MUGBERIA GANGADHAR MAHAVIDYALAYA
P.O.—BHUPATINAGAR, Dist.—PURBA MEDINIPUR, PIN.—721425, WEST BENGAL, INDIA
NAAC Re-Accredited B+Level Govt. aided College
CPE (Under UGC XII Plan) & NCTE Approved Institutions
DBT Star College Scheme Award Recipient
E-mail : mugberia_college@rediffmail.com // www.mugberiagangadharmahavidyalaya.ac.in

CHEMISTRY LABORATORY

STANDARD OPERATING PROCEDURE

STANDARD OPERATING PROCEDURE FOR UV – VISIBLE SPECTROPHOTOMETER	
Name of the Lab	**Chemistry**
Purpose	**To outline the process for operating and maintaining the UV-Visible Spectrophotometer.**
Scope	**This apparatus is employed to quantify the extent to which a liquid sample absorbs light at a specific wavelength.**
Responsibility	**The Lab In-Charge is accountable for instructing the Lab Assistant and students in this protocol and ensuring strict compliance. It is the duty of students and technicians to adhere to the provided Standard Operating Procedure (SOP) and promptly report any deviations or issues encountered during the procedure to the Lab In-Charge.**
SOPs	
• Open panel door and make sure cuvette holders are empty, and then close the panel door. • Flip open the display unit and Turn spectrophotometer "ON" by flipping the yellow switch on the side of the machine. The machine will automatically initialize. • Hold the cuvette from the top to prevent tampering with the measurements, and wipe the sides with a lab tissue. • Open panel door and place the cuvettes with blank solution in the cuvette holders. When the Auto Zero is complete, open the panel door and remove the front cuvette. • Do not replace cuvette in rear holder.	

- Using the same cuvette style, fill an empty cuvette with about 2-ml of the sample.
- Clean the cuvette with a lab tissue.
- Place in front cuvette holder, using the appropriate orientation and close the panel door.
- Press START to take a reading.
- Select spectrum from the drop down menu
- Press save as and give name and save.
- Open panel door and remove test sample from front cuvette holder.
- To test additional samples: Place cuvettes in front holder and press start for a reading.
- Press RETURN to bring you back to step Note: This will erase your old data.
- Remove cuvettes remaining in holders.
- Then click on the Disconnect button near the bottom of the screen.
- Exit from the UV-Probe software.
- Flip power switch located on the side, to turn off the machine.

PRECAUTIONS TO BE FOLLOWED N/A

RECORD TO BE MAINTAINED

- Laboratory Manual containing the experiments that can be performed with the equipment
- Maintenance Record

STANDARD OPERATING PROCEDURE FOR CONDUCTIVITY METER	
Name of the Lab	**Chemistry**
Purpose	**To outline the process for operating and maintaining the Conductivity Meter**
Scope	**This apparatus is employed for determining conductivity in Liquid and water samples.**
Responsibility	**The Lab In-Charge is accountable for instructing the Lab Assistant and students in this protocol and ensuring strict compliance. It is the duty of students and technicians to adhere to the provided Standard Operating Procedure (SOP) and promptly report any**

	deviations or issues encountered during the procedure to the Lab In-Charge.
SOPs	
➢ Turn on the meter. ➢ Rinse the probe with DI water. ➢ Dip probe into sample making sure there are no air bubbles trapped on the slot of the probe. ➢ Stir the probe gently in the sample to create a homogenous sample, allowing a few seconds for the temperature reading to approach the solution temperature ➢ Take reading (when the reading is stable 'READY' will display on the left-middle of the LCD. PRECAUTIONS TO BE FOLLOWED Do not use or install the this equipment in any manner other than which is specified RECORD TO BE MAINTAINED ➢ Laboratory Manual containing the experiments that can be performed with the equipment ➢ Maintenance Record	

STANDARD OPERATING PROCEDURE FOR CENTRIFUGE	
Name of the Lab	**Chemistry**
Purpose	**To outline the process for operating and maintaining the Centrifuge**
Scope	**This Standard Operating Procedure (SOP) applies to the staff and students using the Centrifuge in the Lab**
Responsibility	**The Lab In-Charge is accountable for instructing the Lab Assistant and students in this protocol and ensuring strict compliance. It is the duty of students and technicians to adhere to the provided Standard Operating Procedure (SOP) and promptly report any deviations or issues encountered during the procedure to the Lab In-Charge.**

SOPs
➢ Press the start/stop button and slowly increase the rpm to the desired speed using the dial ➢ Once a run is complete, make sure the rotor has COMPLETELY STOPPED before opening the centrifuge lid by depressing the red stop/start button. ➢ Remove sample vials. ➢ Remember to return the rpm dial back to zero after finishing. PRECAUTIONS TO BE FOLLOWED ➢ Proper handling of the instrument ➢ Ensure level and stability ➢ Balance centrifuge tubes equally ➢ Ensure use of rubber cushion for glass tubes ➢ Bring speed Knob to off and increase the speed gradually. ➢ Do not open the lid in between the centrifugation cycle RECORD TO BE MAINTAINED ➢ Laboratory Manual containing the experiments that can be performed with the equipment ➢ Maintenance Record

STANDARD OPERATING PROCEDURE FOR pH METER	
Name of the Lab	**Chemistry**
Purpose	**To outline the process for operating and maintaining the pH METER**
Scope	**This Standard Operating Procedure (SOP) provides guidance on the proper utilization and upkeep of a pH meter. The instrument is designed for precise pH measurement of buffer solutions employed in the Chemistry laboratory.**
Responsibility	**The Lab In-Charge is accountable for instructing the Lab Assistant and students in this protocol and ensuring strict compliance. It is the duty of students and technicians to adhere to the provided Standard**

	Operating Procedure (SOP) and promptly report any deviations or issues encountered during the procedure to the Lab In-Charge.

SOPs

- Before use, rinse the electrode with deionized water and blot dry with a soft, clean Paper towel.
- Transfer the electrode to the test solution.
- Compensate for the temperature if necessary.
- Record the pH when the reading is stable (5–20 seconds after insertion of the electrode into the solution)
- Rinse the electrode with deionized water and store according to the manufacturer's Instructions.

Cleaning and maintenance

- Clean the pH meter with a soft, clean, damp paper towel after use. No solvents should be used.
- Replace the electrode filling solution on a regular basis, according to the Manufacturer's instructions. Record in the logbook (Adjust the speed control knob to a low stirring rate.

PRECAUTIONS TO BE FOLLOWED

- Thoroughly wash the stir bar with distilled water after each application.
- Store stir bars in pairs to maintain their magnetic strength and increase their life Span.

RECORD TO BE MAINTAINED

- Laboratory Manual containing the experiments that can be performed with the equipment
- Maintenance Record

STANDARD OPERATING PROCEDURE FOR COLORIMETER	
Name of the Lab	**Chemistry**
Purpose	**To outline the process for operating and maintaining the COLORIMETER**

Scope	**This SOP provides guidance on the proper utilization and upkeep of a COLORIMETER in the Chemistry laboratory.**
Responsibility	**The Lab In-Charge is accountable for instructing the Lab Assistant and students in this protocol and ensuring strict compliance. It is the duty of students and technicians to adhere to the provided Standard Operating Procedure (SOP) and promptly report any deviations or issues encountered during the procedure to the Lab In-Charge.**
SOPs	

- Switch on the instrument at least 5 minutes before use to allow it to stabilize.
- Select the most appropriate filter for the analysis and insert it in the light path or dial it in with the selector.
- Place the reagent blank solution (or water) in the cuvette and zero the instrument.
- Make sure the clear faces of the cuvette are in the light path
- Place the sample in the colorimeter and read the absorbance of the solution. If the absorbance is "over range" (usually > 2.0) then the sample must be diluted to yield a value within the limits of the instrument.
- At intervals, recheck the reagent blank to ensure that there is no drift in the zero Value.

PRECAUTIONS TO BE FOLLOWED

- The machine must be re-zeroed, if a new filter is chosen.
- The sample cuvettes must be at least two-thirds full.
- The outside of the cuvette must be dry and clean.

RECORD TO BE MAINTAINED

- Laboratory Manual containing the experiments that can be performed with the equipment
- Maintenance Record

Dr. Swapan Kumar Misra
Principal
Mugberia Gangadhar Mahavidyalaya

Principal
Mugberia Gangadhar Mahavidyalaya

MUGBERIA GANGADHAR MAHAVIDYALAYA
H.O.D.
Department of Chemistry