

CHEMISTRY

LABORATORY MANUAL
FOR
SENIOR SECONDARY COURSE

Co-ordinator
M.Sastri



विद्यया च सर्वज्ञानं प्राप्यते

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A Word With You

Dear learner

I welcome you to the Chemistry laboratory course. We hope you will enter into the laboratory with lot of enthusiasm to learn and understand many chemical aspects.

The laboratory manual contains introduction, basic laboratory techniques, laboratory safety measures, 15 experiments and finally the appendices.

After doing experiments 1 to 7 you will learn how to prepare certain gases, dilute concentrate acid or concentrate solution, compare the reactivity of metals, predict the pH value of the certain solutions and determine melting point of the substances. Experiment 8 will help you to find out effect of concentration and temperature on reaction rate. We are sure that you will really enjoy while doing separation of pigment of ink or grass juice in the experiment no. 9. Experiment 10 deals with detection of extra elements in organic compounds whereas the experiment no. 11 deals with reactions of carbohydrates which are really interesting one to perform. After doing experiment no. 12, you can compare soaps which are available in the market by comparing their foaming capacity and cleaning effect.

Experiment no. 13 deals with following three major aspects :

- i) Proper use of analytical balance.
- ii) Preparation of standard solution by using primary standards, and
- iii) Estimating chemical substances by volumetric method.

Experiment no. 14 gives you an idea to identify the unknown chemicals i.e. salt (inorganic qualitative analysis) whereas experiment no. 15 deals with detection of functional groups of organic compounds (organic qualitative analysis).

We believe that after completing the experiments described in this manual you will gain confidence to perform chemical reactions safely and efficiently.

The laboratory is a place to learn about the behavior of matter. You are suggested to forget preconceived notions about what is supposed to happen, follow instructions carefully, and see what actually happens. Be meticulous in recording the true observations even though you "know" something else should happen. Don't hesitate to seek advice from your instructor. Recall the ancient dictum: "He who asks a question may appear ignorant for the moment, he who does not, remains ignorant forever".

We hope you will find all the experiments described in the manual interesting and informative. In case, you face any problem while doing the experiments, you are suggested to consult your teacher or you may write to us also.

Wishing you all the success.

Yours

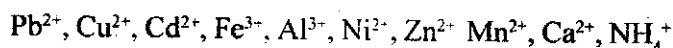
M. Sastri
Tutor Chemistry

CONTENTS

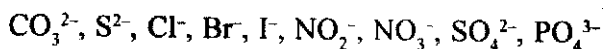
Sl. No.	Page No.
(A) Introduction	i - V
(B) General Safety Measures and Acquaintances with Basic Laboratory Techniques	1-12
(C) List of Experiments	
1. Preparation, collection and study of some important physical and chemical properties of at least three gases, one each from the following groups: (a) Hydrogen and oxygen (b) Carbon dioxide and hydrogen sulphide (c) Chlorine, hydrogen chloride, and sulphur dioxide	3-25
2. Preparation of dilute solution of given concentration of sulphuric acid, hydrochloric acid and nitric acid.	26-28
3. Study of interaction of metals (any four) with salt solution and arranging them according to their activity (to form activity series). Metals and salts may be selected from the following. Mg, Zn, Fe, Sn, Pb, Cu and Al and their salts. (Checking the order of metals in series based on the electrode potential will be desirable).	29-32
4. a) Determination of pH of following substances by using a universal indicator solution or pH papers. i) Salt solution ii) Acids and bases of different dilutions. iii) Vegetable and fruit juices b) Study of pH change by common-ion effect in case of weak acids and weak bases by above method (specific examples of CH_3COOH and CH_3COONa and NH_4OH and NH_4Cl may be taken).	33-37
5. Determination of melting point of a solid substance of low melting point (below 100°C) by glass capillary tube method (Paraffin oil may be used as bath).	38-41
6. To study the solubility of solid substances in water at different temperatures and to plot the solubility curve.	42-45
7. Study of the shift in equilibrium between ferric ions and thiocyanate ions by increasing/decreasing the concentration of their ions.	46-50
8. Study of: a) the effect of concentration on the rate of reaction between sodium thio-sulphate and hydrochloric acid.	51-56

- b) the effect of temperature on the rate of reaction between sodium thiosulphate and hydrochloric acid.
9. Separation of coloured substances by paper chromatography and comparison of their R_f values. 57-62
- (a) a mixture of red and blue ink or a black ink.
- (b) juice of a flower or grass.
10. Detection of nitrogen, sulphur and halogens in an organic compound (combinations of halogens to be avoided). Not more than two of the above elements should be present in the given organic compound. 63-69
11. Study of simple reactions of carbohydrates, fats and proteins in pure form and detection of their presence in given food stuffs. 70-81
12. Preparation of soap by using different oils and its comparison with the market soap by determining the foaming capacity and cleaning effect. 82-86
13. a) Preparation of solution of oxalic acid and ferrous ammonium sulphate of known molarity by weighing (non-evaluative). 87-97
- b) A study of (i) acid-base and (ii) redox titrations (single titration only). Both the solutions to be provided.
14. Elementary qualitative analysis of a salt involving detection of one cationic and one anionic species from the following groups. (Salts insoluble in hydrochloric acid excluded). 98-127

Cations :



Anions:



15. Functional groups in organic compounds
- (i) Test of unsaturation
- (ii) Test for Carboxylic, phenolic, aldehydic and ketonic groups. 128-142

APPENDIX

- (i) Common Laboratory reagents and their preparation.