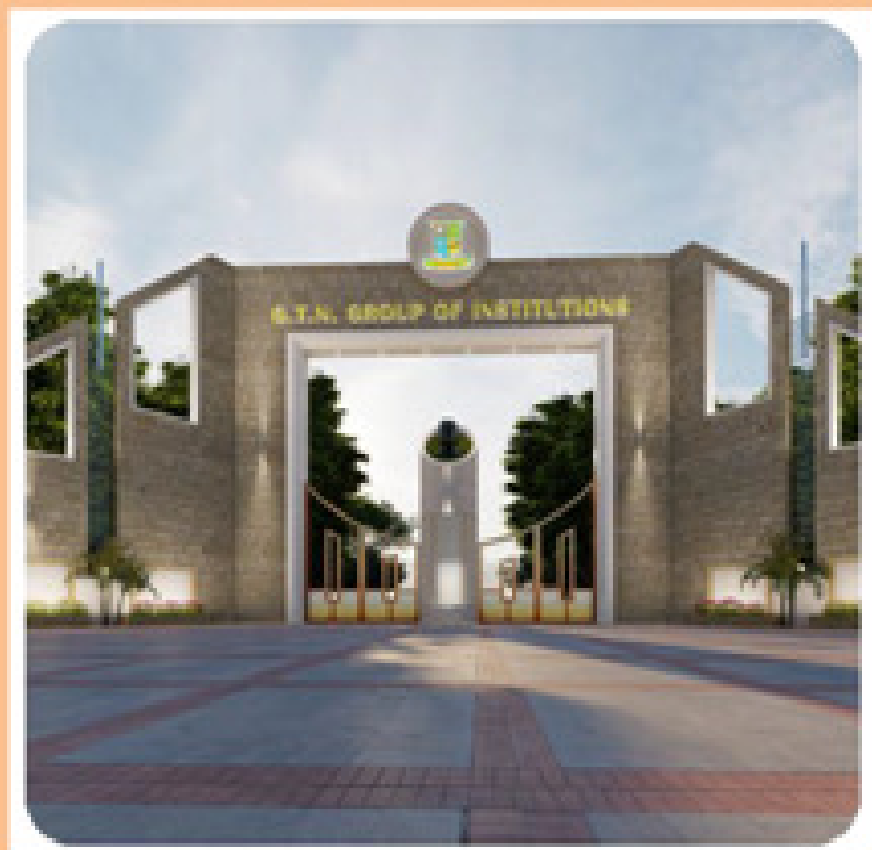


DEPARTMENT OF ZOOLOGY

STANDARD OPERATING PROCEDURE



ZOOLOGY LABORATORY



G.T.N. ARTS COLLEGE (AUTONOMOUS)

A Telugu Linguistic Minority Institution | Affiliated to Madurai Kamaraj University

Re-accredited (Cycle - II) by NAAC with 'A++' Grade

Recognized under DST STAR COLLEGE SCHEME | Supported by DST - FIST Program

Indexed in NIRF- 2024

Old Kamar Road, Dindigul – 624 005.

STANDARD OPERATING PROCEDURE (SOP) – EQUIPMENTS

(For Department of Zoology Students)

1. SOXHLET APPRATUS

- 1.1 Assemble the apparatus.
- 1.2 Fill the round bottom flask with solvent (n-Hexane).
- 1.3 Put the thimble containing sample into extraction tube.
- 1.4 Attach the extraction tube with flask containing solvent.
- 1.5 Attach a condenser unit with the extraction tube and run the water.
- 1.6 Fix the soxhlet apparatus on hot plate and heat the flask containing solvent.
- 1.7 The solvent starts to evaporate and falls in the extraction tube after condensing.
- 1.8 Continue this process till all the fat is extracted.
- 1.9 Discontinue the process and take out the thimble.
- 1.10 Again attach the extraction tube with flask containing solvent along with fat and condenser unit.
- 1.12 Again heat the flask to recover the solvent.
- 1.13 Discontinue the process and clean the extraction tube and thimble.

2. DISTILLATION UNIT

- 2.1 Fill the round bottom flask of distillation unit with water
- 2.2 Attach it with condenser and start the water supply
- 2.3 Switch on the unit.
- 2.4 Collect the distilled water in container

3. DIGITAL WEIGHING BALANCE

- 3.1 Make sure that the balance is kept clean.
- 3.2 Ensure that the calibration status is valid.
- 3.3 Ensure that spirit level is in the center of the circle.
- 3.4 Connect the power cable to the mains and switch „ON“.
- 3.5 Automatically self checking starts & ends with OFF.
- 3.6 Press ON/OFF key, all the display will glow.
- 3.7 Press “TARE KEY”, 0.00000 mark appears on the display.
- 3.8 The stability of the reading is obtained which is indicated by an arrow mark on the left side of the display.
- 3.9 Once the stability is attained, the balance is ready for weighing.
- 3.10 Place the material to be weighed on the pan & note down the reading after the arrow mark appears on the left side of the display.
- 3.11 After completion of weighing press, “ON/OFF” key, “STAND BY” light glows.
- 3.12 Clean the balance immediately after weighing.

4. STANDARD OPERATING PROCEDURE FOR WATER BATH

- 4.1 Fill the water bath to half its capacity.
- 4.2 Turn on the main supply.
- 4.3 The red LED bulb will glow.
- 4.4 Press SET key, SP will be displayed on the digital panel.
- 4.5 Set the required temperature by using the “UP” and “DOWN” keys and press ENTER.
- 4.6 Set the required percentage of power to 100 % and press ENTER key twice till the heater is switched on.
- 4.7 Once the temperature is attained, the thermostat will maintain the temperature.
- 4.8 After usage switch off the main power supply.
- 4.9 Empty out the water bath

5. HEATING MANTLE

- 5.1 Switch on the heating mantle.
- 5.2 Set the temperature.
- 5.3 Place the sample in the round bottom flask.

6. DIGITAL COLONY COUNTER

- 6.1 Switch on the colony counter.
- 6.2 Place the Petri-plate over counter.
- 6.3 Scroll the pen over the colony counter.
- 6.4 Count the colonies.

7. AUTOCLAVE

- 7.1 Switch on the autoclave.
- 7.2 Set the pressure at 15 psi.
- 7.3 Set the water level.
- 7.4 After putting the glassware, close the autoclave.
- 7.5 Sterilize at 121 C (15psi) for 15 minutes.

8. HIGH PRESSURE AUTOCLAVE

- 8.1 Switch on the autoclave.
- 8.2 Set the pressure at 15 psi.
- 8.3 Set the water level.
- 8.4 After putting the glassware, close the autoclave.
- 8.5 Sterilize at 121 C (15psi) for 15 minutes.

9. OLYMPUS STUDENT MICROSCOPE

- 9.1 Clean the lens.
- 9.2 Set the slide on the stage.
- 9.3 Focus the slide with particular objective.
- 9.4 View the specimen.

10. OLYMPUS MAGNUS INCLINED MICROSCOPE

- 10.1 Switch on the microscope.
- 10.2 Clean the lens.
- 10.3 Set the slide on the stage.
- 10.4 Focus the slide with particular objective.
- 10.5 View the specimen.

11. UV visible spectrophotometer

- 11.1 Switch on the power supply from power board.
- 11.2 Start the computer system and UV machine.
- 11.3 Now use password on comp system: uv123.
- 11.4 Put reference solvent in both cuvettes in UV machine.
- 11.5 Click on carry win UV (software on desktop).
- 11.6 Click on scan icon.
- 11.7 Set up - visible to UV up - baseline up - baseline correction up - ok up – baseline – yes.
- 11.8 Put reference inner portion and put sample front portion the UV chamber.
- 11.9 Click on start button.
- 11.10 After getting complete graph click on finish option.
- 11.11 Now click on trace reference baseline - removed by selection - new get single UV graph of sample without baseline on display.
- 11.12 Now click on print per view – print - select cute PDF writer - OK and saved.

11.13 For shut down the computer - click on close button in software. After shutting down computer close back switch of machine.

11.14 Switch on the power supply from power board.

12. COLORIMETER

12.1 Insert plug in the socket.

12.2 Switch on the instrument at least 15 minutes before use.

12.3 Ensure to keep water blank before switching on the instrument.

12.4 Set the required wavelength.

12.5 Select %T using the knob and adjust to 100%.

12.6 Switch the knob to O.D which should be zero.

12.7 Clean the cuvettes after use.

12.8 Make an entry in the log book.

13. MAGNETIC STIRRER WITH HOT PLATE

13.1 Switch on the instrument.

13.2. Set temperature by turning the temperature knob in clockwise direction.

13.3 To select a speed turn the “SPEED” control clockwise until the desired mixing action is achieved. The illuminated “STIR” pilot light shows when the unit is stirring. Stirring capability is 100-1000.

13.4 Turn off the temperature and speed knob, then switch off the instrument.

14. DIGITAL pH METER

14.1 Switch on the instrument.

14.2 Remove the electrode dipped in electrode buffer (3M KCl)

14.3 Rinse with distilled water.

14.4 Dry the outer surfaces of the electrode with a clean dry tissue.

14.5 Dip electrode in solution whose pH has to be measured.

14.6 After use rinse the electrode in distilled water, dry and dip the electrode back in the electrode buffer.

14.7 Switch off the instrument after use.
