Chemistry

Grade-IX (SSC-I)

List of Practical

SLO No.	SLO Description
SLO: C-09-D-12	Investigate chemical tests for the presence of water using anhydrous copper (II) sulfate.
SLO: C-09-D-13	Explain how to test the purity of water using melting point and boiling point.
SLO: C-09-D-14	Distinguish between Distilled water and tap water with their applications in practical chemistry.
SLO: C-09-F-09	Identify appropriate apparatus for the measurement of time, temperature, mass and volume, including: **a**. stop watches. **b.** thermometers. **c**. balances, **d**. burettes, **e**. volumetric pipettes, **f**. measuring cylinders. **g**, gas syringes.
SLO: C-09-F-10	Suggest advantages and disadvantages of experimental methods and apparatus.
SLO: C-09-F-11	Define important terms associated with creating chemical solutions.(Some examples include: **a.** Solvent as a substance that dissolves a solute. **b.** Solute as a substance that is dissolved in a solvent. **c.** Solution as a mixture of one or more solutes dissolved in a solvent. **d.** Saturated solution as a solution containing the maximum concentration of a solute dissolved in the solvent at a specified temperature. **e.** Residue as a substance that remains after evaporation, distillation, filtration or any similar process. **f.** Filtrate as a liquid or solution that has passed through a filter).

SLO: C-09-F-12	Explain methods of separation and purification (some example include: **a**. Using a suitable solvent. **b**. Filtration. **c**. Crystallization. **d.** simple distillation & fractional distillation).
SLO: C-09-F-13	Suggest suitable separation and purification techniques, given information about the substances involved, and their usage in daily life.
SLO: C-09-F-14	Identify substances and assess their purity using melting point and boiling point information.
SLO: C-09-F-15	Describe tests to identify important gasses (Some examples include a. Ammonia, NH_3, using damp red litmus paper. b. Carbon dioxide, CO_2, using limewater. c. Chlorine, Cl_2, using damp litmus paper. d. Hydrogen, H_2, using a lighter, splint. e. Oxygen, O_2, using a glowing splint. Sulfur dioxide, SO_2, using acidified aqueous potassium manganite (VII)).
SLO: C-09-F-16	Explain the use of a flame test to identify important cations:(Some examples include: a) lithium, Li^+ b) sodium, Na^+ c) potassium, K^+ d) calcium, Ca^{2+} e) copper (II), Cu^{2+} f) barium, Ba^{2+}
SLO: C-09-F-17	Describe how paper chromatography is used to separate mixtures of soluble substances, using a suitable solvent.
SLO: C-09-F-18	Describe the use of locating agents when separating mixtures in Chromatography containing colorless substances.(For context, knowledge of specific locating agents is not required)

SLO: C-09-F-19	Interpret simple chromatograms (For context, students should identify: a) unknown substances by comparison with known substances, b) pure and impure substances)
SLO: C-09-F-20	State and use the equation for Rf.
SLO: C-09-10-G01	Explain, with examples, the types of chemical hazards in the lab and suggest safety precautions. (Types of chemical hazards to be identified: flammable or explosive hazards, corrosive hazards, toxic hazards, reactive hazards, radiation hazards and asphyxiation hazards).
SLO: C-09-10-G02	Recognize the meaning of different chemical hazard signs in the lab and on chemicals.
SLO: C-09-10-G03	Recognize the importance of personal protective equipment (PPE) by correctly lab activities identifying the types of PPE needed for different lab activities.
SLO: C-09-10-G04	Locate the nearest fire extinguisher and emergency shower.
SLO: C-09-10-G05	Show awareness of emergency procedures in the event of an emergency in the lab.
SLO: C-09-10-G06	Identify apparatus from diagrams or descriptions.
SLO: C-09-10-G07	Draw, complete or label diagrams of apparatus.
SLO: C-09-10-G08	Explain the use of, common techniques, apparatus and materials.

SLO: C-09-10-G09	Select the most appropriate apparatus or method for the task and justify the choice made
SLO: C-09-10-G10	Describe tests (qualitative, gas tests, other tests).
SLO: C-09-10-G11	Describe and explain techniques used to ensure the accuracy of observations and data.
SLO: C-09-10-G12	Carry out the following tests under supervision. • Identification of metal ions. • Non-metal ions and gases. • Chemical test for water. • Test-tube reactions of dilute acids, including ethanoic acid. • Tests for oxidizing and reducing agents. • Melting points and boiling points. • Displacement reactions of metals and halogens. • Temperature changes during reactions.
SLO: C-09-10-G13	Carry out separation and purification techniques. (This may include: • Filtration. • Crystallization. • Simple distillation, fractional distillation. • Chromatography. • Electrolysis).
SLO: C-09-10-G14	Suggest the most appropriate apparatus or technique and justify the choice made.
SLO: C-09-10-G15	Describe experimental procedures.
SLO: C-09-10-G16	Take readings from apparatus (analogue and digital) or from diagrams of apparatus with appropriate precision.

SLO: C-09-10-G17	Take sufficient observations or measurements, including repeats where appropriate.
SLO: C-09-10-G18	Record qualitative observations from chemical tests and other tests.
SLO: C-09-10-G19	Record observations and measurements systematically (in a suitable table, to an appropriate degree of precision and using appropriate units).
SLO: C-09-10-G20	Record the results of an experiment.
SLO: C-09-10-G21	Process the results of an experiment to form a conclusion or to evaluate a prediction.
SLO: C-09-10-G22	Predict expected results.
SLO: C-09-10-G23	Interpret and evaluate experimental observations and data.
SLO: C-09-10-G24	Process data, including for use in further calculations or for graph plotting.
SLO: C-09-10-G25	Present data graphically, including the use of best-fit lines where appropriate.
SLO: C-09-10-G26	Analyze and interpret observations and data, including data presented graphically.
SLO: C-09-10-G27	Form conclusions justified by reference to observations and data and with appropriate explanation.
SLO: C-09-10-G28	Evaluate the quality of observations and data, identifying any anomalous results.
SLO: C-09-10-G29	Identify potential sources of error in an experimental design.

SLO: C-09-10-G30	Assess the limitations of an experimental design.
SLO: C-09-10-G31	Evaluate experimental arrangements, methods and techniques, including the control of variables.
SLO: C-09-10-G32	Suggest possible improvements to the apparatus, experimental arrangements, methods or techniques.