

**DEPARTMENT OF CHEMISTRY  
REPORT OF FIRST TERM 2019-20**

**Name of Staff:**

**Senior College:**

1. Dr. I.Mendes, Head of Dept.
2. Dr. P.Shetty
3. Ms. R.Ferns
4. Dr. S.Murthy
5. Ms. T.Asha
6. Ms. L.Jeysus
7. Sr. R.Khandagale

**Junior College:**

1. Ms. B. Gonsalves
2. Ms. S.Rathod
3. Ms. B.Shaikh

**A] TEACHING AND LEARNING:**

**I] Teaching Aids used:** In order to make the study of chemistry simple and interesting, a variety of teaching aids are used by the staff. These include:

- i. **Ball and stick molecular models, solid state models, chemistry molecular model kit:** Molecular models give a 3-D view of the molecule and thus help students to visualize the molecule and understand the molecular structure better. These were used for topics like stereochemistry, hybridization, solid state chemistry, molecular symmetry, co-ordination chemistry etc.-Dr.S.Murthy, Ms.R.Ferns, Ms. L.Jeysus.
- ii. **Practical demonstrations:**
  - a) The change in colour of compounds on adding solvents of different pH- Ms.L.Jeysus for the TYBSc students.
- iii. **Use of PowerPoint presentations by staff:**
  - a) PPT on 'Optical Activity' for F.Y.B.Sc. class- Ms. L.Jeysus
  - b) Videos shown on spectroscopy in the T.Y.B.Sc. class- Sr. R.Khandagale
  - c) Video shown on 'Fate of Excited molecules' to T.Y.B.Sc. class- Ms. L.Jeysus
  - d) PPT on HPTLC for the TYBSc class-Dr.P.Shetty
  - e) PPT on GM Counter and Scintillation Counter for the TYBSc class-Dr. I.A.Mendes.
- iv. **Creative activities used for teaching chemistry:**
  - a) The SYBSc students displayed interesting articles related to Chemistry on the Chemistry Board which would be changed every week.
  - b) 'A prayer for rain' based on the ill-effects of the Bhopal gas Tragedy movie was screened for the SYBSc students-Dr. P.Shetty

- c) Students were assigned topics for PPT presentations to help them understand the topic in depth- Dr. P.Shetty
- d) POGIL was used for teaching Molecular Symmetry for TYBSc students - Ms. R Ferns.

**v. Other teaching strategies**

**Worksheets were provided to students on topics like:**

- a) Numericals for T.Y.B.Sc. students – Sr. R.Khandagale.
- b) Errors and significant figures for SYBSc- Dr.P.Shetty
- c) IUPAC nomenclature for F.Y.B.Sc. students- Ms.L.Jeysus.
- d) IUPAC nomenclature for T.Y.B.Sc. students- Ms.L.Jeysus

**III] Teaching learning in the laboratory:**

- i. Separation of commercially available food colours using paper chromatography for TYBSc students by Ms. L.Jeysus.
- ii. Project on extraction of natural dyes and dyeing of fabric using natural dyes for TYBSc students by Ms. L.Jeysus and Ms. R.Ferns.
- iii. Estimation of Magnesium in talcum powder for TYBSc students -Ms.T Asha.
- iv. Heat of dissolution of calcium chloride for FYBSc students-Ms. T Asha.
- v. Estimation of Ibuprofen content in commercial sample of tablets-Ms.L.Jeysus.
- vi. Estimation of acid neutralizing capacity of herbal antacids- for TYBSc students by Ms. R.Ferns.
- vii. Effect of heat on the vitamin C content of leafy vegetables- for TYBSc students by Ms. R.Ferns.
- viii. Preparation of complex Copper acetylacetonate- for TYBSc students by Ms. R.Ferns.
- ix. Analysis of fluoride content in toothpaste spectrophotometrically for TYBSc students by- Dr. P.Shetty.
- x. Preparation of iron nanoparticles from used blades for TYBSc students by- Dr. P.Shetty.
- xi. Estimation of calcium carbonate in different types of toothpastes using complexometric titration with EDTA and spectrophotometrically- Dr. I.A.Mendes.
- xii. Estimation of phosphate spectrophotometrically in different types of cola- Dr. I.A.Mendes.

**III] Teaching chemistry- Beyond the classroom:** In working towards the College mission of providing holistic growth to students, the chemistry department organises a variety of activities for the students. These activities aim at exposing students to frontier areas of chemistry beyond the syllabus.

**i) Invited lectures:**

- a) Talk on ‘Opportunities after B.Sc and M.Sc in Chemistry’ by Mr. Kailash on 5<sup>th</sup> July 2019. D1

- b) Talk on 'Role of catalysts in Green Chemistry Revolution' in collaboration with IWSA by Dr. Radha Jayaraman on 20<sup>th</sup> July 2019. D2  
c) A talk on 'Health Impact of Social Media' by Dr. Mukesh Gupta on 26<sup>th</sup> July 2019  
D3

**ii) Literature surveys/ research work under EXSP program-**

**a) Literature surveys: nil**

**b) Research projects:**

- Guiding M.Sc students in preparation of silver nanoparticles using different fruit extracts as well as super absorbent molecules and validity of their biological activity-Dr. I.A. Mendes.
- Guided two M.Sc students in analysis of amylose from different brands of rice and analysis of polyphenols in different brands of shampoo -Dr.P.Shetty
- Guiding an EXSP student for research project "Exploring antioxidant potential of drought resistant plants in Rajasthan." - Dr.P.Shetty

**iii) Chemistry Club:** Sr. R.Khandagale and Ms. L.Jeysus are the co-coordinators of the club for 2019-20. Activities organized in the College:

**a)** The SYBSc students displayed interesting articles related to Chemistry on the Chemistry Board which would be changed every week.

**b)** The MSc Part II students conducted a Chem Quiz 'CHEMQUEEN' for the undergraduate students on 26<sup>th</sup> July 2019. D6

**d)** The MSc Part I students conducted a Chem Quiz 'Come, Play Periodically' based on the Periodic Table to commemorate the international year of the Periodic table, for the FYBSc students on 28<sup>th</sup> August 2019. D4

**iv) Field trips:** Visit to NCL (National Chemical Laboratory) Pune on 22<sup>nd</sup> August 2019.  
D5

**IV] Other activities organized by the Department:**

**i) Creating awareness:**

**a)** Screening of the movie 'Trust' for the FYBSc students to make them aware of the ill-effects of social media-Sr R.Khandagale.

**b)** Screening of the movie 'Water' for the SYBSc students- Dr. S. Murthy.

**ii) Student development activities:**

- Students were encouraged to enroll for the short -term IYPT online course and a total number 117 students registered for the same.
- Bonding session for TYBSc and FYBSc students (CLS Batch) by Dr. Jennie Mendes.

**iii) Student follow up through contact group:** Every student studying chemistry is assigned a contact teacher who follows up their academic progress/ problems through the year. At FY and SY level the practical teacher is the contact teacher whereas T.Y.B.Sc.

students are divided into groups and assigned one staff member each as the contact teacher.

**iv) Staff–student fun activities:**

- Eid party for TYBSc students organized by Ms. T.Asha on 14<sup>th</sup> August 2019 attended by all the staff members.
- Chem Housie for SYBSc students -Ms R Ferns

**v) Others:**

Encouraged SY, TY and M.Sc students to participate in the 36<sup>th</sup> Aptitude Test in Chemistry held by ACT at Ruia College on 15<sup>th</sup> September 2018.D8

**B| STAFF ACTIVITIES:**

**I| Workshops, seminars, conferences, talks attended/organised in the college:**

- i. EXSP Literature Survey presentations organized by Dr. S. Murthy on 28<sup>th</sup> June 2019-attended by Sr R.Khandagale. Ms. L.Jeysus.
- ii. Talk on ‘Opportunities after B.Sc and M.Sc in Chemistry’ by Mr. Kailash on 5<sup>th</sup> July 2019 organised by Dr. I A.Mendes attended by Dr.I.Mendes, Dr.S.Murthy, Ms.T.Asha, Ms. L.Jeysus.
- iii. Goals Sharing meeting towards the theme of the College ‘Fostering Secularism and Social Responsibility’ presented by Dr. S. Murthy on 19<sup>th</sup> July 2019 attended by Dr.I.Mendes, Dr.P.Shetty, Ms.R.Ferns Dr.S.Murthy, Ms.T.Asha, Ms. L.Jeysus, Sr. R.Khandagale.
- iv. Talk on ‘Role of catalysts in Green Revolution’ in collaboration with IWSA by Dr. Radha Jayaraman organized by Dr.S.Murthy and Dr.I.Mendes on 20<sup>th</sup> July 2019 attended by Dr.I.Mendes, Dr.P.Shetty, Ms.R.Ferns Dr.S.Murthy, Ms.T.Asha , Sr. R.Khandagale
- v. A talk on ‘Health Impact of Social Media’ by Dr. Mukesh Gupta organized by Dr. P.Shetty on 26<sup>th</sup> July 2019 attended by Dr.I.Mendes, Dr.P.Shetty, Ms.R.Ferns, Dr.S.Murthy, Ms.T.Asha, Ms. L.Jeysus, Sr. R.Khandagale.
- vi. Chemistry Quiz ‘Chemqueen’ was conducted for the undergraduate students organized by Ms. L.Jeysus and Sr. R Khandagale on 26<sup>th</sup> July 2019 attended by Dr.I.Mendes, Dr.P.Shetty, Ms.T.Asha, Ms. L.Jeysus, Sr. R.Khandagale.
- vii. Talk on ‘Periodic Table of the Universe and other stories’ by Dr. Arnab Bhattacharya organized by Ms. T Asha as a SIGMA club event on 30<sup>th</sup> July attended by Ms T Asha and Ms. R.Ferns.
- viii. Prize Distribution function on 3<sup>rd</sup> August 2019 attended by Dr. I.Mendes, Dr.P.Shetty, Ms.R.Ferns, Dr.S.Murthy, Ms.T.Asha, Ms. L.Jeysus and Sr.R.Khandagale.
- ix. SCESA coffee and cake to felicitate Dr. Sushma Deo on 9<sup>th</sup> August attended by Dr. P.Shetty.
- x. Co-ordinated and organized a visit to NCL (National Chemical Laboratory) on 22<sup>nd</sup> August 2019 -Sr. R Khandagale and Ms. L.Jeysus.
- xi. Talk on ‘Surrogacy in Indian Context Today’ on 23<sup>rd</sup> August 2019 attended by Dr. P.Shetty, Dr. S. Murthy and Ms. L.Jeysus.

- xii. Organised, conducted and attended second BOS meeting of Chemistry Department on 13<sup>th</sup> September 2019.
- xiii. Second Academic Council BOS meeting of Sophia College on 20<sup>th</sup> September 2019 attended by Dr. I.A.Mendes.
- xiv. Was part the peace march in honour of Mahatma Gandhi on 1<sup>st</sup> October 2019- Sr  
R.Khandagale.

**II] Workshops seminars, conferences, talks,etc. attended outside the college:**

**III] Contribution to Department and College administration/activities:**

**i) Dr I Mendes:**

- a) Controller of Examination, Sophia College (Autonomous)
- b) Head of Department.
- c) Member of BOS-Chemistry Sophia College (Autonomous)

**ii) Dr P Shetty**

- a) Member of BOS-Chemistry Sophia College (Autonomous)
- b) Science stores In-charge
- c) M.Sc Part II class In-charge

**iii) Ms. R Ferns**

- a) Member of BOS-Chemistry Sophia College (Autonomous)
- b) S.Y.B.Sc. class In-charge.
- c) NSS Program Officer.
- d) Member, Western Music Club
- e) Incharge for Sophia Student exchange Programme-2019

**iv) Dr S Murthy:**

- a) Co-ordinator- Chemistry Dept (Star College scheme)
- b) Member of BOS-Chemistry Sophia College (Autonomous)
- c) Co-ordinator, EXSP program
- d) Co-ordinator, Time Table Committee
- e) Member, Admission Committee
- f) M.Sc Part-I In-charge

**v) Ms. T Asha:**

- a) Member of BOS-Chemistry Sophia College (Autonomous)
- b) Member, Sigma Club
- c) Member, Prize Committee
- d) Member, Exam Committee
- e) Member, Magazine Committee
- f) T.Y.B.Sc. Class In-charge
- g) IQAC sub- committee for workshops
- h) Member, Nature Club

**vi) Ms L.Jesus**

- a) Co-opted Member of BOS-Chemistry Sophia College (Autonomous)
- b) Co-ordinator –MSc Analytical Chemistry
- c) Chemistry Club In-charge

**vii) Sr. R.Khandagale**

- a) Co-opted Member of BOS-Chemistry Sophia College (Autonomous)
- b) Hostel Dean
- c) Chemistry Club In-charge.
- d) FYBSc class In-charge.
- e) Discipline-Kaleidoscope
- f) IYPT Co-ordinator

**IV] Contribution to Quality Assurance Diploma program:**

**V] Contribution to NSS activities:** nil

**VI] Professional development:**

- Refresher Course in Chemistry at Kalina Campus from 31<sup>st</sup> October to 13<sup>th</sup> November 2019-Ms. T Asha and Ms R Ferns.
- Completed a short term Certificate course by the United nations on IYPT- Dr. P.Shetty, Ms.R.Ferns, Ms.T.Asha, Ms. L.Jeysus, Sr. R.Khandagale.

**VII] Staff research:** Awarded RUSA grant for the project ‘Analysis of nutrient levels in microgreens and adult plant-A comparative study- Ms R Ferns.

**VIII] Research publications:** nil

**IX] University work**

**i) Dr I Mendes:**

- a) Examiner for FYBSc Practical Examination held at Sophia College (Autonomous) on 19<sup>th</sup> October 2019.
- b) Paper Setting, preparing model Answer key, invigilation, assessment of SEE and IA papers of Sem I, III and V and M.Sc Sem I of Sophia College (Autonomous)
- c) Senior Supervisor for ATKT and SEE examination.

**ii) Dr P Shetty:**

- a) Examiner for TYBSc sem V (Analytical Chemistry) practical Examination held at Sophia College (Autonomous) on 4<sup>th</sup> and 5<sup>th</sup> October 2018.
- b) Examiner for MSc Sem III Practical Examination held at Sophia College (Autonomous) on 10<sup>th</sup> October 2019.
- c) Examiner for SYBSc Practical Examination held at Sophia College (Autonomous) on 27<sup>th</sup> and 28<sup>th</sup> September 2019.
- d) Paper Setting, preparing model Answer key, invigilation, assessment of SEE and IA papers of Sem III and Sem V of Sophia College (Autonomous).
- e) Junior Supervisor for ATKT and SEE examination.

**iii) Ms R Ferns:**

- a) Expert and Examiner for Sem V A.C. Practical exam held at Sophia College (Autonomous) on 18<sup>th</sup> September 2019.
- b) Expert for TYBSc Sem V (Inorganic Chemistry) Practical examination held at Sophia College (Autonomous) on 4<sup>th</sup> and 5<sup>th</sup> October 2019.
- c) Expert for MSc Sem III Practical Examination held at Sophia College (Autonomous) on 10<sup>th</sup> and 11<sup>th</sup> October 2019.
- d) Examiner for SYBSc Practical Examination held at Sophia College (Autonomous) on 30<sup>th</sup> September and 1<sup>st</sup> October 2019.
- e) Paper Setting, Preparing model Answer key, invigilation, assessment of SEE and IA papers of Sem III and sem V of Sophia College (Autonomous).
- f) Junior Supervisor for ATKT and SEE examination.

**iv) Dr S Murthy:**

- a) Expert for TYBSc Sem V (Organic Chemistry) Practical examination held at Sophia College (Autonomous) on 4<sup>th</sup> and 5<sup>th</sup> October 2019.
- b) Expert for MSc Sem III Practical Examination at held Sophia College (Autonomous) on 10<sup>th</sup> and 11<sup>th</sup> October 2019.
- c) Examiner for SYBSc Practical Examination held at Sophia College (Autonomous) on 27<sup>th</sup> and 28<sup>th</sup> September 2019.
- d) Paper Setting, Preparing model Answer key, invigilation, assessment of SEE and IA papers of Sem III and Sem V and M.Sc Sem I of Sophia College (Autonomous).
- e) Junior Supervisor for ATKT and SEE examination.

**v) Ms T Asha:**

- a) Expert for TYBSc Sem V (Physical Chemistry) Practical examination held at Sophia College (Autonomous) on 4<sup>th</sup> and 5<sup>th</sup> October 2019.
- b) Expert for MSc Sem III Practical Examination held at Sophia College (Autonomous) on 10<sup>th</sup> and 11<sup>th</sup> October 2019.
- c) Examiner for FYBSc Practical Examination held at Sophia College (Autonomous) on 17<sup>th</sup> and 18<sup>th</sup> October 2019.
- d) Paper Setting, preparing model Answer key, invigilation, assessment of SEE and IA papers of Sem I and V of Sophia College (Autonomous)
- e) Junior Supervisor for ATKT and SEE examination.

**vi) Ms. L.Jeysus**

- a) Expert and Examiner for Sem V A.C. Practical exam held at Sophia College (Autonomous) on 21<sup>st</sup> September 2019.
- b) Laboratory Supervisor and Expert for TYBSc Sem V (Analytical Chemistry) Practical examination held at Sophia College (Autonomous) on 4<sup>th</sup> and 5<sup>th</sup> October 2019.

- c) Laboratory Supervisor for MSc Sem III Practical Examination held at Sophia College (Autonomous) on 10<sup>th</sup> and 11<sup>th</sup> October 2019.
- d) Examiner for SYBSc Practical Examination held at Sophia College (Autonomous) on 30<sup>th</sup> September and 1<sup>st</sup> October 2019.
- e) Paper Setting, Preparing model Answer key, invigilation, assessment of SEE and IA papers of Sem I and sem V of Sophia College (Autonomous).
- f) Junior Supervisor for ATKT and SEE examination.

**vii) Sr. R.Khandagale:**

- a) Examiner for Sem V Inorganic Chemistry Practical exam held at Sophia College (Autonomous) on 4<sup>th</sup> and 5<sup>th</sup> October 2019.
- b) Expert for MSc sem III practical examination on 10<sup>th</sup> and 11<sup>th</sup> October 2019.
- c) Examiner for FYBSc Practical Examination held at Sophia College (Autonomous) on 17<sup>th</sup> and 18<sup>th</sup> October 2019.
- d) Paper Setting, Preparing model Answer key, assessment of SEE and IA papers of Sem I, III and sem V of Sophia College (Autonomous).
- e) Junior Supervisor for ATKT and SEE examination

**IX] Consultancy/Subject related work outside the college**

**i) Dr I.A. Mendes**

- a) Conducted an External Audit of Jhunjhunwala College, Ghatkopar on 19<sup>th</sup> July 2019.
- b) Member of LIC for PhD recognition for faculties of Science and Commerce of SP Dyansadhana College, Thane on 30<sup>th</sup> July 2019
- c) Appointed as Governing Body/ Vice Chancellors Nominee, Subject expert of screening and evaluation committee for CAS held at:
  - Kirti College on 4<sup>th</sup> October 2019
  - Wilson College on 18<sup>th</sup> October 2019
  - Bhavans Somani College on 20<sup>th</sup> November 2019
- d) External examiner for M.Sc Sem I practical exam (Physical Chemistry) held at Jai Hind College on 17<sup>th</sup> October 2019.
- e) Conducted M.Sc Sem I Paper I lectures at Ruia College.
- f)** Moderator for Sem I FYBSc at Jai Hind College (Autonomous) on 21<sup>st</sup> November 2019.

**ii) Ms T Asha**

- a) External examiner for TYBSc practical exam (Physical Chemistry) held at Khalsa College on 25<sup>th</sup> and 26<sup>th</sup> September 2019.
- b) External examiner for TYBSc practical exam (Inorganic Chemistry) held at Jai Hind College on 30<sup>th</sup> September and 1<sup>st</sup> October 2019.
- c) Double Blind correction for Sem V TYBSc Paper II for Jai Hind College.

**iii) Ms R Ferns:**

- a) Moderator for Sem II FYBSc Paper I and II at Royal College in May 2019.
- b) Reevaluation for Sem II FYBSc Paper I and II at Royal College in September 2019.



**iv) Dr. S. Murthy:**

- a) External examiner for M.Sc Sem I practical exam (Organic Chemistry) held at Jai Hind College on 18<sup>th</sup> October 2019.

**XI Others:**

- Dusshera Puja for better working of instruments in the laboratory organised by Dr.I.A.Mendes for teaching and non-teaching staff attended by Dr.I.Mendes, Dr.P.Shetty, Ms.R.Ferns, Dr.S.Murthy, Ms.T.Asha, Ms. L.Jeysus, Sr. R.Khandagale on 7<sup>th</sup> October 2019 .
- Worked as PRO for the Legislative Assembly election on 21<sup>st</sup> October 2019- Dr.I.Mendes, Ms.R.Ferns, Dr.S.Murthy, Ms.T.Asha.
- Conducted Interviews for the M.Sc Part I Admissions-Dr. I.A.Mendes, Dr.P.Shetty, and Ms. L.Jeysus.
- Hosted students from Nagaland University, visiting Sophia College Campus as part of the Science exchange programme in the Chemistry Laboartory on 9<sup>th</sup> September 2019.

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Dr. I.A. Mendes  
Associate Professor  
Head, Department of Chemistry  
Sophia College (Autonomous)  
30/11/2019