity given relevant information.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	

'E' **Organic Chemistry**	**Basics of Organic Chemistry**	[SLO: C-10-E-01]	Name and draw the structural and displayed formulae of unbranched alkanes, alkenes, alcohols, and carboxylic acids. (Include but-1-ene and but-2-ene, propan-1-ol, propan2-0, butan-1-ol and butan-2-ol).	Application	**Summative for theory**	**Question(s) will be asked in annual examination.**	**06**
		[SLO: C-10-E-02]	State the type of compound present given the chemical name ending in - ane, -ene, -yne, -ol, or -oic acid or from a molecular, structural or displayed formula.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-03]	Name and draw the displayed formulae of the unbranched esters which can be made from unbranched alcohols and carboxylic acids, each containing up to four carbon atoms.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
	Hydro-carbons	[SLO: C-10-E-04]	**Alkenes** State that the bonding in alkenes includes a double carbon-carbon covalent bond and that alkenes are unsaturated hydrocarbons.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	**07**
		[SLO: C-10-E-05]	Describe the manufacture of alkenes by the cracking of large alkane molecules using a high temperature and a catalyst.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-06]	Describe the reasons for the cracking of large alkane molecules.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-07]	Describe the test to distinguish between saturated and unsaturated hydrocarbons by their reaction with aqueous bromine and $KMnO_4$.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-08]	Describe the properties of alkenes in terms of addition reactions with: a. bromine or aqueous bromine b. hydrogen in the presence of a nickel catalyst c. steam in the presence of an acid catalyst and draw the structural or displayed formulae of the products	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-09]	Describe, using symbol equations, preparation of alkenes by elimination reaction in halogenoalkanes and alcohols.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	

		[SLO: C-10-E-10]	**Alkynes** Identify alkynes as hydrocarbons containing triple carbon-carbon covalent bond and that alkynes are unsaturated hydrocarbons.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-11]	Describe the use of ethyne as fuel for welding and in artificially ripening fruits.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-12]	Describe separation of petroleum into useful fraction by fractional distillation.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-12]	Describe how the properties of fractions obtained from petroleum change from the bottom to the top of the fractionating column, limited to: a. decreasing chain length b. higher volatility c. lower boiling points d. lower viscosity	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-14]	Name the uses of the fractions as: a. refinery gas fraction for gas used in heating and cooking b. gasoline /petrol fraction for fuel used in cars c. naphtha fraction as a chemical feedstock d. kerosene /paraffin fraction for jet fuel e. diesel oil/ gas oil fraction for fuel used in diesel engines f. fuel oil fraction for fuel used in ships and home heating systems. g. lubricating oil fraction for lubricants, waxes and polishes h. bitumen fraction for making roads	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
	Hydroxy Compounds	[SLO: C-10-E-15]	Describe the manufacture of ethanol. (This can be done by discussing • Fermentation of aqueous glucose at 25-35 ^{O}C in the presence of yeast and in the absence of oxygen. • catalytic addition of steam to ethane at 300 ^{O}C and 6000kPa / 6atm in the presence of an acid catalyst including a	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	**04**

			comparison of the advantages and disadvantages of the two methods)				
		[SLO: C-10-E-16]	Describe the combustion of alcohols.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-17]	Discuss the applications of alcohols as fuels, including their advantages and disadvantages over fossil fuels.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-18]	Explain the role of alcohols in various industries such as pharmaceuticals, cosmetics, and fuel production.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-19]	Discuss the impact of alcohols on daily life, including their use as solvents and disinfectants.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
	Carbonyl Compounds	[SLO: C-10-E-20]	Describe the reactions of carboxylic acids with metals, bases and carbonates including names and formulae of the salts produced.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	**06**
		[SLO: C-10-E-21]	Describe the formation of ethanoic acid by the oxidation of ethanol: with acidified aqueous potassium manganate (VII) & by bacterial oxidation during vinegar production.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-22]	Describe the reaction of a carboxylic acid with an alcohol using an acid catalyst to form an ester.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-23]	Describe the industrial applications of carboxylic acids and esters, including their use as solvents, flavors, fragrances, and plastics.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-24]	Explain the role of carboxylic acids and esters in daily life, including their use in food preservation, cosmetics, and pharmaceuticals.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
	Polymers	[SLO: C-10-E-25]	Define polymers as large molecules built up from many smaller molecules called monomers.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	**04**
		[SLO: C-10-E-26]	Identify the repeating units and / or linkages in addition polymers and in condensation polymers.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-27]	Deduce the structure or repeat unit of an addition polymer from a given alkene and vice versa.	Understanding	**Summative for theory**	**Question(s) will not be asked in annual**	

						examination, however it will be a part of classroom teaching.	
		[SLO: C-10-E-28]	Deduce the structure or repeating unit of a condensation polymer from given monomers and vice versa, limited to: a. polyamides from a dicarboxylic acid and a diamine b. polyesters from a dicarboxylic acid and a diol	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-29]	Describe the differences between addition and condensation polymerization.	Understanding	**Summative for theory**	**Summative**	
		[SLO: C-10-E-30]	State that plastics are made from polymers.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-31]	Describe how the properties of plastics have implications for their disposal.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-32]	Describe the environmental challenges. caused by plastics, limited to: a. disposal in landfill sites b. accumulation in oceans c. formation of toxic gases from burning	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-33]	Describe the structure of: a. nylon, a polyamide b. PET, a polyester The full name for PET, polyethylene terephthalate, is not required	Knowledge	**Formative**	**Question(s) will not be asked in annual examination, however it will be a part of classroom teaching.**	
		[SLO: C-10-E-34]	State that PET can be converted back into monomers and re-polymerized.	Knowledge	**Formative**	**Question(s) will not be asked in annual examination, however it will be a part of classroom teaching.**	
		[SLO: C-10-E-35]	Outline the importance of polymers in the textile industry. (Examples for polymers being used may be given along with their specific properties)	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	

	Bio-chemistry	[SLO: C-10-E-36]	Describe proteins as natural polyamides and that they are formed from amino acid monomers with the general structure.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	**05**
		[SLO: C-10-E-37]	Draw the general structure of proteins.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-38]	Explain the sources, use and structure of proteins, lipids and carbohydrates.	Understanding	**Formative**	**Question(s) will not be asked in annual examination, however it will be a part of classroom teaching.**	
		[SLO: C-10-E-39]	Describe the importance of nucleic acids.	Understanding	**Formative**	**Question(s) will not be asked in annual examination, however it will be a part of classroom teaching.**	
		[SLO: C-10-E-40]	Explain vitamins, their sources and their importance to health.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-E-41]	Identify applications of biochemistry in testing (blood test, pregnancy test, cancer screening, parental genetic testing), genetic engineering, gene therapy and cloning.	Understanding	**Formative**	**Question(s) will not be asked in annual examination, however it will be a part of classroom teaching.**	
'F' **Empirical Data Collection & Analysis**	**Energy**	[SLO: C-10-F-01]	Name fossil fuels; coal, natural gas and petroleum.	Knowledge	**Summative for theory**	**Question(s) will be asked in annual examination.**	**04**
		[SLO: C-10-F-02]	Name methane as main constituent of natural gas.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
		[SLO: C-10-F-03]	State that petroleum is a mixture of hydrocarbons, compounds containing hydrogen and carbon only.	Understanding	**Summative for theory**	**Question(s) will be asked in annual examination.**	
'G'		[SLO: C-09-10-G-01]	Explain, with examples, the types of chemical hazards in the lab and suggest safety precautions.	Understanding	**Formative for PBA**	**Question(s) will not be asked in annual**	**15**