**General Laboratory Guidelines**

**1.1 Safety**

Safe practices in the biochemistry laboratory are of great significance. Students must adopt safe and skillful

methods while working in the lab. To achieve this goal the student must obtain the prerequisite knowledge of properties of materials present in the lab and must be acquainted with different hazards and harmful effects associated with their improper handling.

**1.1.1 Regulations**

1. Throughout your stay in the laboratory, you must wear safety goggles.

2. Immediately inform your instructor in case of any accident.

3. Do not eat, drink, chew, or smoke in the laboratory.

4. Do not depart from the lab leaving an experiment unattended. If you need to leave the lab, you must inform your instructor before leaving the lab.

5. After finishing the experiment turn off all the equipment, clean your workbench and reshelf all the equipment or chemicals.

6. Not sticking to these rules will result in instant removal from the lab.

**1.1.2 Precautions**

1. You must come to the lab with a serious awareness of personal liability and utmost consideration for others in the lab.

2. You must acquaint yourself with safety equipment location, acid-base neutralizing agents, eyewash, fire extinguisher, emergency shower, broom & dustpan and broken glass container.

3. You must listen carefully to all the instructions given by your instructor. If you are unsure of anything, always ask your instructor.

4. You must immediately clean all chemical spills.

5. While handling the chemicals you must wear gloves, otherwise some chemicals may result in skin irritation.

6. While handling all electrical and heating equipment extra precautions must be taken to prevent shocks and burns.

7. Do not handle broken glassware with your bare hands.

8. You must wash your hands with soap after finishing the experiment.

**1.1.3 Personal clothing**

Selection of clothing for the laboratory is generally left to the discretion of the student. However, due to the harmful nature of some chemicals, it is in the best interest of the student to wear proper and suitable clothing. You must wear a lab coat to help keep clothes protected. Open toed shoes must not be worn because they cannot protect you against chemical spills. Long hair should be tied back to avoid interference with motion or observation.

**1.1.4 Equipment**

Equipment must be placed in a safe and secure manner. Hot plate must be placed in safe location and kept away from the edge of the bench to reduce chances of body contact.

**1.1.5 Glassware Handling**

Glassware in the lab is generally delicate and fragile, and if not handled properly, may cause serious injuries. Do not use any chipped or broken glassware. After finishing the experiment, all glassware must be cleaned and kept back at the proper place.

**1.1.6 Acids and Bases**

In metabolism lab experiments, you will be using different acids and bases. Hence, care must be taken to avoid skin contact. While handling these chemicals, avoid eye and face contact. In case of acid or base contact with your skin, wash it with large amount of clean, cold water and inform your instructor immediately. For your own protection, neutralize acid or base spills before cleaning them up.

**1.1.7 Laboratory Notebooks**

For all laboratory experiments, use a bound notebook to keep record of all primary data and observations. You must organize your notebook every week before coming to the lab by writing the title of the experiment on a new page, with important equations or formulae from the lab manual, and all necessary calculations involving solution preparations, molar masses, etc.

Try to understand theoretical concepts and particular instructions given by your instructor before the experiment. The lab notebook must have a record of every experiment. The lab notes should be written in a manner that other people could understand them. Excellent note taking in the lab is an important skill that can be learned with little effort and practice.

**1.1.8 Guidelines to be followed**

1. Carry your notebook to the lab for each experiment.

2. Number all the pages in sequential order.

3. Use your notebook to record values directly and do not use loose scraps of paper.

4. Mention each measured quantity by its name and indicate the units.

5. Simply strike through the sentence and write the new sentence next to it, if you make a mistake in your notebook.

6. Tables are very useful to simplify the data entry; they should be prepared in advance before starting the experiment.

7. Do not depend on your memory and write down all observations, for example color and phase changes, etc.

8. Last but not the least, you must write a brief conclusion of your experiment. It should address the objectives of conducting the experiment.