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|  | Practical Plan |  |
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| Name of the college: Government college of Arts Science and commerce Sanquelim Goa.                                                                                                                                                                                                                                                                                                      |                    |                                      |
|                                                                                                                                                                                                                                                                                                                                                                                          |                    |                                      |
| Name of Faculty: Ms. Ankita M. Vernekar                                                                                                                                                                                                                                                                                                                                                  | Subject: Chemistry |                                      |
|                                                                                                                                                                                                                                                                                                                                                                                          |                    |                                      |
| Paper code: CHC-100                                                                                                                                                                                                                                                                                                                                                                      | Program: F.Y.B.Sc  | Division: A                          |
|                                                                                                                                                                                                                                                                                                                                                                                          |                    |                                      |
| Academic year: 2025- 2026                                                                                                                                                                                                                                                                                                                                                                | Semester: I        | Total Practicals/Labs: 10 (30 hours) |
|                                                                                                                                                                                                                                                                                                                                                                                          |                    |                                      |
| Credits: 1                                                                                                                                                                                                                                                                                                                                                                               |                    |                                      |
|                                                                                                                                                                                                                                                                                                                                                                                          |                    |                                      |
| Course Objectives:- To develop fundamental laboratory skills for determining solution properties, standardizing solutions, purifying compounds, and performing qualitative analysis with safe and accurate practices.                                                                                                                                                                    |                    |                                      |
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| <b>Expected Course Outcome:</b> <ol style="list-style-type: none"><li>1. Determine surface tension and viscosity of liquids using standard methods.</li><li>2. Prepare, dilute, and standardize chemical solutions accurately.</li><li>3. Perform purification techniques and assess compound purity.</li><li>4. Identify chemical nature and solubility of given substances.</li></ol>  |                    |                                      |
|                                                                                                                                                                                                                                                                                                                                                                                          |                    |                                      |
| <b>Student Learning Outcome:</b> <ol style="list-style-type: none"><li>1) Determine surface tension and viscosity of liquids using standard methods.</li><li>2) Prepare, dilute, and standardize chemical solutions accurately.</li><li>3) Perform purification techniques and assess compound purity.</li><li>4) Identify chemical nature and solubility of given substances.</li></ol> |                    |                                      |
|                                                                                                                                                                                                                                                                                                                                                                                          |                    |                                      |

| Month       | Practicals/Labs Scheduled Date | No. of Practical's/Labs planned | List of Experiments                                                                                                                          | Reference books                                                                              |
|-------------|--------------------------------|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| June        | 23/06/2025-28/06/2025          |                                 | Practicals not started                                                                                                                       |                                                                                              |
| June/July   | 30/06/2025-05/07/2025          | 1                               | Pre-Lab session (Laboratory safety, concept of normality and molarity and stoichiometric calculations)                                       | O. P. Pandey, D. N. Bajpai, S. Giri, <i>Practical Chemistry</i> , S. Chand Publication 2013. |
| July        | 07/07/2025-12/07/2025          | 1                               | Calibration of Burette and Pipettes.                                                                                                         | O. P. Pandey, D. N. Bajpai, S. Giri, <i>Practical Chemistry</i> , S. Chand Publication 2013. |
| July        | 14/07/2025-19/07/2025          | 1                               | Recrystallization of Benzoic acid by using water as solvent and determination of melting point.                                              | O. P. Pandey, D. N. Bajpai, S. Giri, <i>Practical Chemistry</i> , S. Chand Publication 2013. |
| July        | 21/07/2025-26/07/2025          | 1                               | Sublimation of Naphthalene and Determination of Melting point.                                                                               | O. P. Pandey, D. N. Bajpai, S. Giri, <i>Practical Chemistry</i> , S. Chand Publication 2013. |
| July/August | 28/07/2025-02/08/2025          | 1                               | Distillation of Acetone and determination of boiling point.                                                                                  | O. P. Pandey, D. N. Bajpai, S. Giri, <i>Practical Chemistry</i> , S. Chand Publication 2013. |
| August      | 04/08/2025-09/08/2025          | 1                               | To prepare 100 mL of standard 0.1 M $K_2Cr_2O_7$ solution and carry out dilution to 0.05, 0.01, 0.005, and 0.001 M in 100 mL standard flasks | O. P. Pandey, D. N. Bajpai, S. Giri, <i>Practical Chemistry</i> , S. Chand Publication 2013. |
| August      | 11/08/2025-16/08/2025          | 1                               | Volumetry: To prepare 100 ml of 0.1 N KHP solution and standardize the given approximate 0.1 N NaOH solution.                                | O. P. Pandey, D. N. Bajpai, S. Giri, <i>Practical Chemistry</i> , S. Chand Publication 2013. |
| August      | 18/08/2025-23/08/2025          | 1                               | Gravimetric analysis: Determination of percentage composition of the given mixture $ZnO + ZnCO_3$                                            | O. P. Pandey, D. N. Bajpai, S. Giri, <i>Practical Chemistry</i> , S. Chand Publication 2013. |
| August      | 25/08/2025-30/08/2025          | 1                               | <b>GANESH CHATURTHI HOLIDAY</b>                                                                                                              | O. P. Pandey, D. N. Bajpai, S. Giri, <i>Practical Chemistry</i> , S. Chand Publication 2013. |
| September   | 01/09/2025-06/09/2025          | 1                               | Determination of viscosity of two unknown liquids or dilute solutions by using Ostwald's viscometer.                                         | O. P. Pandey, D. N. Bajpai, S. Giri, <i>Practical Chemistry</i> , S. Chand Publication 2013. |

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|-------------------|-----------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| September         | 08/09/2025-13/09/2025 | 1 | Study of the variation of viscosity of an aqueous solution with concentration of solute                                                                                      | O. P. Pandey, D. N. Bajpai, S. Giri, <i>Practical Chemistry</i> , S. Chand Publication 2013. |
| September         | 15/09/2025-20/09/2025 | 1 | Determination of surface tension of two unknown liquids or dilute solutions by stalagmometer method.                                                                         | O. P. Pandey, D. N. Bajpai, S. Giri, <i>Practical Chemistry</i> , S. Chand Publication 2013. |
| September         | 22/09/2025-27/09/2025 | 1 | Determination of solubility and chemical nature of both solids and liquids. Water insoluble (Acid//phenol/ Base/Neutral) and water soluble (Acid/Neutral) of given compound. | O. P. Pandey, D. N. Bajpai, S. Giri, <i>Practical Chemistry</i> , S. Chand Publication 2013. |
| September/October | 29/09/2025-04/10/2025 | 1 | Determination of solubility and chemical nature of both solids and liquids. Water insoluble (Acid//phenol/ Base/Neutral) and water soluble (Acid/Neutral) of given compound. | O. P. Pandey, D. N. Bajpai, S. Giri, <i>Practical Chemistry</i> , S. Chand Publication 2013. |
| October           | 06/10/2025-11/10/2025 | 1 | Repetitions                                                                                                                                                                  | O. P. Pandey, D. N. Bajpai, S. Giri, <i>Practical Chemistry</i> , S. Chand Publication 2013. |
| October           | 13/10/2025-18/10/2025 | 1 | Exam                                                                                                                                                                         |                                                                                              |

#### Assessment Rubrics

| Component         | Max Marks |
|-------------------|-----------|
| ISA 1             | -         |
| ISA 2             | -         |
| Practical         | 25        |
| Project           | -         |
| Semester End Exam | -         |